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東信工業 Unit-TK 株式会社

TOSHIN KOGYO UNIT-TK CO.,LTD.

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Toshincon  
ELECTRONIC  
COMPONENTS



東信工業 Unit-TK 株式会社  
TOSHIN KOGYO UNIT-TK CO.,LTD.





# 会社案内



本社（東京都千代田区）

当社は、1950年、長野県丸子町（現上田市）において、製糸業で創業し、「信頼される会社・品質第一・社会への貢献」を社是に歩んでまいりました。

経済発展の変化に対応し、電解コンデンサ・フィルムコンデンサの生産を開始し、激動のエレクトロニクス業界で、常に顧客ニーズに沿った特徴ある商品の開発により、信頼されるTOSHINCONブランドの評価を獲得しています。

また、ボーダーレス時代に対応し、海外有力企業とのコラボレーションを強化すると共に、メーカーとして培った品質管理システムを投入・管理した、液晶モジュールなどの各種電子部品の販売を拡大しております。

今後は、地球にやさしい環境配慮製品の開発と太陽光発電による温室効果ガス排出量の削減で社会への貢献という役割を果たしてまいります。

## 会社概要

**事業内容**  
 ・電解コンデンサ製造販売  
 ・フィルムコンデンサ製造販売  
 ・液晶モジュール販売  
 ・各種電子部品販売  
 ・不動産所有管理（アパート・工場賃貸）  
 ・太陽光発電

**事業所**  
 ・本社（東京）  
 ・丸子事業所・国内営業部（長野県）

**国内製造拠点**  
 ・糸魚川ティーケー株式会社

**関連会社**  
 ・ユニットTK株式会社  
 ・東莞市東承信电子有限公司

## CAMPANY PROFILE

**BUSINESS LINE**  
 ・Electrolytic capacitors  
 ・Film capacitors  
 ・Liquid Crystal Display module  
 ・Various electronic parts  
 ・Real estate (Apartment・Factory lease)  
 ・Photovoltaic generation

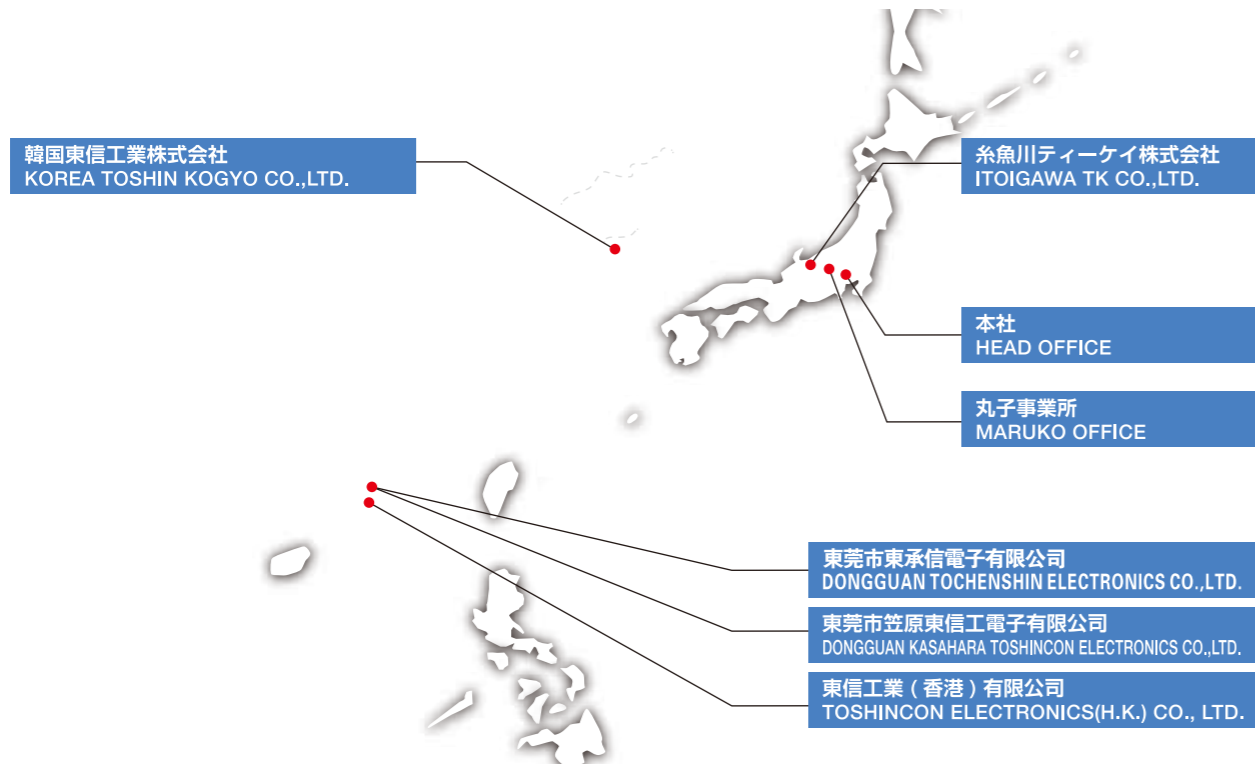
**OFFICE**  
 ・HEAD OFFICE (Tokyo)  
 ・MARUKO OFFICE/DOMESTIC SEALS DEP. (Nagano)

**DOMESTIC PRODUCTION NETWORK**  
 ・ITOIGAWA TK CO.,LTD.

**AFFILIATED COMPANY**  
 ・UNIT TK CO.,LTD.  
 ・TOCHENSHIN ELECTRONICS CO., LTD

## 生産・販売拠点

## PRODUCTION AND SALE



## 会社沿革

- 1950年 6月 株式会社東信製糸所設立
- 1959年10月 アルミニウム電解コンデンサ製造開始  
東信工業株式会社と社名変更
- 1962年 7月 フィルムコンデンサ製造開始
- 1965年 4月 炭素系可変抵抗器の製造開始
- 1973年 5月 板倉電子株式会社設立
- 1985年 6月 糸魚川ティーケー株式会社設立
- 1987年 3月 資本金6706万円に増資
- 2002年 9月 美商東信工股份有限公司設立
- 2003年 2月 中国の東莞横瀝東信工電子廠製造開始
- 2003年12月 東莞横瀝東信工電子廠でISO-9001認証取得
- 2004年 3月 丸子事業所でISO-14001認証取得
- 2004年 4月 糸魚川ティーケー(株)でISO-9001認証取得
- 2004年10月 液晶モジュールの販売を開始
- 2007年 7月 東莞横瀝東信工電子廠でISO-14001認証取得
- 2009年 1月 韓国東信工業株式会社を設立
- 2012年 4月 東信工業（香港）有限公司 設立
- 2015年 4月 東莞市横瀝笠原電子经营部 設立
- 2015年 9月 MUNDORF 社と販売契約を締結、販売開始
- 2017年11月 東莞市笠原東信工電子有限公司 設立
- 2017年12月 ユニットTK株式会社 設立
- 2021年 3月 東承信电子有限公司 設立

## COMPANY HISTORY

- Jun. 1950 Establish Toshin Co., Ltd.
- Oct. 1959 Begin to make AL Electrolytic Capacitors  
Name change to "Toshin Kogyo Co., Ltd."
- Jul. 1962 Begin to make Film Capacitors
- Apr. 1965 Start of manufacturing of carbon variable resistor
- May. 1973 Establish "Itakura Denshi Co., Ltd."
- Jun. 1985 Establish "Itoigawa TK Co., Ltd."
- Mar. 1987 The capital is increased to 67.06 million yen
- Sep. 2002 Establish "America Toshin Kogyo"
- Feb. 2003 Establish "Toshincon Electronics Factory"(China)
- Dec. 2003 ISO-9001 Certification (Toshincon Ele.)
- Mar. 2004 ISO-14001 Certification (Maruko office)
- Apr. 2004 ISO-9001 Certification (Itoigawa TK)
- Oct. 2004 Sales beginning of liquid crystal module
- Jul. 2007 ISO-14001 Certification (Toshincon Ele.)
- Nov. 2008 Establish Korea Toshin Kogyo
- Apr. 2012 Eatablish "TOSHINCON ELECTRONICS(H.K.)CO.,LTD. "
- Apr. 2015 Establish Dongguan Hengli Kasahara electronic business department (China)
- Sep. 2015 Signed sales agreement with German acoustic maker MUNDORF
- Nov. 2017 Establish Dongguan Kasahara Toshincon Electronics Co.,Ltd. (China)
- Dec. 2017 Establish UnitTK Co.,Ltd.
- Apr. 2021 Establish Tochen Shin Electronics Co.,Ltd(China)

## 主たる御納入先

- 国内**
- パナソニックグループ各社
  - オンキヨー株式会社
  - シャープ株式会社
  - セイコーエプソン株式会社
  - 株式会社東芝
  - パイオニア株式会社
  - 株式会社バッファロー
  - 株式会社日立製作所
  - 富士通ゼネラル株式会社
  - 船井電機株式会社
  - 三菱電機株式会社
  - ヤマハ株式会社
  - ラックスマン株式会社

## MAIN CUSTOMER

- DOMESTIC**
- Panasonic Group
  - ONKYO CORPORATION
  - SHARP CORPORATION
  - SEIKO EPSON CORPORATION
  - TOSHIBA CORPORATION
  - PIONEER CORPORATION
  - BUFFALO INC.
  - HITACHI, LTD.
  - FUJITSU GENERAL LIMITED
  - FUNAI ELECTRIC CO.,LTD.
  - MITSUBISHI ELECTRIC CORPORATION
  - YAMAHA CORPRATION
  - LUXMAN CORPORATION

## 海外(OVERSEAS)

- アメリカ(USA) APPLE Inc.  
DELL Inc.  
MOTOROLA Inc.
- 台湾(TAIWAN) PHIHONG TECHNOLOGY CO.,LTD.  
LITE-ON TECHNOLOGY CORP.  
ACER Inc.
- 韓国(KOREA) HUMAX CO.,LTD.  
SUNG HO ELECTRONICS CORP.  
DONG YANG E & P
- フィンランド(FINLAND) NOKIA CORPORATION

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## アルミニウム電解コンデンサ Aluminum Electrolytic Capacitors

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■チップ形アルミニウム電解コンデンサ／Chip Aluminum Electrolytic Capacitors

分類 Classification	シリーズ名 Type	概要 Application	カテゴリ温度範囲 Category temp. range (°C)	定格電圧範囲 Rated voltage (V. DC)	静電容量範囲 Capacitance (μF)	外装色 Sleeve color	印字色 Print color	掲載頁 Page
CE-32 標準品 Standard	VBS	85°C標準品 85°C Standardized	-40~+85	4~100	0.47~6800	—	黒 Black	20
	VFS	105°C品 105°C Use	-55~+105 -40~+105	6.3~63 100~400	0.47~12000 1~330	—	黒 Black	21
CE-32 高信頼性品 High Reliability	VLS	長寿命低インピーダンス品 Long-Life & Low-Impedance	-40~+105	6.3~50	10~330	—	黒 Black	22
	VKX	低インピーダンス品 Low-Impedance	-55~+105	6.3~100	3.3~6800	—	黒 Black	23
	VLX	長寿命低インピーダンス品 Long-Life & Low-Impedance	-55~+105	6.3~100	4.7~10000	—	黒 Black	24
	VLL	長寿命低インピーダンス品 Long-Life & Low-Impedance	-25~+105	6.3~50	10~1000	—	黒 Black	25
	VGA	高さ5.4mm, 低インピーダンス品 5.4mm Height, Low-Impedance	-55~+105	6.3~63	1.0~220	—	黒 Black	※
	VZX	低インピーダンス品 Low-Impedance	-55~+105	6.3~50	33~1800	—	黒 Black	26
	VZC	低インピーダンス品 Low-Impedance	-55~+105	6.3~35	68~2200	—	黒 Black	27
	VFH	低インピーダンス品 Low-Impedance	-55~+105	6.3~50	33~1800	—	黒 Black	28
	VLH	長寿命品 Long-Life	-40~+105	6.3~50	1.0~220	—	黒 Black	29
	VPC	125°C長寿命品 125°C Long-Life	-40~+105	6.3~200	1.0~4700	—	黒 Black	30
CE-32 両極性品 Bi-polar	VNP	両極性品 Bipolarized	-40~+85	6.3~50	1.0~47	—	黒 Black	※
	VFN	105°C両極性品 105°C Bipolarized	-55~+105	6.3~50	1.0~47	—	黒 Black	※

■小形アルミニウム電解コンデンサ／Miniature Aluminum Electrolytic Capacitors

分類 Classification	シリーズ名 Type	概要 Application	カテゴリ温度範囲 Category temp. range (°C)	定格電圧範囲 Rated voltage (V. DC)	静電容量範囲 Capacitance (μF)	外装色 Sleeve color	印字色 Print color	掲載頁 Page
CE-04 低インピーダンス品 Low Impedance	UCE	低インピーダンス品 2000-3000H Low-Impedance	-40~105°C	6.3~50	56~6800	黒 Black	白 White	32
	UCV	低インピーダンス品 3000-6000H Low-Impedance	-40~105°C	6.3~35	10~8200	茶 Brown	白 White	34
	UCY	長寿命低インピーダンス品 6000-10000H Long-Life & Low-Impedance	-40~105°C	6.3~100	10~18000	茶 Brown	白 White	36
	UCF	長寿命低インピーダンス品 6000-10000H Long-Life & Low-Impedance	-40~105°C	6.3~50	27~10000	青(透明) Clear Blue	黒 Black	39
CE-04 低インピーダンス品 非水系 Low Impedance Non-Aqueous	UCWKZ	低インピーダンス品 2000-5000H Low-Impedance	-55~105°C	6.3~63	12~6800	緑 Green	黒 Black	41
	UCWXZ	低インピーダンス品 3000-6000H Low-Impedance	-55~105°C	6.3~63	12~15000	緑 Green	黒 Black	43
	UCWYZ	長寿命低インピーダンス品 4000-10000H Long-Life & Low-Impedance	-55~105°C	6.3~63	15~18000	緑 Green	黒 Black	45
CE-04 高温度化品 High Temperature	UCWCZ	広温度範囲125°C品 Wide Operating Temp. 125°C Use	-40~125°C	10~63	1~4700	青(透明) Clear Blue	黒 Black	47
	UCWKT	広温度範囲130°C品 Wide Operating Temp. 130°C Use	-40~130°C -25~130°C	10~450	3.3~4700	青(透明) Clear Blue	黒 Black	48
CE-04 電源用途 For Switching Power Supply	UCWHM	中高圧105°C品 2000H Med. & High Voltage 105°C Use	-40~105°C -25~105°C	160~250 350~450	0.47~330 0.47~100	茶 Brown	白 White	50
	UCWHS	急速充電専用製品 2000~3000H Special product for quick charging source	-40~105°C	400~500	0.47~100	茶 Brown	白 White	52
	UCWV	高リプル長寿命品 5000H High Ripple & Long-Life	-25~105°C	200~450	3.3~150	茶 Brown	白 White	54
	UCWBX	高リプル長寿命品(8000-10000h) High ripple & Long life (8000-10000h)	-25~105°C	200~450	3.3~100	青(透明) Clear Blue	黒 Black	55
	UCWBA	高リプル長寿命品(12000h) High ripple & Long life (12000h)	-40~105°C -25~105°C	160~450	3.3~330	青(透明) Clear Blue	黒 Black	57
UCWHF	高リプル&低インピーダンス品2000~3000H High Ripple & low impedance	-40~105°C	160~450	6.8~560	青(透明) Clear Blue	黒 Black	59	
CE-04 薄形品 Low Profile	UCX	高さ5mm品 5mm Height	-40~85°C	4~50	0.1~470	黒 Black	白 White	※
	UCXW	高さ5mm品 5mm Height	-40~105°C	4~50	0.1~470	茶 Brown	白 White	※
	UCM	高さ7mm品 7mm Height	-40~85°C	4~50	0.1~470	黒 Black	白 White	61
	UCMD	高さ7mm品 7mm Height	-40~105°C	4~50	0.1~470	茶 Brown	白 White	※

CE-04 低漏れ電流品 Low Leakage Current	UCLS	低漏れ電流品 Low Leakage Current	-40~85°C	6.3~63	0.1~4700	橙 Orange	黒 Black	62
	UCWL	低漏れ電流105°C品 Low Leakage Current 105°C Use	-40~105°C	6.3~50	0.1~2200	橙 Orange	黒 Black	63
CE-04 両極性標準品 Bipolar	BPCE	両極性標準品 Bipolar Standardized	-40~85°C	6.3~63	0.1~2200	黒 Black	白 White	64

\*雷サージ対応品が可能で、3~4KVはブラックスリーブ銀白字、5~6KVは黄色スリーブ黒字。

\* Lightning protection may correspond, 3~4KV black silver sleeve white word, 5~6KV yellow sleeve black word.

■大形アルミニウム電解コンデンサ／Large Case Type Aluminum Electrolytic Capacitors

分類 Classification	シリーズ名 Type	概要 Application	カテゴリ温度範囲 Category temp. range (°C)	定格電圧範囲 Rated voltage (V. DC)	静電容量範囲 Capacitance (μF)	外装色 Sleeve color	印字色 Print color	掲載頁 Page
CE-69	LCE	基板自立形標準品 Snap-In Terminal Standardized	-40~+85 -25~+85	16~100 160~450	1000~33000 82~1800	黒 Black	白 White	65
	LCW	基板自立形105°C品 Snap-In Terminal 105°C Use	-40~+105 -25~+105	16~100 160~500	1000~33000 47~1800	黒 Black	白 White	67
	LCWA	基板自立形長寿命品 Snap-In Long-Life	-25~+105	200~450	270~1800	黒 Black	白 White	69
	LCWB	基板自立形長寿命品 Snap-In Long-Life	-25~+105	200~450	270~1500	黒 Black	白 White	70
	LCWS	基板自立形長寿命品 Snap-In Long-Life	-25~+105	200~450	270~1500	黒 Black	白 White	71
CE-33	SCL	ねじ端子形標準品 Screw Terminal Standardized	-40~+85 -25~+85	10~250 315~450	680~820000 270~15000	黒 Black	白 White	73
	SCW	ねじ端子形105°C品 Screw Terminal 105°C Use	-40~+105 -25~+105	200~250 350~400	1500~22000 1000~15000	黒 Black	白 White	76

■音響用アルミニウム電解コンデンサ / Aluminum Electrolytic Capacitors for Audio

CE-04 音響用 For Audio	UCSJ	ハイグレード品 High Grade	-40~+85	6.3~63	0.47~18000	透明 Clear	黒 Black	80
	UCSP	標準品 Standardized	-40~+85	6.3~63	0.47~18000	黒 Black	白 White	81
CE-04 両極性品 Bipolar	BPUC	スピーカーネットワーク用両極性品 Bipolarized type for Speaker Network	-40~+85	50	0.47~100	黒 Black	白 White	82
CE-32 音響用 For Audio	LCJ	オーディオ用基板自立形 Snap-in Terminal For Audio	-25~+85	25~63	1500~33000	黒 Black	白 White	83

■導電性高分子ハイブリッドアルミ電解コンデンサ／Hybrid Conductive Polymer Aluminum Electrolytic Capacitors

分類 Classification	シリーズ名 Type	概要 Application	カテゴリ温度範囲 Category temp. range (°C)	定格電圧範囲 Rated voltage (V. DC)	静電容量範囲 Capacitance (μF)	外装色 Sleeve color	印字色 Print color	掲載頁 Page
CE-32	HMB	長寿命品 Long Life Assurance	-55~+105	16~100	47~1500	—	赤 Red	85
	HMR	125°C高温, 高信頼品 125°C High Temperature, High Reliability	-55~+125	16~100	22~1500	—	赤 Red	87
CE-04	HPB	長寿命品 Long Life Assurance	-55~+105	16~100	47~1500	—	赤 Red	89
	HPR	125°C高温, 高信頼品 125°C High Temperature, High Reliability	-55~+125	16~100	22~1500	—	赤 Red	91



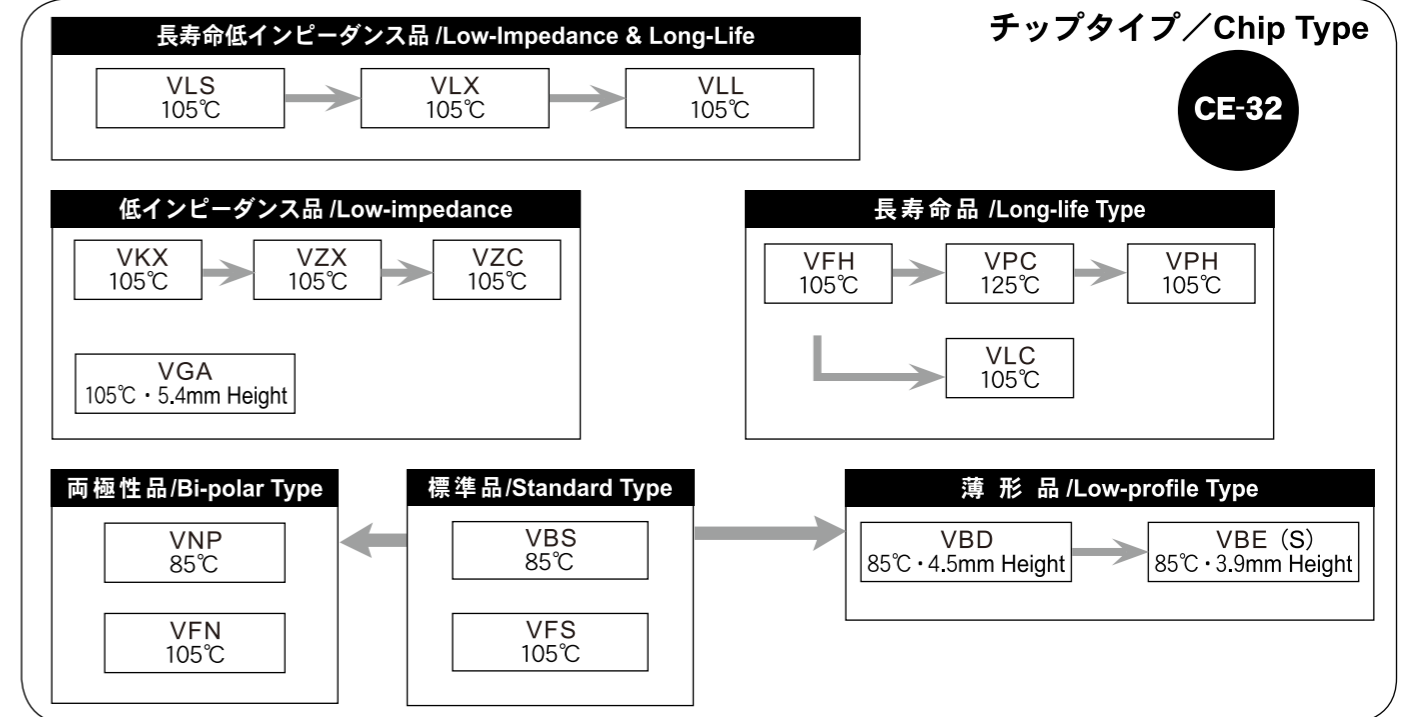
■導電性高分子アルミ固体電解コンデンサ / Conductive Polymer Aluminum Solid Electrolytic Capacitors

分類 Classification	シリーズ名 Type	概要 Application	カテゴリ温度範囲 Category temp. range (°C)	定格電圧範囲 Rated voltage (V. DC)	静電容量範囲 Capacitance (μF)	外装色 Sleeve color	印字色 Print color	掲載頁 Page
CE-32	OMA	低ESR品 low E.S.R.	-55~105	2.5~25	3.3~1500	—	赤 Red	94
	OMB	超低ESR Ultra low E.S.R.	-55~105	2.5~16	100~1000	—	赤 Red	97
	OMR	125°C高温, 高可靠品 125°C High Temperature, High Reliability	-55~125	16~50	5.6~390	—	赤 Red	99
	OMS	長寿命品 Long Life Assurance	-55~105	4~50	22~560	—	赤 Red	102
	OMX	超長寿命品 Ultra Long Life Assurance	-55~105	4~16	22~560	—	赤 Red	104
	OMV	高圧長寿命品 High Voltage, Long Life Assurance	-55~105	16~125	5.6~580	—	赤 Red	106
CE-04	OPA	標準低抵抗品 Standard, Low ESR	-55~105	2.5~25	6.8~1500	—	赤 Red	108
	OPB	大容量, 極低抵抗品 High Capacitance, Ultra-low ESR	-55~105	2.5~16	270~2200	—	赤 Red	111
	OPR	125°C高温, 高可靠品 125°C High Temperature, High Reliability	-55~125	16~50	22~100	—	赤 Red	114
	OPS	長寿命品 Long Life Assurance	-55~105	2.5~16	100~1500	—	赤 Red	116
	OPX	超長寿命品 Ultra Long Life Assurance	-55~105	4~16	6.8~2200	—	赤 Red	118
	OPV	高圧長寿命品 High Voltage, Long Life Assurance	-55~105	16~100	6.8~470	—	赤 Red	120

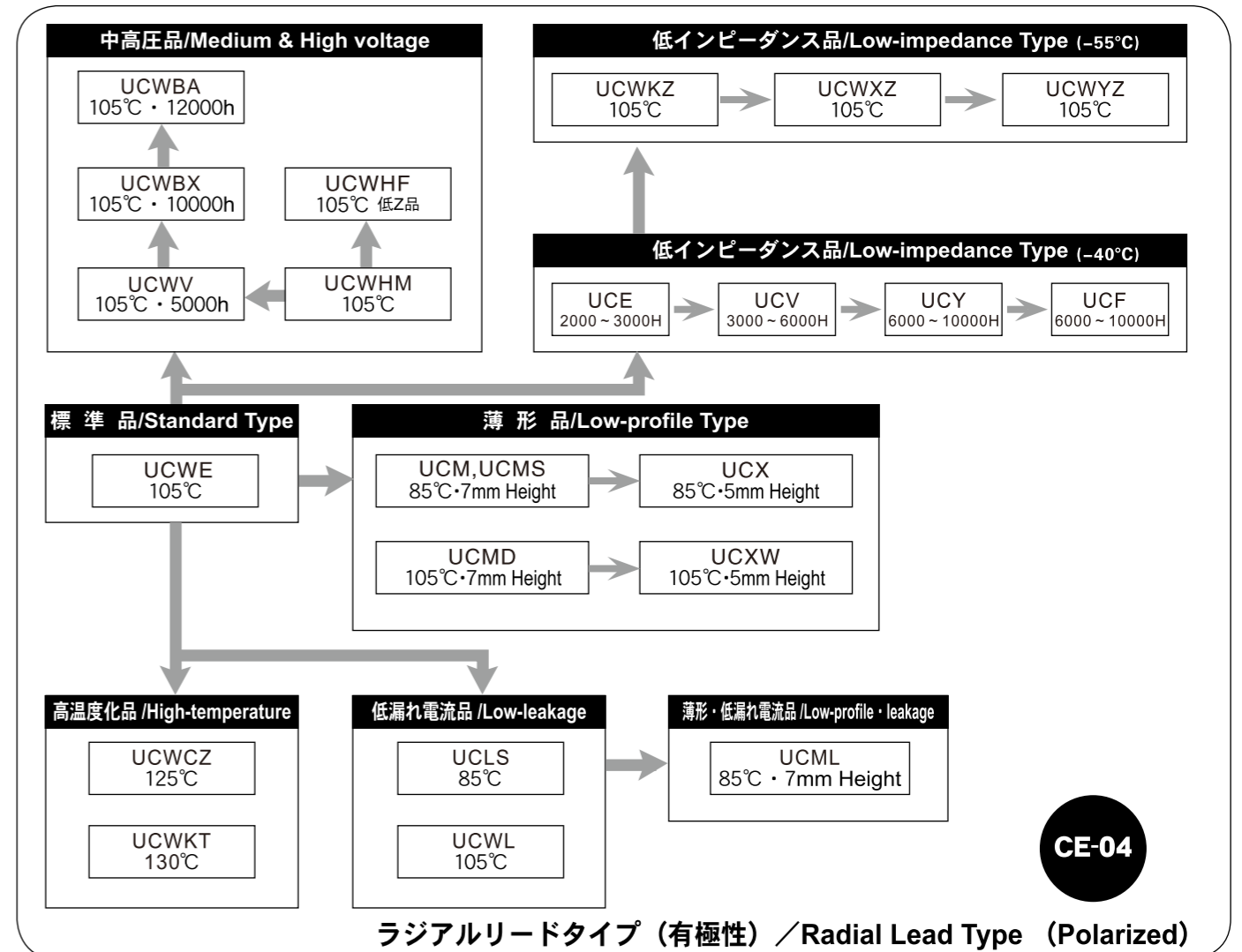
・ここに記載していないカスタム製品も製造いたしますので、御用命下さい。  
Produce custom products too, which are not found in these tables.  
・掲載頁※印の製品はホームページを御覧下さい。  
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●製品体系図 / PRODUCTS CHART

■チップ形アルミニウム電解コンデンサ / Chip Aluminum Electrolytic Capacitors



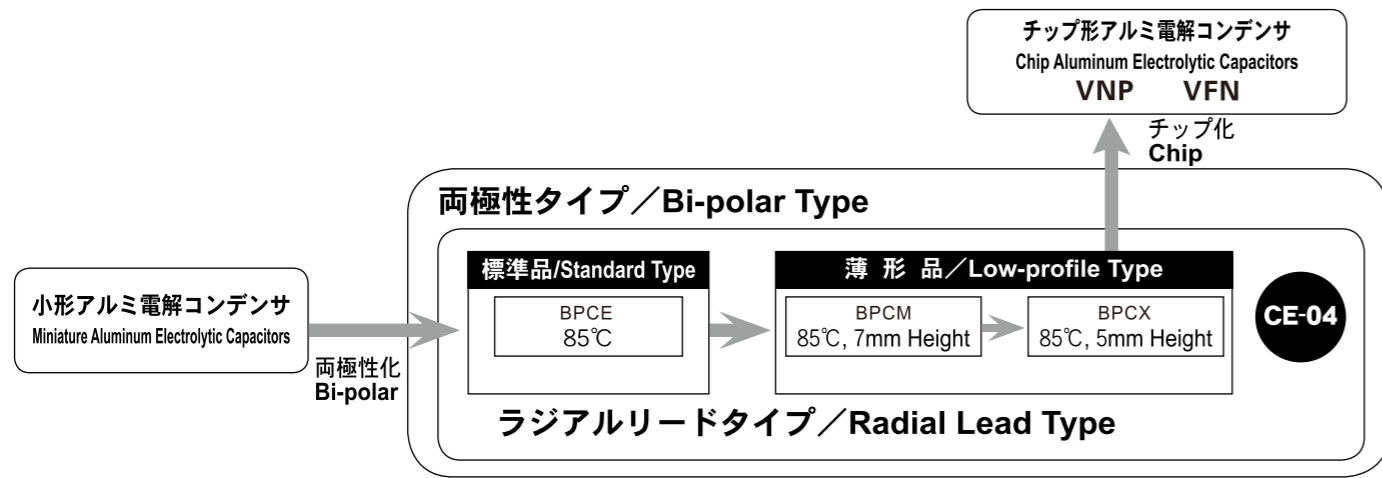
■小形アルミニウム電解コンデンサ(1) / Miniature Aluminum Electrolytic Capacitors (1)



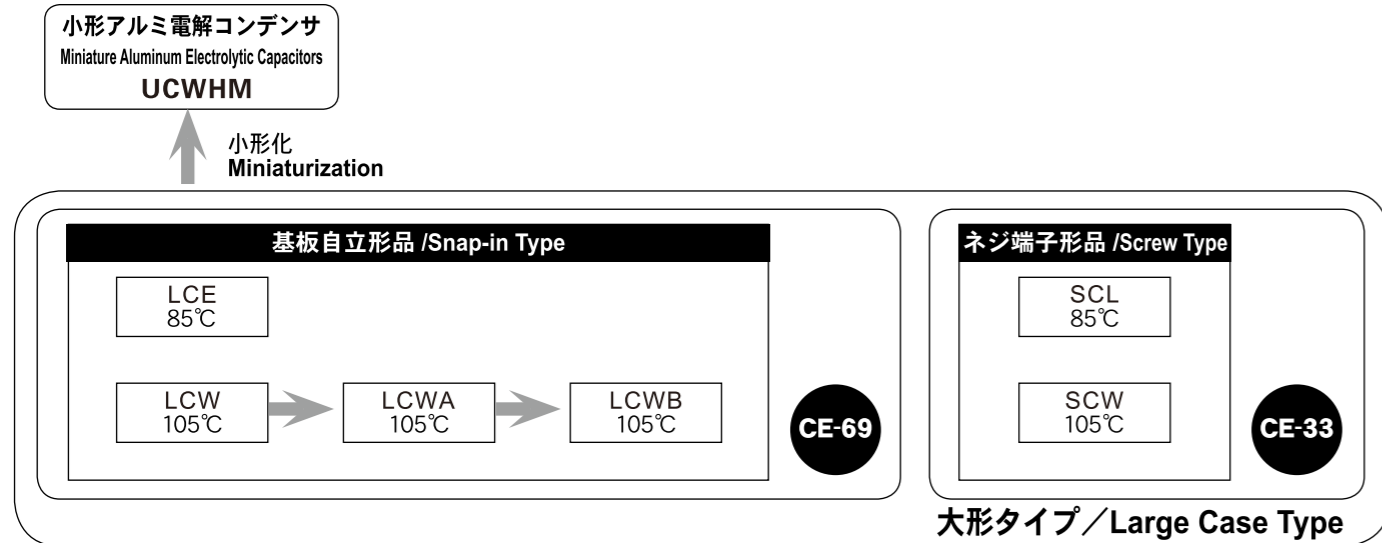


●製品体系図/PRODUCTS CHART

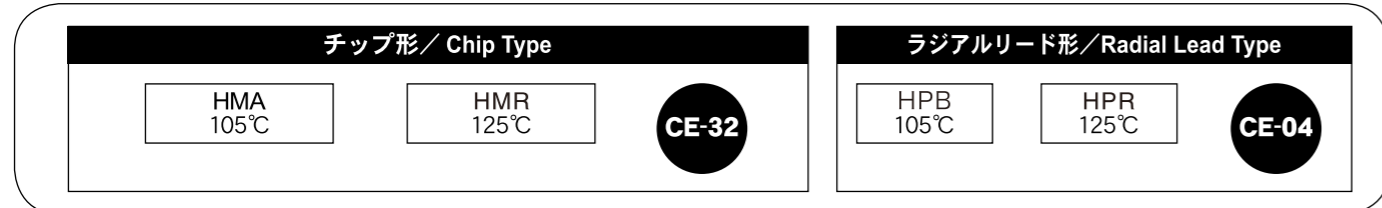
■小形アルミニウム電解コンデンサ(2) / Miniature Aluminum Electrolytic Capacitors (2)



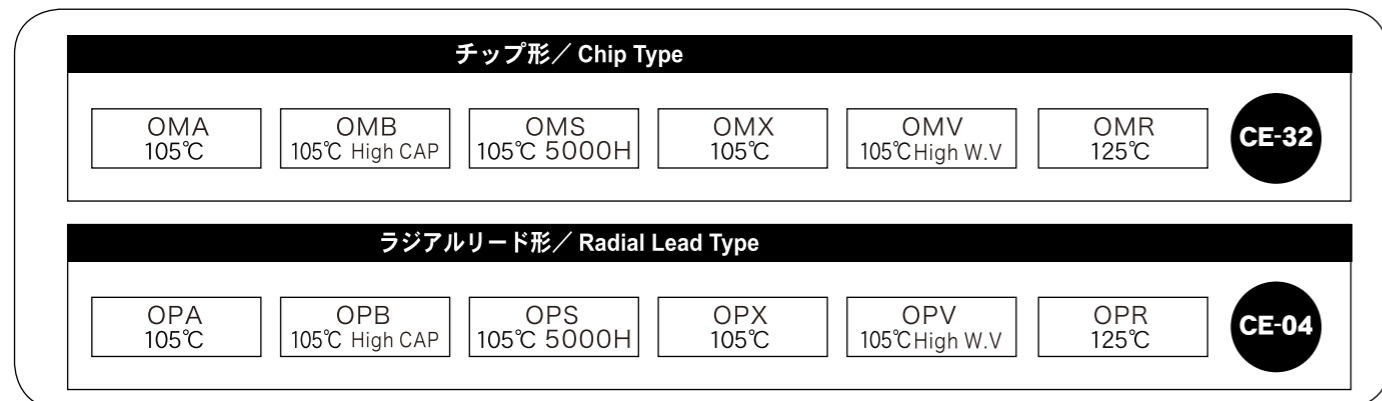
■大形アルミニウム電解コンデンサ / Large Case Type Aluminum Electrolytic Capacitors



■導電性高分子ハイブリッドアルミ電解コンデンサ / Hybrid Conductive Polymer Aluminum Electrolytic Capacitors



■導電性高分子アルミ固体電解コンデンサ / Conductive Polymer Aluminum Solid Electrolytic Capacitors



●品番標準呼称法 (ご指定法) / METHOD OF BASIC DENOMINATING ITEM NUMBER (HOW TO BASIC SPECIFY ITEM NUMBER)

例/Example 16W.V UCWXZシリーズ 5mmピッチテーピング 5mm-Pitch taping product. 470μF ±20%

**1C** 定格電圧 Rated Voltage  
 定格電圧はJIS記号で記入する。 Write JIS Code Voltage.  
 例/Example  

電圧 Voltage	記号 Symbol
4	0G
6.3	0J
10	1A
16	1C
25	1E
35	1V
40	1G
50	1H
63	1J
80	1K
100	2A
160	2C
180	2P
200	2D
250	2E
315	2F
350	2V
400	2G
420	2Q
450	2W
500	2H

**UCWXZ** シリーズ名 Series Name  
 カタログのシリーズ名を記入する。 Write a series name of catalog.  
 例/Example  

UCWXZ
UCWYZ
UCWBX
UCE
UCX
UCM

**TF** 形状記号 Style Symbol  
 テーピング及びリード加工の形状記号を記入する。テーピング加工及びリード加工の無い製品の場合は記入しない。チップタイプ品の場合も記入しない。  
 Write style symbol of taping & leads process. In the case of product without taping & leads process, do not write it. Do not write it in the case of chip type product.  
 例/Example  

TF
TS
FB

**471** 静電容量記号 Capacitance Symbol  
 静電容量の記号を記入する。(単位はμF、小数点はRとする) Write the capacitance symbol (Unit is μF, and R represents decimal point.)  
 例/Example  

静電容量 Cap. μF	記号 Symbol
0.1	0R1
0.22	R22
0.33	R33
0.47	R47
1.0	010
10	100
47	470
100	101
470	471
1000	102
4700	472
10000	103
47000	473

**M** 容量許容差 Capacitance tolerance  
 例/Example  
 ±10%=K  
 ±20%=M

**F** 外形コード Shape Code  
 例/Example  

外形 Shape	記号 Symbol
平ゴム Flat rubber type	F
段付きゴム Stepped rubber	N/J

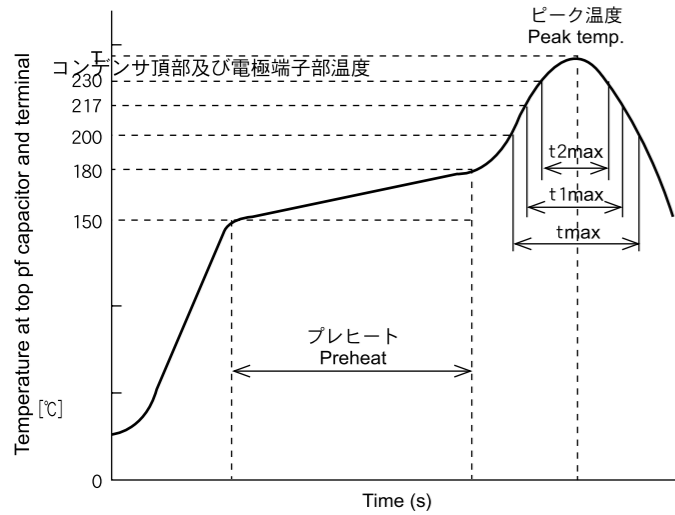
**080200** 寸法コード Size Code  
 ① ② ③ ④ ⑤ ⑥  
 例/Example  

寸法 Size	記号 Symbol
8X20	080200
12.5X20	125200
18X40	180400

●チップ形(CE-32)リフロー許容条件/CHIP (CE-32) TYPE PERMISSIBLE REFLOW CONDITION

[プロファイル 1/Profile 1]

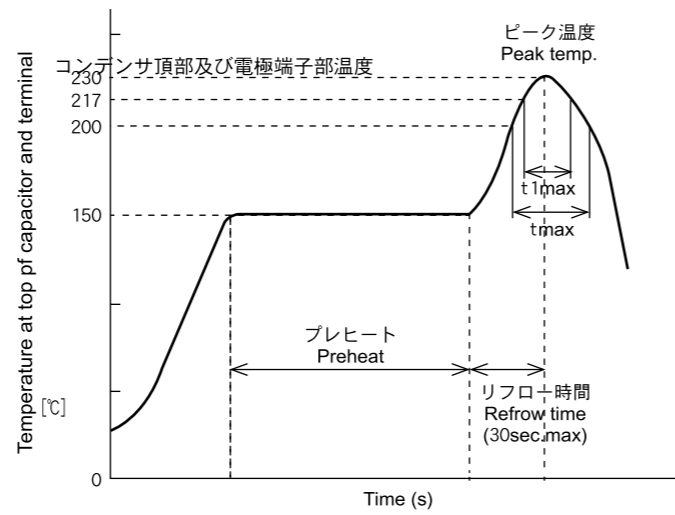
エアリフロー法及び赤外線リフロー法  
AIR reflow and IR reflow



プレヒートは150~180°C以下で120秒以内  
Preheat: 150°C to 180°C, Within 120sec.

[プロファイル 2/Profile 2]

エアリフロー法及び赤外線リフロー法  
AIR reflow and IR reflow



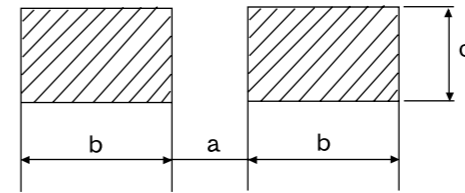
プレヒートは150°C以下で120秒以内  
Preheat: 150°C, Within 120sec.

シリーズ名 Series	電圧範囲 Voltage (V)	対象サイズ Size	200°C以上での 滞留時間 (t) Time for more than 200°C (t)	217°C以上での 滞留時間 (t1) Time for more than 217°C (t1)	230°C以上での 滞留時間 (t2) Time for more than 230°C (t2)	ピーク温度 (5秒以内) Peak temperature (Within 5sec)	プロファイル Profile	
VLL VBSS VBS VFS VFH VGA VKX VNP VFN VLH	4~63	φ4~φ6.3	Within 70sec.	Within 60sec.	Within 40sec.	250°C	1	
		φ8	Within 60sec.	Within 50sec.	Within 30sec.	245°C	1	
		φ10, φ12.5	Within 50sec.	Within 40sec.	Within 20sec.	240°C	1	
		φ16, φ18	Within 50sec.	Within 30sec.	Within 15sec.	235°C	1	
	80~100	φ4~φ6.3	Within 60sec.	Within 50sec.	Within 40sec.	250°C	1	
		φ8	Within 60sec.	Within 40sec.	Within 30sec.	240°C	1	
		φ10	Within 50sec.	Within 30sec.	Within 20sec.	240°C	1	
		φ12.5	Within 50sec.	Within 30sec.	Within 20sec.	235°C	1	
		φ16, φ18	Within 45sec.	Within 20sec.	Within 10sec.	235°C	1	
		φ8, φ10	Within 50sec.	Within 30sec.	Within 20sec.	240°C	1	
VLX VLS VPC VPH VZX VZC	6.3~50	φ4~φ8	Within 80sec.	Within 70sec.	Within 40sec.	260°C	1	
		φ10×10.2, 13.5	Within 70sec.	Within 60sec.	Within 40sec.	250°C	1	
		φ12.5	Within 60sec.	Within 50sec.	Within 30sec.	245°C	1	
		φ10×7.7, φ16, φ18	Within 50sec.	Within 40sec.	Within 20sec.	240°C	1	
	63	φ8	Within 60sec.	Within 50sec.	Within 30sec.	245°C	1	
		φ10, φ12.5	Within 50sec.	Within 40sec.	Within 20sec.	240°C	1	
		φ16, φ18	Within 50sec.	Within 40sec.	Within 15sec.	235°C	1	
		80~100	φ8	Within 60sec.	Within 50sec.	Within 30sec.	240°C	1
			φ10	Within 50sec.	Within 40sec.	Within 20sec.	240°C	1
			φ12.5	Within 50sec.	Within 40sec.	Within 20sec.	235°C	1
φ16, φ18	Within 45sec.		Within 30sec.	Within 10sec.	235°C	1		
VBD	ALL	ALL	Within 60sec.	Within 50sec.	Within 30sec.	245°C	1	
VBE(S)	ALL	ALL	Within 50sec.	Within 40sec.	Within 20sec.	240°C	1	

上記の条件で2回リフローを行うことは可としますが、2回目を行う場合は1時間以上自然冷却し、基板及び部品が常温に復帰後行って下さい。  
Capacitors can withstand two reflow processes on the above conditions. Second reflow shall be taken after more than one hour natural cooling time and taken the return to normal temperatures of PCB board and components.

●チップ形(CE-32)推奨ランド寸法/CHIP (CE-32) TYPE RECOMMENDED LAND PATTERN

ランドパターン  
LAND PATTERN



Unit: mm

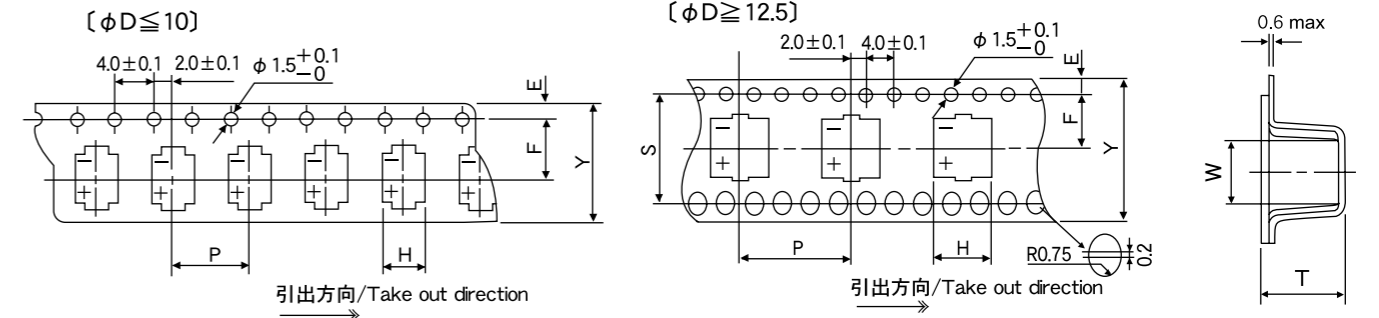
φD	a	b	c
φ4	1.0	2.6	1.8
φ5	1.4	3.0	1.8
φ6.3	2.1	3.6	1.8
φ8	2.8	4.1	2.1
φ10	4.3	4.4	2.5
φ12.5	4.3	5.8	2.5
φ16	6.6	6.5	5.0
φ18	6.6	7.7	5.0

※大形品については基板のパターン剥れ防止(耐振性)のため、できるだけ推奨ランド寸法よりパターン面積を大きく設けるよう推奨致します。

※When using large chip capacitor, please design possibly larger land pattern area than the recommended pattern dimension in order to increase vibration resistance and avoid to falling off a circuit board.

●チップ形(CE-32)テーピング仕様/CHIP (CE-32) TYPE TAPING

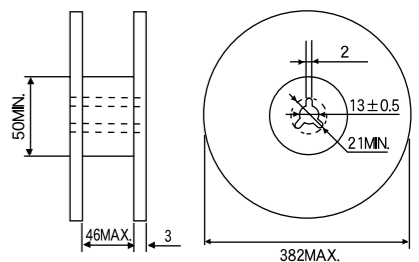
■キャリアテープ/CARRIER TAPE



Unit: mm

D × L	Y±0.3	H±0.2	W±0.2	P±0.1	E±0.1	F±0.1	T±0.2	S±0.1
φ4×4.5	12.0	4.7	4.7	8.0	1.75	5.5	5.0	—
φ4×5.4	12.0	4.7	4.7	8.0	1.75	5.5	5.8	—
φ4×6.0	12.0	4.7	4.7	8.0	1.75	5.5	6.4	—
φ5×3.9	12.0	5.7	5.7	12.0	1.75	5.5	4.5	—
φ5×4.5	12.0	5.7	5.7	12.0	1.75	5.5	5.0	—
φ5×5.4	12.0	5.7	5.7	12.0	1.75	5.5	5.8	—
φ5×6.0	12.0	5.7	5.7	12.0	1.75	5.5	6.4	—
φ5×7.0	12.0	5.7	5.7	12.0	1.75	5.5	7.1	—
φ6.3×3.25	16.0	7.0	7.0	12.0	1.75	7.5	3.8	—
φ6.3×3.9	16.0	7.0	7.0	12.0	1.75	7.5	4.5	—
φ6.3×4.5	16.0	7.0	7.0	12.0	1.75	7.5	5.1	—
φ6.3×5.4	16.0	7.0	7.0	12.0	1.75	7.5	5.8	—
φ6.3×6.0	16.0	7.0	7.0	12.0	1.75	7.5	6.5	—
φ6.3×7.0	16.0	7.0	7.0	12.0	1.75	7.5	7.5	—
φ6.3×7.7	16.0	7.0	7.0	12.0	1.75	7.5	8.2	—
φ6.3×8.4	16.0	7.0	7.0	12.0	1.75	7.5	9.2	—
φ8×10.2 (10.5)	24.0	8.7	8.7	16.0	1.75	11.5	11.1	—
φ10×7.7	24.0	10.7	10.7	16.0	1.75	11.5	8.3	—
φ10×10.2 (10.5)	24.0	10.7	10.7	16.0	1.75	11.5	11.2	—
φ10×12.5	24.0	10.7	10.7	16.0	1.75	11.5	13.3	—
φ10×13.5	24.0	10.7	10.7	16.0	1.75	11.5	14.5	—
φ12.5×13.5	32.0	13.2	13.2	24.0	1.75	14.2	14.3	28.4
φ16×16.5	44.0	17.5	17.5	28.0	1.75	20.2	17.3	40.4
φ18×16.5	44.0	19.5	19.5	32.0	1.75	20.2	17.8	40.4
φ18×21.5	44.0	19.5	19.5	32.0	1.80	20.2	22.5	40.4

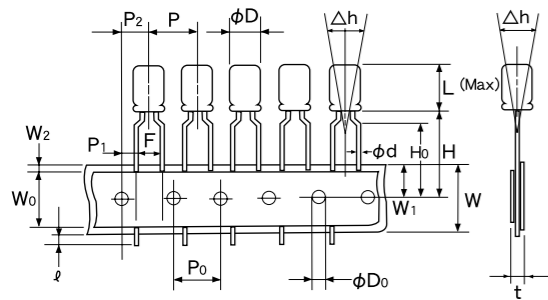
■リール  
REEL





●ラジアルリード形(CE-04)自動挿入用テーピング仕様 / RADIAL LEAD (CE-04) TYPE TAPING FOR AUTOMATIC INSERTION

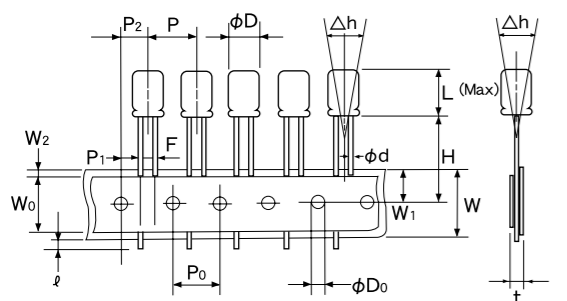
■ 5 mm ピッチテーピング 記号: T F  
5 mm-pitch taping Symbol



Unit : mm

Sign	φD	φ5	φ6.3	φ8	φ4, φ5, φ6.3, φ8
φd		0.5±0.05	0.6±0.05	0.45±0.05	0.45±0.05
L		12.0	12.5	8.0	6.0
P			12.7±1.0		
P <sub>0</sub>			12.7±0.2		
P <sub>1</sub>			3.85±0.5		
P <sub>2</sub>			6.35±1.0		
F			5.0±0.8		
W			18.0±0.5		
W <sub>0</sub>			6.0 Min.		
W <sub>1</sub>			9.0±0.5		
W <sub>2</sub>			1.5 Max.		
H		18.5±0.75	20.0±0.75	17.5±0.75	
H <sub>0</sub>			16.0±0.5		
ℓ			2.0 Max.		
φD <sub>0</sub>			4.0±0.2		
Δh			0±1.0		
t			0.7±0.2		

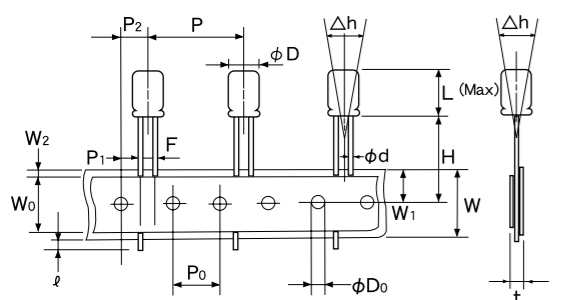
■ リードストレートテーピング 記号: T S  
Leads straight taping Symbol



Unit : mm

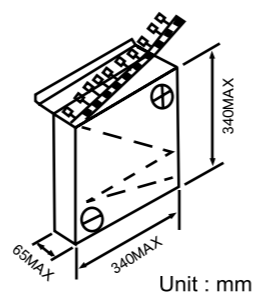
Sign	φD	φ5	φ6.3	φ8	φ10	φ12.5	φ4, φ5, φ6.3	φ8
φd		0.5±0.05			0.6±0.05		0.45±0.05	
L		12.0		12.5	22.0	27.0	6.0	8.0
P			12.7±1.0			15±1.0		12.7±1.0
P <sub>0</sub>			12.7±0.2			15±0.2		12.7±0.2
P <sub>1</sub>		5.2±0.5	4.6	3.85±0.5	5±0.5	5.2±0.5	4.6	4.6
P <sub>2</sub>			6.35±1.0		7.5±1.0	6.35±1.0		
F		2.5±0.5	3.5		5.0±0.8	2.5±0.5	3.5	
W					18.0±0.5			
W <sub>0</sub>					6.0 Min.			
W <sub>1</sub>					9.0±0.5			
W <sub>2</sub>					1.5 Max.			
H		17.5±0.75		18.5±0.75		17.5±0.75		
ℓ					2.0 Max.			
φD <sub>0</sub>					4.0±0.2			
Δh					0±1.0			
t					0.7±0.2			

記号: T W φ12.5に適用 / Applies to φ12.5  
Symbol



Sign	φD	φ12.5
φd		0.6±0.05
L		27.0
P		25.4±1.0
P <sub>0</sub>		12.7±0.2
P <sub>1</sub>		3.8±0.5
P <sub>2</sub>		6.35±1.0
F		5.0±0.8
W		18.0±0.5
W <sub>0</sub>		6.0 Min.
W <sub>1</sub>		9.0±0.5
W <sub>2</sub>		1.5 Max.
H		18.5±0.75
ℓ		2.0 Max.
φD <sub>0</sub>		4.0±0.2
Δh		0±1.0
t		0.7±0.2

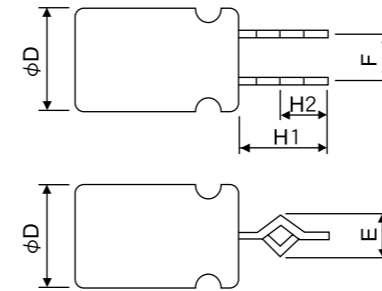
■ 包装方法 (つづら折)  
PACKING WAY (AMMO PACK)



●ラジアルリード形(CE-04) リード加工仕様 /  
RADIAL LEAD (CE-04) TYPE LEADS PROCESS

■ リードフォーミング / LEADS FORMING

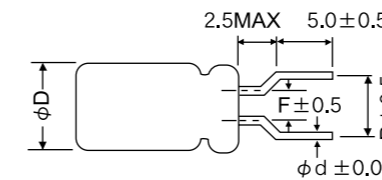
記号/Symbol : F A (スナップイン / Snap-in)



Unit : mm

φD	10	12.5	16	18
H 1 ±0.5	4.5	4.5	4.5	4.5
H 2 ±0.5	2.8	2.8	2.8	2.8
F ±0.5	5.0	5.0	7.5	7.5
E ±0.5	2.0	2.0	2.0	2.0

記号/Symbol : F B (フォーミングカット / Forming cut)

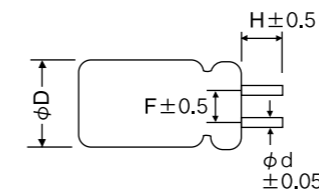


Unit : mm

φD	4	5	6.3	8
L	5	7	5, 7	11.0
φd	0.45	0.45	0.5	0.45
F	1.5	2.0	2.5	2.5
P	5.0	5.0	5.0	5.0

■ リードカット / LEADS CUTTING

記号/Symbol : FC, GC, HC

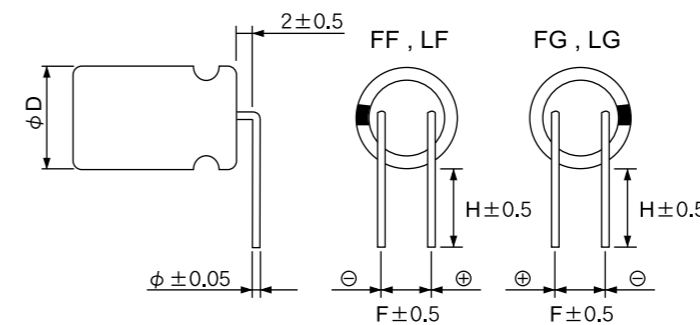


Unit : mm

記号/Symbol	H	φD	5	6.3	8	10	12.5	16	18	22
FC	5.0	L	11.0	11.0	11.5	10	12.5	16	18	22
GC	4.0	φd	0.5	0.5	0.6	0.6			0.8	
HC	3.5	F	2.0	2.5	3.5	5.0		7.5	10	

■ L形フォーミング / L SHAPE FORMING

記号/Symbol : FF, FG, LF, LG



Unit : mm

記号/Symbol	H	φD	10	12.5	16	18
FF	4.0	F	5.0	5.0	7.5	7.5
FG						
LF	3.5	φd	0.6	0.6	0.8	0.8
LG						

※その他の加工については、別途お問い合わせ下さい。Please make inquiries specially about other leads forming type.

●アルミニウム電解コンデンサ使用上の注意事項/APPLICATION GUIDELINES

1. 回路設計上

- (1) 使用環境及び取付環境を確認の上、カタログ又は納入仕様書に規定したコンデンサの定格性能の範囲内として下さい。
- (2) 高温度（カテゴリ上限温度を超えた温度）で使用しないで下さい。  
カテゴリ上限温度を超えて使用した場合、コンデンサの寿命が著しく短くなったり、防爆弁作動などの破損に至ります。
- (3) 過電流（定格リップル電流を超える電流）を流さないで下さい。  
過大なリップル電流を流した場合、内部発熱が大きくなり、寿命を短くしたり、防爆弁作動などの破損に至ります。定格リップル電流は、リップル周波数が条件付けられています。規定以外の周波数で使用する場合は、各シリーズ毎に規定している周波数補正係数を乗じた値以下でご使用下さい。
- (4) 回路設計するとき、機器の寿命に合ったコンデンサを選定して下さい。
- (5) コンデンサは、有極性です。逆電圧又は交流電圧は、印加しないで下さい。  
極性が反転する回路には、両極性コンデンサをお選び下さい。ただし、両極性コンデンサも交流回路には使用できません。
- (6) コンデンサは、急激な充放電が繰り返される回路に使用しないで下さい。  
急激な充放電が繰り返される回路に使用されるコンデンサについては、ご相談下さい。
- (7) コンデンサに、過電圧（定格電圧を超えた電圧）を印加しないで下さい。  
直流電圧と重畳されたリップル電圧の尖頭値を定格電圧以下として下さい。定格電圧を超えるサージ電圧の規定がありますが、条件が限定されており、長時間の使用を保証したものではありません。
- (8) コンデンサは次の間で、回路的に完全に隔離して下さい。  
①ケースと陰極端子及び陽極端子並びに回路パターン間。  
②自立形のブラック端子と他の陽極及び陰極並びに回路パターン間。
- (9) コンデンサの外装スリーブは、絶縁が保証されていません。絶縁機能が必要な箇所には使用しないで下さい。  
スリーブに絶縁機能が必要な場合は、ご相談下さい。

■ 1. Circuit Design

- (1) Ensure that operational and mounting conditions follow the specified conditions detailed in the catalog and specification sheets.
- (2) Category temperature must be within our specification. If category temperature exceed the maximum guaranteed limit, rapid electrical parameter deterioration will occur, and irreversible damage will result.
- (3) Do not apply excessive current which exceeds the rated ripple current.  
The excessive ripple current will shorten the lifetime of capacitors and damage the capacitors by generating heat, venting, etc.  
The maximum rated ripple current has been specified at a certain ripple frequency.  
If the capacitors are operated at the other frequencies, the maximum rated ripple current must be multiplied by frequency multipliers prescribed for each product series.
- (4) Select the capacitors to meet the service life of a device.
- (5) Aluminum electrolytic capacitors are polarized. Do not apply reverse voltage or AC voltage. Please use bi-polarized capacitors for a circuit that can possibly see reversed polarity.  
Note : Even bi-polarized capacitors can not be used for AC voltage application.
- (6) Do not use aluminum electrolytic capacitors in a circuit that requires rapid and very frequent charge / discharge. In this type of circuit, it is necessary to use a special design capacitor with extended life characteristics.
- (7) Do not apply an over-voltage exceeding the full rated voltage of the capacitor. When AC voltage is superimposed to DC voltage, the peak value of the DC voltage and peak AC voltage ) ripple current) must not exceed the full rated voltage.  
A surge voltage value, which exceeds the full rated voltage, is prescribed in the catalogs, but it only applies to the limited conditions and for short periods of time.
- (8) Electrically isolate the following sections of a capacitor when designing the device circuits.
  - ① The outer can case of a non-solid aluminum capacitor from the negative terminal, positive terminal and circuit traces.
  - ② The dummy terminal) s) of a non-solid aluminum capacitor, which may be especially designed for mounting stability, from the positive terminal, negative terminal and circuit traces.
- (9) The outer sleeve of a capacitor has not been assured as an insulation-functioning part. For a place that requires the outer sleeves functioning as insulation, a special type of capacitors should be designed.

- (10) コンデンサは、次の環境では使用しないで下さい。
  - ①直接水、塩水及び油がかかったり、または結露状態となる環境。
  - ②有害ガス（硫化水素、亜硫酸、亜硝酸、塩素、アンモニアなど）が充満する環境。
  - ③オゾン、紫外線及び放射線が照射される環境。
  - ④振動または衝撃条件がカタログまたは納入仕様書の規定範囲を超える過激な環境。
- (11) コンデンサをプリント基板に取付けるとき、事前に次の内容を確認の上、設計して下さい。
  - ①コンデンサの端子間隔にプリント配線板の穴間隔を合わせて下さい。
  - ②コンデンサの防爆弁部の上に、配線や回路パターンがこないようにして下さい。
  - ③コンデンサの防爆弁部の上には、納入仕様書に規定のない限り次の空間を設けて下さい。

製品直径	間 隔
φ8 (6.3)～φ16	2mm 以上
φ18～φ35	3mm 以上
φ40～	5mm 以上

  - ④プリント配線板側にコンデンサの防爆弁部が付く場合は、防爆弁の位置に合わせて、防爆弁作動時のガス抜き穴を開けて下さい。
  - ⑤コンデンサの封口部の下には、回路パターンを配線しないで下さい。  
万が一電解液が漏れたとき、回路パターンを短絡させる恐れがあります。
  - ⑥コンデンサの周辺及びプリント配線板の裏面（コンデンサの下）への発熱部品の配置は避けて下さい。
  - ⑦両面のプリント配線板にコンデンサを取付けるとき、コンデンサの下に余分な基板穴及び表裏接続用貫通穴がこないように設計して下さい。
  - ⑧ネジ端子形コンデンサ（CE-33）の封口部は、下向きにしないで下さい。  
また、横に寝かせる場合には、陽極端子を上にして下さい。
  - ⑨ネジ端子形（CE-33）の締めつけトルクは、カタログまたは納入仕様書で規定された範囲内として下さい。
- (12) チップコンデンサ（CE-32）用プリント配線板のランドパターンは、カタログまたは納入仕様書の規定によって回路設計して下さい。
- (13) 温度及び周波数の変動によってコンデンサの電気的特性が変化します。この変化分を確認の上、回路設計して下さい。
- (14) コンデンサを2個以上並列に接続するとき、電流バランスを考慮した回路設計をして下さい。
- (15) コンデンサを2個以上直列に接続するとき、電圧バランスを考慮してコンデンサと並列に分圧抵抗器を挿入して下さい。

- (10) Do not expose capacitors to the following environment.
  - ① Water, salt water or oil spatters, or dewy places.
  - ② Toxic gases ) hydrogen sulfide, sulfurous acid, nitrous acid, chlorine, ammonium, etc.) fills into.
  - ③ Ozone, ultraviolet rays or radiation is applied to.
  - ④ Severe vibration or mechanical shock conditions that exceed the limits prescribed in the catalogs or product specification.
- (11) When designing a circuit board, please pay attention to following :
  - ① Make the hole spacing on the P.C. board match the lead space of the capacitor.
  - ② There should not be any circuit pattern or circuit wire above the capacitor safety vent.
  - ③ Unless otherwise specified, following clearance should be made above the safety vent.

Case Diameter	Gap Required
φ8 (6.3)～φ16	2mm or more
φ18～φ35	3mm or more
φ40～	5mm or more

- ④ In case the vent side is placed toward P.C. board (such as end seal vented parts) , make a corresponding hole on the P.C. board to release the gas when vent is operated.
- ⑤ The main chemical solution of the electrolyte and the separator paper used in the capacitors are combustible. The electrolyte is conductive. When it comes in contact with the P.C. board, there is a possibility of pattern corrosion or short circuit between the circuit pattern which could in result smoking or catching fire.  
Do not Locate any circuit pattern beneath the capacitor end seal.
- ⑥ Do not design a circuit board so that heat generating components such as resistor and transistors are placed near an aluminum capacitor or reverse side of P.C. board ) under the capacitor) .
- ⑦ When you are designing capacitors for use on double-sides P.C. boards, avoid circuit patterns or through holes ) such to connect both sides) , that are placed under the capacitor.
- ⑧ The sealing side of the screw terminal type ) CE-33) should not face down in the application.  
When the capacitors are mounted horizontally, the positive terminals must be positioned at the upper side.
- ⑨ Torque of tightening screw terminals ) CE-33) should not exceed the specified maximum value which is described in the catalog or specification sheets.
- (12) Please refer to the pad size layout recommendations in our catalog when designing in surface mount capacitors. ) CE-32)
- (13) The electrical characteristics of capacitors vary with respect to temperature, frequency and service life. Design the device circuits by taking these changes into account.
- (14) If using more than one capacitor to connect in parallel, design the circuits so that the currents can equally flow into the individual capacitors.
- (15) If using more than one capacitor to connect in series, connect resistors in parallel with the individual capacitors for balancing the voltage.



## 2. 取り付け時

- (1) セットに組み込んで通電したコンデンサは、再使用しないで下さい。定期点検時の電気的性能を測定するために取り外したコンデンサ以外は、再使用できません。
- (2) コンデンサは、再起電圧が発生する場合があります。このとき、約1kΩの抵抗器を通して放電して下さい。
- (3) 長期保管のコンデンサは、漏れ電流が増大している場合があります。このときは、約1kΩの抵抗器を通して電圧処理をして下さい。
- (4) コンデンサの定格（静電容量及び定格電圧）を確認してから、取り付けして下さい。
- (5) コンデンサの極性を確認してから、取り付けして下さい。
  - ① 本体側面に、帯または矢印で陰極側端子を示しています。
  - ② リード同一方向形 (CE-04) は、リード端子の短い方が陰極です。
  - ③ 基板自立形 (CE-69) は、リベットに[⊗]の刻印がある方が陰極です。
  - ④ チップ形 (CE-32) は、[◐] 状の捺印がある方が陰極です。
- (6) コンデンサは、床などに落下させないで下さい。このとき落下したコンデンサは、使用しないで下さい。
- (7) コンデンサを変形させて取り付けないで下さい。
- (8) コンデンサの端子間隔とプリント配線板穴間隔とが合っていることを確認してから取り付けして下さい。
- (9) 基板自立形 (CE-69) は、その基板に密着する（浮いた状態にしない）まで押し込んで取り付けして下さい。
- (10) カタログ又は納入仕様書に規定の機械強度を超える力をコンデンサに加えないで下さい。自動挿入機による吸着、装着及び位置合わせ時又は端子カット時にストレスが加わる場合がありますので、その衝撃力に注意して下さい。
- (11) はんだごてによるはんだ付け：
  - ① はんだ付け条件（温度、時間）は、カタログ又は納入仕様書に規定の範囲内として下さい。

## ■ 2. Mounting

- (1) The used capacitors are not reusable, except the case that they are taken from a device for periodic inspection to measure their electrical characteristics and then returned to the device.
- (2) Capacitors may have been re-charged by a recovery voltage phenomenon. Although discharged at a final manufacturing process, the capacitors are somewhat re-charged spontaneously by a recovery voltage phenomenon, which is caused by a slowly polarizing dielectric, with time. If these capacitors bring an electric shock or damages any sensitive circuit at assembly processes, discharge the electricity of the capacitors through a resistor of approximately 1kΩ before use.
- (3) Leakage current of the capacitors, that have been stored for a long time, may increase. When leakage current has increased, please perform a voltage treatment using 1kΩ resistor.
- (4) Make sure of the rated capacitances and voltages of the capacitors when installing.
- (5) Make sure of the polarity of the capacitors when installing.
  - ① Negative polarity is indicated on the side of body by means of a stripe or an arrow.
  - ② On Radial leaded type capacitors (CE-04), the shorter lead is the negative polarity.
  - ③ On Snap-In (CE-69) terminal type capacitors, the knurled rivet [⊗] indicates the negative polarity.
  - ④ On Surface mounting type capacitors (CE-32), the mark [◐] indicates the direction of negative polarity.
- (6) Do not drop capacitors on the floor, nor use a capacitor that was dropped.
- (7) Do not deform the can cases of capacitors.
- (8) Please confirm that the lead spacing of the capacitor matches the hole spacing of the P.C. board prior to installation.
- (9) Snap-in type capacitor (CE-69) should be installed tightly to the P.C. board (allow no gap between the P.C. board and bottom of the capacitor).
- (10) Do not apply any mechanical force more than the limits prescribed in the catalogs or product specifications to capacitors. Also, note the capacitors may be damaged by mechanical shocks caused by the vacuum/insertion head, component checker or centering operation of an automatic mounting or insertion machine.
- (11) Hand soldering :
  - ① Soldering conditions (temperature and time) should be within the limits prescribed in the catalogs or product specifications.

- ② 端子間隔とプリント配線板穴間隔が不整合のため、リード線端子を加工する必要がある場合は、はんだ付けをする前に、コンデンサの本体にストレスがかからないように加工して下さい。
- ③ はんだごてによる手直しをするとき、一度はんだ付けをしたコンデンサを取り外す必要がある場合には、コンデンサの端子にストレスがかからないように、はんだが充分溶融してから行って下さい。
- ④ はんだごての先がコンデンサ本体に触れないようにして下さい。

## (12) フローはんだ付け：

- ① コンデンサ本体をはんだの中に浸漬してはんだ付けをしないで下さい。プリント配線板を介在させて、コンデンサのある反対側の裏面のみに、はんだ付けして下さい。
- ② はんだ付け条件（予備加熱、はんだ温度と時間）は、カタログ及び納入仕様書に規定の範囲内として下さい。
- ③ 端子部以外にフラックスが付着しないようにして下さい。
- ④ はんだ付けのとき、他の部品が倒れてコンデンサに接触しないようにして下さい。

## (13) リフローはんだ付け：

- リフローはんだ付けは、SMT 部品 (CE-32) のみ可能です。
- ① はんだ付け条件（予備加熱、はんだ温度と時間）は、カタログ及び納入仕様書に規定の範囲内として下さい。
  - ② 赤外線ヒーターを使用するとき、コンデンサの色や材質、大きさによって、赤外線吸収率が異なるため、加熱の度合いに注意して下さい。
  - ③ コンデンサのリフロー回数は、1回として下さい。ただし、2回リフローを必要とする場合は、必ずご相談下さい。

## (14) プリント配線板にはんだ付け後の取り扱いで次の機械的ストレスをかけないで下さい。

- ① コンデンサ本体を傾けたり、倒したり又はひねったりしないで下さい。
- ② コンデンサを把手がわりにつかんでプリント配線板を移動しないで下さい。
- ③ コンデンサに物をぶつけないで下さい。また、プリント配線板を重ねるとき、コンデンサにプリント配線板又は他の部品が当たらないようにして下さい。

## (15) 基板洗浄：

- ① コンデンサは、ハロゲン系溶剤などでは洗浄できません。ただし、洗浄する必要のある場合は、洗浄を保証したコンデンサを使用し、納入仕様書に規定の範囲内として下さい。

- ② If it is necessary that the leads must be formed due to a mismatch of the lead space to hole space on the board, bend the lead prior to soldering without applying too much stress to the capacitor.
- ③ If you need to remove parts which were soldered, please melt the solder enough so that stress is not applied to lead.
- ④ Please pay attention so that solder iron does not touch any portion of capacitor body.

## (12) Flow soldering (Wave solder) :

- ① Aluminum capacitor body must not be submerged into the solder bath. Aluminum capacitors must be mounted on the "top side" of the P.C. board and only allow the bottom side of the P.C. board to come in contact with the solder.
- ② Soldering condition must be confirmed to be within our specification.
- ③ Please avoid having flux adhere to any portion except the terminal.
- ④ Please avoid contact between other components and the aluminum capacitor.

## (13) Reflow soldering (SMT (CE-32) only) :

- ① Soldering condition must be confirmed to be within our specification.
- ② When an infrared heater is used, please pay attention to the extent of heating since the absorption rate of infrared, will vary due to difference in the color of the capacitor body, material of the sleeve and capacitor size.
- ③ The number of reflow time for SMT aluminum electrolytic capacitors shall be one time. If this type of capacitor has to be inevitably subjected to the reflow twice, please contact our sales office.

## (14) Do not apply any mechanical stress to the capacitor after soldering to the P.C. board.

- ① Do not incline, twist or push the body of the capacitor down after soldering it to the P.C. board.
- ② Do not take the assembly board by the capacitor in lifting or carrying the assembly board.
- ③ Do not bump or strike any object against the capacitor after soldering to the P.C. board. Also, if the assembly boards are piled up, they should be so placed that any of the boards and other components can not touch the capacitor.

## (15) Circuit Board cleaning :

- ① Do not clean capacitors with halogenated cleaning agent. However, if it is necessary to clean with halogenated cleaning agent, use cleaning proof capacitors but within the range specified in the specification.

②推奨洗浄方法

《対象》耐洗浄品  
《洗浄剤》  
パインアルファ ST-100S  
クリンスルー 750H  
イソプロピルアルコール (IPA)

《洗浄条件》

浸漬、超音波などの方法で洗浄時間の合計が5分以内(5L、7L品は3分以内)として下さい。(洗浄液温度は、60℃以下)

洗浄後コンデンサをプリント配線板とともに熱風で10分以上乾燥させて下さい。熱風の温度は、コンデンサのカテゴリ上限温度以下として下さい。

なお、すすぎ後の乾燥が不十分な場合、スリーブの二次収縮、底板の膨らみ等、外観上の不具合を起こす場合がありますのでご注意下さい。

③代替フロン

《対象》耐洗浄品  
《洗浄剤》AK-225AES  
《洗浄条件》

浸漬、蒸気、超音波のいずれかの方法で、洗浄時間の合計が2分または3分以内。(溶剤温度40℃以下)ただし、この代替フロンも地球環境問題の見地から将来禁止の方向であり、当面の暫定対策として、極力避けて下さい。

(16) コンデンサに対して、固定剤・コーティング剤を使用するとき、次の内容を確認して下さい。

- ①ハロゲン系溶剤などを含有する固定剤・コーティング剤は使用しないで下さい。
- ②固定剤・コーティング剤を使用する前に、基板とコンデンサの封口間にフラックス残渣及び汚れが残らないようにして下さい。
- ③固定剤・コーティング剤を使用する前に、洗浄剤などを乾燥させて下さい。また、封口部の全面を塞がないで下さい。
- ④固定剤・コーティング剤の熱硬化条件は、納入仕様書の規定に従って下さい。

3. セット使用中

- (1) コンデンサの端子に直接触れないで下さい。
- (2) コンデンサの端子間を導体でショートさせないで下さい。また、酸およびアルカリ水溶液などの導電性溶液をコンデンサにかけないで下さい。
- (3) コンデンサを取り付けたセットの設置環境を確認して下さい。1-(10)の環境では使用しないで下さい。

② Recommended cleaning method

《Applicable》 Washable product  
《Cleaning agents》 Pine Alpha ST-100S  
Clean Through-750H  
Iso-propyl Alcohol (IPA)

《Cleaning conditions》 Total cleaning time shall be within 5 minutes (5mm and 7mm height : within 3 minutes) by immersion, ultrasonic or other method.

(Temperature of the cleaning agent shall be 60℃ or lower.)

After cleaning capacitors should be dried using hot air for minimum of 10 minutes along with the P.C. board.

Hot air temperature should be below the maximum category temperature of the capacitor. Insufficient dry after water rinse may cause appearance problems. sleeve shrink, bottom-plate bulge and such.

③ CFC substitute

《Applicable》 Washable product  
《Cleaning agents》 AK-225AES  
《Cleaning conditions》 Total cleaning time shall be within 2 or 3 minutes by immersion, ultrasonic or other method.

(Temperature of the cleaning agent shall be 40℃ or lower.)

However, this CFCs substitute solvent should be considered as one of the solvents to be completely regulated in future from the environmental point of view.

(16) Fixing materials and coating materials :

- ① Do not use any ingredients which contain halogen.
- ② Please pay attention to remove flux and any contamination which remains in the gap between the end seal and P.C. board and dry that portion well before coating.
- ③ Please do not apply any material all around the capacitor body but apply it partially.
- ④ Please contact our sales office to make sure whether the curing condition of coating material would cause any problems.

3. In the Equipment

- (1) Do not directly touch terminal by hand.
- (2) Do not short between terminals by conductor, nor spill conductible liquid such as alkaline or acidic solution on or near the capacitor.
- (3) Please make sure that the ambient conditions where the set is installed will be free from spilling water or oil, direct sunlight, ultraviolet rays, radiation, poisonous gases, vibration or mechanical shock.

4. 保守点検

- (1) 産業用機器に使用されているコンデンサについては、定期点検をして下さい。  
点検項目として、次の内容を行って下さい。  
①外観： 開弁、液漏れなどの著しい異常の有無。  
②電気的性能：漏れ電流、静電容量、損失角の正接およびカタログまたは納入仕様書に規定した項目。

5. 万一の場合

- (1) セット使用中、コンデンサが開弁し、ガスが見えたとき、セットのメイン電源を切るか、または電源コードのプラグをコンセントから抜いて下さい。
- (2) コンデンサの防爆弁作動時は、+ 100℃を超える高温ガスが噴出しますので、顔を近づけないで下さい。噴出したガスが目に入ったり、吸い込んだりした場合には、直ちに、水で目を洗ったり、うがいをして下さい。コンデンサの電解液はなめないで下さい。電解液が皮膚に付いたときは、石鹼で洗い流して下さい。

6. 保管の条件

- (1) コンデンサを高温度・高湿度で保管しないで下さい。室内で5～35℃の温度、75%以下の相対湿度で保管して下さい。
- (2) コンデンサに直接、水、塩水及び油がかかる環境で保管しないで下さい。
- (3) コンデンサを有害ガス(硫化水素、亜硫酸、亜硝酸、塩素、アンモニアなど)が充満する環境で保管しないで下さい。
- (4) コンデンサをオゾン、紫外線および放射線が照射される環境で保管しないで下さい。

7. 廃棄の場合

- (1) コンデンサを廃棄する場合には、次のいずれかの方法を取って下さい。  
①コンデンサに穴を開けるか、または潰してから高温焼却(800℃以上)して下さい。  
②コンデンサを焼却しない場合は、専門の産業廃棄物処理業者に渡し、埋め立てなどの処理をして下さい。

以上、アルミニウム電解コンデンサの使用上の注意事項につきましては、EIAJ RCR-2367B 2002年7月改正「電子機器用固定アルミニウム電解コンデンサの使用上の注意事項ガイドライン」に準じておりますので、詳細につきましては、上記ガイドラインをご参照下さい。

4. Maintenance and Inspection

- (1) Please periodically inspect the aluminum capacitors that are installed in industrial equipment. The following items should be checked :  
① Appearance : Remarkable abnormality such as vent operation, leaking electrolyte etc.  
② Electrical characteristic : Capacitance, Dissipation factor, Leakage current etc., which are specified in the drawing exchanged between TK and our customers or the catalog.

5. In an Emergency

- (1) If you see smoke due to operation of safety vent, turn off the main switch or pull out the plug from the outlet.
- (2) Do not draw your face the safety vent since gas which in over 100℃ will be emitted when the safety vent operates. If the gas has entered your eyes, please flush your eyes immediately in pure water. If you breathed the gas, immediately wash out your mouth and throat with water. Do not ingest electrolyte. If your skin is exposed to electrolyte, please wash it away using soap and water.

6. Storage

- (1) Do not keep capacitor in high temperature and high humidity. Storage ambient should be :  
Temperature : 5℃～35℃, Humidity : lower than 75%  
Place : Indoor
- (2) Avoid ambient conditions :  
Where capacitors can be covered with water, brine or oil.
- (3) Avoid ambient conditions :  
Where capacitors are exposed poisonous gases such as hydrogen sulfide, sulfurous acid, nitrous acid, chlorine, ammonium etc.
- (4) Do not keep capacitor in conditions, that expose the capacitor to ozone, ultraviolet ray or radiation.

7. Disposal

- (1) Please dispose capacitors in either of the following ways :  
① Incinerate capacitors (high temperature of more than 800℃) after crushing parts of making a hole on the capacitor body.  
② Bury capacitors in the ground. Please have a disposal specialist do it.

The above mentioned material is according to EIAJ, RCR-2367B (revised in July, 2002), titled "Guideline of notabilia for Fixed Aluminum Electrolytic Capacitors for use in Electrolytic Equipment". Please refer to the book for details.



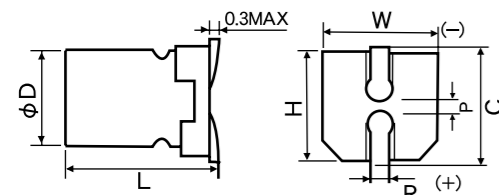
●縦型チップ標準品  
**VBSシリーズ** JIS C5101 CE-32 (耐洗浄品)

- 特 徴
- ・面実装構造で高密度実装に対応できます。
  - ・耐熱性に優れ、リフローはんだ付けが可能です。

■性 能/PERFORMANCE SPECIFICATIONS

カテゴリー温度範囲	CATEGORY TEMPERATURE RANGE	-40°C ~ +85°C																																
標準静電容量許容差	STANDARD CAPACITANCE TOLERANCE	-20% ~ +20% (120Hz)																																
漏れ電流 (最大値)	LEAKAGE CURRENT (MAX. VALUE)	I=0.01CV OR 3μA WHICHEVER IS THE GREATER (after 2 minutes) C=RATED CAPACITANCE (μF) V=WORKING VOLTAGE (V)																																
損失角の正接 (最大値) (tan δ)	DISSIPATION FACTOR (MAX. VALUE)	<table border="1"> <tr> <th>W.V</th> <th>4</th> <th>6.3</th> <th>10</th> <th>16</th> <th>25</th> <th>35</th> <th>50</th> <th>63</th> <th>100</th> </tr> <tr> <td>φ4~φ6.3</td> <td>0.35</td> <td>0.26</td> <td>0.20</td> <td>0.16</td> <td>0.14</td> <td>0.12</td> <td>0.12</td> <td>0.12</td> <td>0.10</td> </tr> <tr> <td>φ8~φ16</td> <td>0.40</td> <td>0.30</td> <td>0.24</td> <td>0.20</td> <td>0.16</td> <td>0.14</td> <td>0.12</td> <td>0.12</td> <td>0.10</td> </tr> </table> <p>When the capacitance exceed 1,000μF, the value of tan δ is increased by 0.02 for each increment of 1,000μF or its fraction.</p>			W.V	4	6.3	10	16	25	35	50	63	100	φ4~φ6.3	0.35	0.26	0.20	0.16	0.14	0.12	0.12	0.12	0.10	φ8~φ16	0.40	0.30	0.24	0.20	0.16	0.14	0.12	0.12	0.10
W.V	4	6.3	10	16	25	35	50	63	100																									
φ4~φ6.3	0.35	0.26	0.20	0.16	0.14	0.12	0.12	0.12	0.10																									
φ8~φ16	0.40	0.30	0.24	0.20	0.16	0.14	0.12	0.12	0.10																									
耐久 性 85°C 2000時間 定格電圧印加	ENDURANCE APPLICATION OF RATED OPERATING VOLTAGE, AT 85°C FOR 2000hrs.	<p>CAPACITANCE CHANGE : LESS THAN 25% OF THE INITIAL MEASURED VALUE.</p> <p>DISSIPATION FACTOR : LESS THAN 200% OF THE INITIAL SPECIFIED VALUE.</p> <p>LEAKAGE CURRENT : LESS THAN THE INITIAL SPECIFIED VALUE.</p>																																

■寸法図/DIAGRAM OF DIMENSIONS



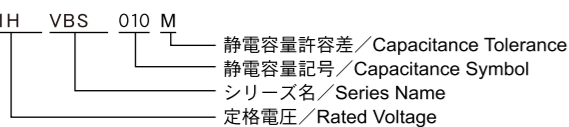
(単位: mm)

D+0.5MAX	L	W±0.2	H±0.2	C±0.2	R	P±0.2
4	5.4 <sup>+0.1</sup> <sub>-0.2</sub>	4.3	4.3	5.0	0.5~0.8	1.0
5	5.4 <sup>+0.1</sup> <sub>-0.2</sub>	5.3	5.3	6.0	0.5~0.8	1.4
6.3	5.4 <sup>+0.1</sup> <sub>-0.2</sub>	6.6	6.6	7.3	0.5~0.8	2.2
4	6.0±0.3	4.3	4.3	5.0	0.5~0.8	1.0
6.3	6.0±0.3	6.6	6.6	7.3	0.5~0.8	2.2
6.3	7.7±0.3	6.6	6.6	7.3	0.5~0.8	2.2
8	10.2±0.3	8.3	8.3	9.0	0.7~1.0	3.2
10	7.7±0.3	10.3	10.3	11.0	1.1~1.4	4.6
10	10.2±0.3	10.3	10.3	11.0	1.1~1.4	4.6
12.5	13.5±0.5	12.8	12.8	13.5	1.1~1.4	4.6
16	16.5±0.5	16.3	16.3	17.0	1.8~2.1	7.0

■寸法表 (φD×L) SIZE TABLE (φD×L)

μF \ WV	4 (0G)	6.3 (0J)	10 (1A)	16 (1C)	25 (1E)	35 (1V)	50 (1H)	63 (1J)	100 (2A)
0.47 (R47)							4×5.4 5	4×5.4 5	
1 (010)							4×5.4 10	4×6.0 10	
2.2 (2R2)							4×5.4 15	6.3×6.0 20	
3.3 (3R3)							4×5.4 18	5×5.4 20	6.3×6.0 28
4.7 (4R7)					4×5.4 19	4×5.4 20	5×5.4 23	5×5.4 23	6.3×6.0 35
10 (100)				4×5.4 25	5×5.4 28	5×5.4 30	6.3×5.4 34	6.3×5.4 34	6.3×7.7 50
22 (220)		4×5.4 31	5×5.4 35	5×5.4 39	6.3×5.4 52	6.3×5.4 54	6.3×6.0 60	6.3×7.7 70	8×10.2 120
33 (330)	4×5.4 26	5×5.4 39	5×5.4 43	6.3×5.4 57	6.3×5.4 63	6.3×6.0 60	6.3×7.7 85	8×10.2 160	10×10.2 190
47 (470)	4×5.4 34	5×5.4 47	6.3×5.4 59	6.3×5.4 68	6.3×6.0 68	6.3×6.0 70	6.3×7.7 90	8×10.2 170	12.5×13.5 330
68 (680)								8×10.2 180	12.5×13.5 350
82 (820)							10×7.7 200		
100 (101)	5×5.4 61	6.3×5.4 71	6.3×5.4 76	6.3×5.4 86	6.3×7.7 130	6.3×7.7 120	8×10.2 200	10×10.2 280	16×16.5 550
150 (151)							8×10.2 220	10×10.2 270	16×16.5 560
220 (221)	6.3×5.4 82	6.3×6.0 95	6.3×7.7 150	6.3×7.7 150	8×10.2 250	8×10.2 270	10×10.2 320	12.5×13.5 410	
330 (331)	6.3×6.0 102	6.3×7.7 150	8×10.2 280	8×10.2 280	8×10.2 310	10×10.2 340	12.5×13.5 520		
390 (391)							12.5×13.5 550		
470 (471)	6.3×7.7 150	8×10.2 300	8×10.2 300	8×10.2 330	10×10.2 430	12.5×13.5 590		16×16.5 700	
680 (681)		8×10.2 300					12.5×13.5 610		
1000 (102)	10×7.7 330								
1500 (152)		10×10.2 450							
2200 (222)			12.5×13.5 730						
3300 (332)				16×16.5 1200					
4700 (472)					16×16.5 1260				
6800 (682)		16×16.5 1330							

■品番ご指定法 / HOW TO SPECIFY ITEM NUMBER



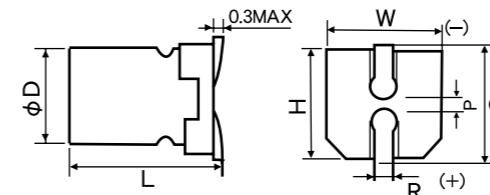
●縦型チップ105°C品  
**VFSシリーズ** JIS C5101 CE-32 (100WV 以下耐洗浄品)

- 特 徴
- ・105°C、1000~2000時間保証品
  - ・耐熱性に優れ、リフローはんだ付けが可能です。

■性 能/PERFORMANCE SPECIFICATIONS

カテゴリー温度範囲	CATEGORY TEMPERATURE RANGE	-55°C ~ +105°C (6.3~63V)		-40°C ~ +105°C (100~400V)																																									
標準静電容量許容差	STANDARD CAPACITANCE TOLERANCE	-20% ~ +20% (120Hz)		-20% ~ +20% (120Hz)																																									
漏れ電流 (最大値)	LEAKAGE CURRENT (MAX. VALUE)	6.3~100V : I=0.01CV OR 3μA WHICHEVER IS THE GREATER (after 2 minutes)		160~400V : CV≤1000 : 0.03CV+15 CV>1000 : 0.02CV+25																																									
損失角の正接 (最大値) (tan δ)	DISSIPATION FACTOR (MAX. VALUE)	<table border="1"> <tr> <th>W.V</th> <th>6.3</th> <th>10</th> <th>16</th> <th>25</th> <th>35</th> <th>50</th> <th>63</th> <th>100</th> <th>160</th> <th>200</th> <th>250</th> <th>400</th> </tr> <tr> <td>φ4~φ6.3</td> <td>0.24</td> <td>0.20</td> <td>0.16</td> <td>0.14</td> <td>0.12</td> <td>0.10</td> <td>0.12</td> <td>0.10</td> <td>0.20</td> <td>0.20</td> <td>0.20</td> <td>0.25</td> </tr> <tr> <td>φ8~φ18</td> <td>0.28</td> <td>0.24</td> <td>0.20</td> <td>0.16</td> <td>0.14</td> <td>0.12</td> <td>0.12</td> <td>0.10</td> <td>0.20</td> <td>0.20</td> <td>0.20</td> <td>0.25</td> </tr> </table> <p>When the capacitance exceed 1,000μF, the value of tan δ is increased by 0.02 for each increment of 1,000μF or its fraction.</p>		W.V	6.3	10	16	25	35	50	63	100	160	200	250	400	φ4~φ6.3	0.24	0.20	0.16	0.14	0.12	0.10	0.12	0.10	0.20	0.20	0.20	0.25	φ8~φ18	0.28	0.24	0.20	0.16	0.14	0.12	0.12	0.10	0.20	0.20	0.20	0.25	<p>CAPACITANCE CHANGE : LESS THAN 25% OF THE INITIAL MEASURED VALUE.</p> <p>DISSIPATION FACTOR : LESS THAN 200% OF THE INITIAL SPECIFIED VALUE.</p> <p>LEAKAGE CURRENT : LESS THAN THE INITIAL SPECIFIED VALUE.</p>		
W.V	6.3	10	16	25	35	50	63	100	160	200	250	400																																	
φ4~φ6.3	0.24	0.20	0.16	0.14	0.12	0.10	0.12	0.10	0.20	0.20	0.20	0.25																																	
φ8~φ18	0.28	0.24	0.20	0.16	0.14	0.12	0.12	0.10	0.20	0.20	0.20	0.25																																	
耐久 性 6.3~100V φ4~φ6.3, φ10×7.7 : 1000時間 φ8~φ18 : 2000時間 160~400V φ8 : 1000時間 φ10~φ18 : 2000時間 105°C定格電圧印加	ENDURANCE APPLICATION OF RATED VOLTAGE AT 105°C	6.3~100V φ4~φ6.3, φ10×7.7 : 1000hrs φ8~φ18 : 2000hrs 160~400V φ8 : 1000hrs φ10~φ18 : 2000hrs																																											

■寸法図/DIAGRAM OF DIMENSIONS



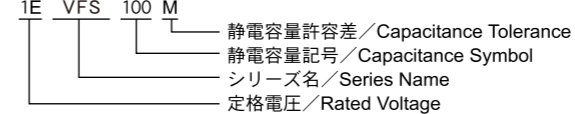
(単位: mm)

D+0.5MAX	L	W±0.2	H±0.2	C±0.2	R	P±0.2
4	5.4 <sup>+0.1</sup> <sub>-0.2</sub>	4.3	4.3	5.0	0.5~0.8	1.0
4	6.0±0.3	4.3	4.3	5.0	0.5~0.8	1.0
5	5.4 <sup>+0.1</sup> <sub>-0.2</sub>	5.3	5.3	6.0	0.5~0.8	1.4
6.3	5.4 <sup>+0.1</sup> <sub>-0.2</sub>	6.6	6.6	7.3	0.5~0.8	2.2
6.3	6.0±0.3	6.6	6.6	7.3	0.5~0.8	2.2
6.3	7.7±0.3	6.6	6.6	7.3	0.5~0.8	2.2
8	10.2±0.3	8.3	8.3	9.0	0.7~1.0	3.2
10	7.7±0.3	10.3	10.3	11.0	1.0~1.4	4.6
10	10.2±0.3	10.3	10.3	11.0	1.0~1.4	4.6
12.5	13.5±0.5	12.8	12.8	13.5	1.0~1.4	4.6
16	16.5±0.5	16.3	16.3	17.3	1.8~2.1	7.0
18	16.5±1.0	19.0	19.0	20.0	1.7~2.1	7.0
18	21.5±0.5	19.0	19.0	20.0	1.7~2.1	7.0

■寸法表 (φD×L) SIZE TABLE (φD×L)

μF \ WV	6.3V (0J)	10V (1A)	16V (1C)	25V (1E)	35V (1V)	50V (1H)	63V (1J)	100 (2A)	160 (2C)	200 (2D)	250 (2E)	400 (2G)
0.47 (R47)												
1 (010)												
2.2 (2R2)												
3.3 (3R3)												
4.7 (4R7)												
6.8 (6R8)												
10 (100)												
22 (220)	4×5.4 22	5×5.4 25	5×5.4 27	6.3×5.4 36	6.3×5.4 38	6.3×6.0 42	6.3×7.7 60	8×10.2 112				
33 (330)	5×5.4 27	5×5.4 30	6.3×5.4 40	6.3×5.4 44	6.3×6.0 42	6.3×7.7 60	8×10.2 112	10×10.2 133				
47 (470)	5×5.4 33	6.3×5.4 41	6.3×5.4 48	6.3×6.0 48	6.3×6.0 49	6.3×7.7 63	8×10.2 119	12.5×13.5 240				
68 (680)								8×10.2 126	12.5×13.5 245			
82 (820)									16×16.5 235			
100 (101)	6.3×5.4 50	6.3×5.4 53	6.3×5.4 60	6.3×7.7 91	6.3×7.7 84	8×10.2 140	10×10.2 196	16×16.5 490				
150 (151)												
220 (221)	6.3×6.0 67	6.3×7.7 105	6.3×7.7 105	8×10.2 175	8×10.2 175	8×10.2 190	10×10.2 220	12.5×13.5 287	18×16.5 650			
330 (331)	6.3×7.7 105	8×10.2 195	8×10.2 195	10×10.2 220	10×10.2 300	12.5×13.5 365		18×21.5 700				
390 (391)												
470 (471)	8×10.2 210	8×10.2 210	8×10.2 230	10×10.2 300	12.5×13.5 410							
680 (681)	8×10.2 210	10×7.7 210	10×10.2 310									
1000 (102)	8×10.2 230	10×10.2 310										
1500 (152)	10×10.2 310											
2200 (222)			12.5×13.5 500									
2700 (272)												
3300 (332)	12.5×13.5 520											
3900 (392)												
4700 (472)												
5600 (562)												
6800 (682)	16×16.5 930	18×16.5 1100										
8200 (822)		18×21.5 1350										
10000 (103)	18×16.5 1200											
12000 (123)	18×21.5 1350											

■品番ご指定法 / HOW TO SPECIFY ITEM NUMBER



●縦型チップ長寿命低インピーダンス品

**VLSシリーズ** JIS C5101  
CE-32  
(耐洗浄品)

●VERTICAL CHIP LOW IMPEDANCE LONG LIFE

**TYPE VLS** JIS C5101  
CE-32  
(Washable product)

■特徴

・VLSシリーズは低インピーダンスの105℃3000時間保証品です。

■FEATURES

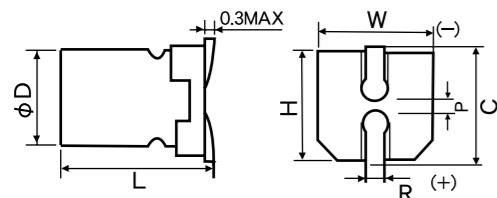
・This series gurantees 105℃×3,000 hours with low impedance.

■性能/PERFORMANCE SPECIFICATIONS

カテゴリ温度範囲	CATEGORY TEMPERATURE RANGE	-40℃~+105℃						
標準静電容量許容差	STANDARD CAPACITANCE TOLERANCE	-20%~+20% (120Hz)						
漏れ電流 (最大値)	LEAKAGE CURRENT (MAX. VALUE)	I=0.01CV OR 3μA WHICHEVER IS THE GREATER (after 2 minutes)			C=RATED CAPACITANCE (μF) V=WORKING VOLTAGE (V)			
損失角の正接 (最大値) (tan δ)	DISSIPATION FACTOR (MAX. VALUE)	W.V	6.3	10	16	25	35	50
		tan δ	0.28	0.24	0.22	0.16	0.13	0.12
耐久性 105℃ 3000時間 定格電圧印加	ENDURANCE APPLICATION OF RATED VOLTAGE, AT 105℃ FOR 3000hrs.	CAPACITANCE CHANGE : LESS THAN 30% OF THE INITIAL MEASURED VALUE. DISSIPATION FACTOR : LESS THAN 300% OF THE INITIAL SPECIFIED VALUE. LEAKAGE CURRENT : LESS THAN THE INITIAL SPECIFIED VALUE.						
低温特性 (+20℃における120Hzの インピーダンスに対する比) (最大値)	LOW TEMPERATURE STABILITY (RATIO OF IMPEDANCE AT COLD TO THAT AT 20℃, 120Hz. MAX. VALUE.)	W.V	6.3	10	16	25~50		
		-25℃/+20℃	4	3	2	2		
		-40℃/+20℃	10	7	5	3		

■寸法図/DIAGRAM OF DIMENSIONS

(単位: mm)



D±0.5MAX.	L±0.3	W±0.2	H±0.2	C±0.2	R	P±0.2
4	6.0	4.3	4.3	5.0	0.5~0.8	1.0
5	6.0	5.3	5.3	6.0	0.5~0.8	1.4
6.3	6.0	6.6	6.6	7.3	0.5~0.8	2.2
6.3	7.7	6.6	6.6	7.3	0.5~0.8	2.2

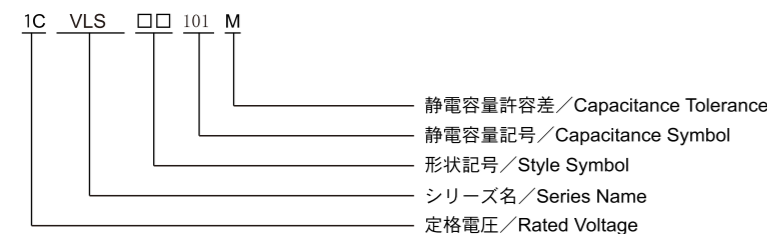
■寸法表 (φD×L) SIZE TABLE (φD×L)

μF	WV	6.3 (0J)	10 (1A)	16 (1C)	25 (1E)	35 (1V)	50 (1H)
10 (100)						5×6.0 1.30 95	6.3×6.0 2.00 70
22 (220)				5×6.0 1.30 95	5×6.0 1.30 95	6.3×6.0 0.70 140	6.3×6.0 2.00 70
33 (330)			5×6.0 1.30 95		6.3×6.0 0.70 140		6.3×7.7 1.35 100
47 (470)	5×6.0 1.30 95			6.3×6.0 0.70 140	6.3×6.0 0.70 140	6.3×7.7 0.60 230	
100 (101)	6.3×6.0 0.70 140			6.3×6.0 0.70 140	6.3×7.7 0.60 230		
150 (151)		6.3×6.0 0.70 140		6.3×7.7 0.60 140			
220 (221)	6.3×7.7 0.60 230			6.3×7.7 0.60 230			
330 (331)	6.3×7.7 0.60 230						

Case size ; φD×L (mm) | Ripple current (mA r.m.s.) (100kHz, 105℃)

Impedance (Ω) MAX. at 100kHz, 20℃

■品番ご指定法/ HOW TO SPECIFY ITEM NUMBER



静電容量許容差 / Capacitance Tolerance  
静電容量記号 / Capacitance Symbol  
形状記号 / Style Symbol  
シリーズ名 / Series Name  
定格電圧 / Rated Voltage

●縦型チップ低インピーダンス品

**VKXシリーズ** JIS C5101  
CE-32  
(耐洗浄品)

●VERTICAL CHIP LOW IMPEDANCE TYPE

**TYPE VKX** JIS C5101  
CE-32  
(Washable product)

■特徴

・VKXシリーズは、面実装タイプの低インピーダンス品です。

■FEATURES

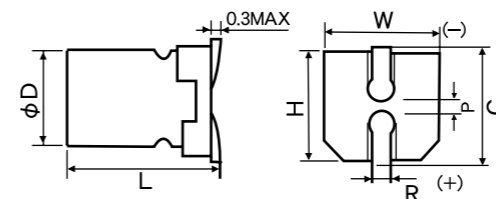
・VKX series is low impedance.

■性能/PERFORMANCE SPECIFICATIONS

カテゴリ温度範囲	CATEGORY TEMPERATURE RANGE	-55℃~+105℃									
標準静電容量許容差	STANDARD CAPACITANCE TOLERANCE	-20%~+20% (120Hz)									
漏れ電流 (最大値)	LEAKAGE CURRENT (MAX. VALUE)	I=0.01CV OR 3μA WHICHEVER IS THE GREATER (after 2 minutes)					C=RATED CAPACITANCE (μF) V=WORKING VOLTAGE (V)				
損失角の正接 (最大値) (tan δ)	DISSIPATION FACTOR (MAX. VALUE)	W.V	6.3	10	16	25	35	50	63	80	100
		φ4~φ6.3	0.24	0.20	0.16	0.14	0.12	0.12	0.10	0.08	0.07
		φ8~φ16	0.28	0.24	0.20	0.16	0.14	0.14	0.12	0.10	0.08
		When the capacitance exceed 1,000μF, the value of tan δ is increased by 0.02 for each increment of 1,000μF or its fraction.									
耐久性 105℃ 2000時間 定格電圧印加 (φD≤6.3 : 1000時間)	ENDURANCE APPLICATION OF RATED VOLTAGE, AT 105℃ FOR 2000hrs. (φD≤6.3 : 1000hrs)	CAPACITANCE CHANGE : LESS THAN 25% OF THE INITIAL MEASURED VALUE. DISSIPATION FACTOR : LESS THAN 200% OF THE INITIAL SPECIFIED VALUE. LEAKAGE CURRENT : LESS THAN THE INITIAL SPECIFIED VALUE.									
低温特性 (+20℃における120Hzの インピーダンスに対する比) (最大値)	LOW TEMPERATURE STABILITY (RATIO OF IMPEDANCE AT COLD TO THAT AT 20℃, 120Hz. MAX. VALUE.)	W.V	6.3	10, 16	25~100						
		-40℃/+20℃	3	2	2						
		-55℃/+20℃	5	4	3						

■寸法図/DIAGRAM OF DIMENSIONS

(単位: mm)



D±0.5MAX.	L±0.3	W±0.2	H±0.2	C±0.2	R	P±0.2
4	6.0	4.3	4.3	5.0	0.5~0.8	1.0
5	6.0	5.3	5.3	6.0	0.5~0.8	1.4
6.3	6.0	6.6	6.6	7.3	0.5~0.8	2.2
6.3	7.7	6.6	6.6	7.3	0.5~0.8	2.2
8	10.2	8.3	8.3	9.0	0.7~1.0	3.2
10	10.2	10.3	10.3	11.0	1.1~1.4	4.6
12.5	13.5±0.5	12.8	12.8	13.5	1.1~1.4	4.6
16	16.5±0.5	16.3	16.3	17.0	1.8~2.1	7.0

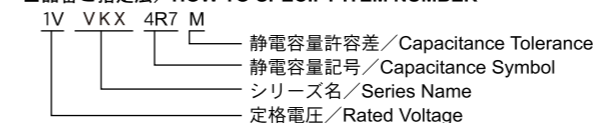
■寸法表 (φD×L) SIZE TABLE (φD×L)

μF	WV	6.3 (0J)	10 (1A)	16 (1C)	25 (1E)	35 (1V)	50 (1H)	63 (1J)	80 (1K)	100 (2A)
4.7 (4R7)						4×6.0 1.45 90	4×6.0 2.55 64	5×6.0 2.00 55	6.3×6.0 2.40 45	
10 (100)					4×6.0 1.45 90	5×6.0 0.70 170	6.3×6.0 0.52 215	6.3×6.0 1.00 90	6.3×7.7 2.00 65	
15 (150)				4×6.0 1.45 90	5×6.0 0.70 170	5×6.0 0.70 170				
22 (220)		4×6.0 1.45 90		5×6.0 0.70 170	5×6.0 0.70 170	5×6.0 0.70 170	6.3×6.0 0.52 215	6.3×7.7 0.80 135	8×10.2 0.90 140	8×10.2 0.90 140
27 (270)	4×6.0 1.45 90				6.3×6.0 0.39 250	6.3×6.0 0.39 250	6.3×7.7 0.44 243	8×10.2 0.35 280	8×10.2 0.90 140	10×10.2 0.50 220
33 (330)		5×6.0 0.70 170			6.3×6.0 0.39 250	6.3×6.0 0.39 250	6.3×7.7 0.44 243	8×10.2 0.35 280	10×10.2 0.50 220	12.5×13.5 0.24 500
47 (470)	5×6.0 0.70 170			6.3×6.0 0.39 250	6.3×6.0 0.39 250	6.3×6.0 0.39 250	6.3×7.7 0.44 243	8×10.2 0.35 280	10×10.2 0.50 220	12.5×13.5 0.24 500
56 (560)	5×6.0 0.70 170				6.3×6.0 0.39 250					
68 (680)		6.3×6.0 0.39 250		6.3×6.0 0.39 250	6.3×6.0 0.39 250	6.3×7.7 0.30 300				
100 (101)	6.3×6.0 0.39 250			6.3×6.0 0.39 250	6.3×7.7 0.30 300	8×10.2 0.15 600	8×10.2 0.22 400	10×10.2 0.20 480	12.5×13.5 0.24 500	16×16.5 0.14 800
150 (151)	6.3×6.0 0.39 250	6.3×6.0 0.39 250		6.3×7.7 0.30 300	8×10.2 0.15 600	8×10.2 0.15 600			12.5×13.5 0.24 500	16×16.5 0.14 800
220 (221)	6.3×6.0 0.39 250	6.3×7.7 0.30 300		6.3×7.7 0.30 300	8×10.2 0.15 600	8×10.2 0.15 600			12.5×13.5 0.13 800	
330 (331)	6.3×7.7 0.30 300	8×10.2 0.15 600		8×10.2 0.15 600	8×10.2 0.15 600	8×10.2 0.15 600	10×10.2 0.08 850	12.5×13.5 0.10 800		16×16.5 0.14 800
470 (471)	8×10.2 0.15 600	8×10.2 0.15 600		8×10.2 0.15 600	10×10.2 0.08 850	12.5×13.5 0.058 1150			16×16.5 0.065 1410	
680 (681)	8×10.2 0.15 600			10×10.2 0.08 850		12.5×13.5 0.058 1150				
1000 (102)	8×10.2 0.15 600	10×10.2 0.08 850			12.5×13.5 0.058 1150		16×16.5 0.035 1800			
1500 (152)	10×10.2 0.08 850				12.5×13.5 0.058 1150		16×16.5 0.035 1800			
2200 (222)		12.5×13.5 0.058 1150				16×16.5 0.035 1800				
3300 (332)	12.5×13.5 0.058 1150			16×16.5 0.035 1800						
4700 (472)		16×16.5 0.035 1800								
6800 (682)	16×16.5 0.035 1800									

Case size ; φD×L (mm) | Ripple current (mA r.m.s.) (100kHz, 105℃)

Impedance (Ω) MAX. at 100kHz, 20℃

■品番ご指定法/ HOW TO SPECIFY ITEM NUMBER



静電容量許容差 / Capacitance Tolerance  
静電容量記号 / Capacitance Symbol  
シリーズ名 / Series Name  
定格電圧 / Rated Voltage



●縦型チップ長寿命低インピーダンス品

**VLXシリーズ** JIS C5101  
CE-32  
(耐洗淨品)

■特徴

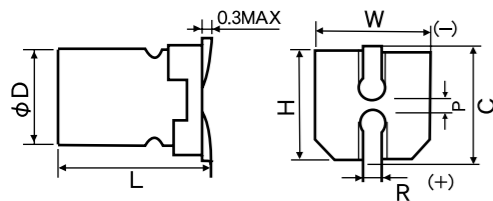
・VLXシリーズは、長寿命タイプの低インピーダンス品です。

■性能/PERFORMANCE SPECIFICATIONS

カテゴリ温度範囲	CATEGORY TEMPERATURE RANGE	-55°C ~ +105°C								
標準静電容量許容差	STANDARD CAPACITANCE TOLERANCE	-20% ~ +20% (120Hz)								
漏れ電流 (最大値)	LEAKAGE CURRENT (MAX. VALUE)	I=0.01CV OR 3μA WHICHEVER IS THE GREATER (after 2 minutes) C=RATED CAPACITANCE (μF) V=WORKING VOLTAGE (V)								
損失角の正接 (最大値) (tan δ)	DISSIPATION FACTOR (MAX. VALUE)	W.V	6.3	10	16	25	35.50	63	80	100
		φ4 ~ φ6.3	0.26	0.2	0.16	0.14	0.12	-	-	-
		φ8 ~ φ18 0.28 0.24 0.22 0.16 0.14 0.08 0.08 0.07								
		When the capacitance exceed 1,000μF, the value of tan δ is increased by 0.02 for each increment of 1,000μF or its fraction.								
耐久性能 105°C 5000時間 定格電圧印加 (φD≤6.3: 2000時間)	ENDURANCE APPLICATION OF RATED VOLTAGE, AT 105°C FOR 5000hrs. (φD≤6.3: 2000hrs)	CAPACITANCE CHANGE: LESS THAN 30% OF THE INITIAL MEASURED VALUE. DISSIPATION FACTOR: LESS THAN 300% OF THE INITIAL SPECIFIED VALUE. LEAKAGE CURRENT: LESS THAN THE INITIAL SPECIFIED VALUE.								
低温特性 (+20°Cにおける120Hzの インピーダンスに対する比) (最大値)	LOW TEMPERATURE STABILITY (RATIO OF IMPEDANCE AT COLD TO THAT AT 20°C, 120Hz. MAX. VALUE.)	W.V	6.3	10	16	25	35.50	63	80	100
		-40°C/+20°C	3	3	3	3	3	2	2	2
		-55°C/+20°C	4	4	4	3	3	3	3	3

■寸法図/DIAGRAM OF DIMENSIONS

(単位: mm)

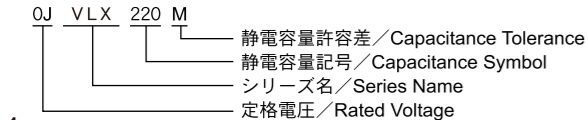


D±0.5MAX.	L±0.3	W±0.2	H±0.2	C±0.2	R	P±0.2
4	6.0	4.3	4.3	5.0	0.5~0.8	1.0
5	6.0	5.3	5.3	6.0	0.5~0.8	1.4
6.3	6.0	6.6	6.6	7.3	0.5~0.8	2.2
6.3	7.7	6.6	6.6	7.3	0.5~0.8	2.2
8	10.2	8.3	8.3	9.0	0.7~1.0	3.2
10	7.7	10.3	10.3	11.0	1.0~1.4	4.6
10	10.2	10.3	10.3	11.0	1.0~1.4	4.6
12.5	13.5±0.5	12.8	12.8	13.5	1.0~1.4	4.6
16	16.5±0.5	16.3	16.3	17.3	1.8~2.1	7.0
18	16.5±0.5	19.0	19.0	20.0	1.7~2.1	7.0
18	21.5±0.5	19.0	19.0	20.0	1.7~2.1	7.0

■寸法表 (φD×L) SIZE TABLE (φD×L)

μF	W.V	6.3V (0J)	10V (1A)	16V (1C)	25V (1E)	35V (1V)	50V (1H)	63V (1J)	80V (1K)	100 (2A)
4.7 (4R7)										
10 (100)										
15 (150)										
22 (220)										
27 (270)	4×6.0	1.45 90	5×6.0	0.70 170	5×6.0	0.70 170	6.3×6.0	0.880 165		
33 (330)	5×6.0	0.70 170	5×6.0	0.70 170	6.3×6.0	0.390 250	6.3×6.0	0.39 250		
47 (470)	5×6.0	0.70 170	6.3×6.0	0.39 250	6.3×6.0	0.390 250	6.3×6.0	0.39 250		
56 (560)	5×6.0	0.70 170	6.3×6.0	0.39 250	6.3×6.0	0.390 250	6.3×6.0	0.39 250		
68 (680)	6.3×6.0	0.390 250	6.3×6.0	0.39 250	6.3×6.0	0.390 250	6.3×6.0	0.39 250		
100 (101)	5×6.0※2	0.70 170	6.3×6.0	0.39 250	6.3×6.0	0.39 250	6.3×7.7※2	0.30 300	8×10.2	0.340 300
150 (151)	6.3×6.0	0.39 250	6.3×6.0	0.39 250	6.3×7.7	0.30 300	8×10.2	0.17 450	10×10.2	0.17 450
220 (221)	6.3×6.0	0.39 250	6.3×7.7	0.30 300	6.3×7.7	0.30 300	8×10.2	0.17 450	10×7.7※1	0.17 450
330 (331)	6.3×7.7	0.3 300	8×10.2	0.17 450	8×10.2	0.17 450	10×10.2	0.18 490	12.5×13.5	0.16 580
470 (471)	8×10.2	0.17 450	8×10.2	0.17 450	10×10.2	0.09 670	12.5×13.5	0.06 900	16×16.5	0.073 1610
680 (681)	8×10.2	0.17 450	10×10.2	0.09 670	10×10.2	0.09 670	12.5×13.5	0.06 900	16×16.5	0.073 1610
1000 (102)	8×10.2	0.17 450	10×10.2	0.09 670	12.5×13.5	0.06 900	12.5×13.5	0.06 900	16×16.5	0.035 1800
1200 (122)										
1500 (152)	10×10.2	0.09 670	12.5×13.5	0.06 900	12.5×13.5	0.06 900	16×16.5	0.035 1800	16×16.5	0.035 1800
2200 (222)	12.5×13.5	0.06 900	12.5×13.5	0.06 900	16×16.5	0.035 1800	18×16.5	0.033 2060	18×16.5	0.033 2060
2700 (272)										
3300 (332)										
3900 (392)										
4700 (472)										
5600 (562)										
6800 (682)	16×16.5	0.035 1800	18×16.5	0.033 2060	18×16.5	0.033 2060	18×21.5	0.028 2260		
8200 (822)	16×16.5	0.033 2060	18×21.5	0.028 2260						
10000 (103)	18×16.5	0.033 2060								
12000 (123)	18×21.5	0.028 2260								

■品番ご指定法/HOW TO SPECIFY ITEM NUMBER



Case size; φD×L (mm)

Ripple current (mA r.m.s.) (100kHz, 105°C)  
Impedance (Ω) MAX. at 100kHz, 20°C

●縦型チップ長寿命低インピーダンス品

**VLLシリーズ** JIS C5101  
CE-32

■特徴

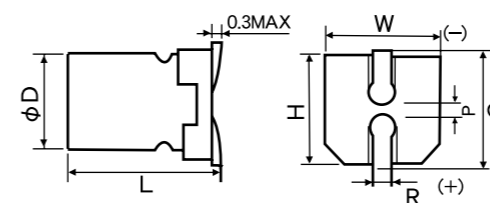
・VLLシリーズは低インピーダンスの105°C 7,000~10,000時間保証品です。

■性能/PERFORMANCE SPECIFICATIONS

カテゴリ温度範囲	CATEGORY TEMPERATURE RANGE	-40°C ~ +105°C						
標準静電容量許容差	STANDARD CAPACITANCE TOLERANCE	-20% ~ +20% (120Hz)						
漏れ電流 (最大値)	LEAKAGE CURRENT (MAX. VALUE)	I=0.01CV OR 3μA WHICHEVER IS THE GREATER (after 2 minutes) C=RATED CAPACITANCE (μF) V=WORKING VOLTAGE (V)						
損失角の正接 (最大値) (tan δ)	DISSIPATION FACTOR (MAX. VALUE)	W.V	6.3	10	16	25	35	50
		tan δ	0.32	0.28	0.26	0.16	0.14	0.14
耐久性能 105°C 10000時間 定格電圧印加 (φ5~φ6.3: 7000時間)	ENDURANCE APPLICATION OF RATED VOLTAGE, AT 105°C FOR 10000hrs. (φ5~φ6.3: 7000hrs)	CAPACITANCE CHANGE: LESS THAN 30% OF THE INITIAL MEASURED VALUE. DISSIPATION FACTOR: LESS THAN 300% OF THE INITIAL SPECIFIED VALUE. LEAKAGE CURRENT: LESS THAN THE INITIAL SPECIFIED VALUE.						
低温特性 (+20°Cにおける120Hzの インピーダンスに対する比) (最大値)	LOW TEMPERATURE STABILITY (RATIO OF IMPEDANCE AT COLD TO THAT AT 20°C, 120Hz. MAX. VALUE.)	W.V	6.3	10	16~50			
		-25°C/+20°C	4	3	2			

■寸法図/DIAGRAM OF DIMENSIONS

Unit: mm



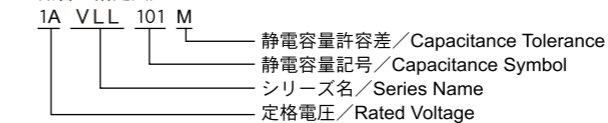
D+0.5max	L±0.3	W±0.2	H±0.2	C±0.2	R	P±0.2
5	7.0	5.3	5.3	6.0	0.5~0.8	1.4
6.3	7.0	6.6	6.6	7.3	0.5~0.8	2.2
6.3	8.4	6.6	6.6	7.3	0.5~0.8	2.2
8	10.2	8.3	8.3	9.0	0.7~1.0	3.2
10	10.2	10.3	10.3	11.0	1.0~1.4	4.6

■標準品一覧表/STANDARD PRODUCT TABLE

W.V	6.3 (0J)	10 (1A)	16 (1C)	25 (1E)	35 (1V)	50 (1H)	
10							
22			5×7.0	2.2 95	5×7.0	2.2 95	
33		5×7.0	2.2 95		6.3×7.0	1.1 140	
47	5×7.0	2.2 95		6.3×7.0	1.1 140	6.3×8.4	1.0 230
100	6.3×7.0	1.1 140		6.3×7.0	1.1 140	6.3×8.4	1.0 230
150		6.3×7.0	1.1 140	6.3×8.4	1.0 230	8×10.2	0.22 600
220	6.3×8.4	1.0 230		6.3×8.4	1.0 230	8×10.2	0.22 600
330	6.3×8.4	1.0 230		8×10.2	0.22 600	10×10.2	0.16 850
470	8×10.2	0.22 600		10×10.2	0.16 850		
1000	10×10.2	0.16 850					

ケースサイズ: φD×L(mm)  
インピーダンス (Ω) max at 100kHz, 20°C  
定格リプル電流 mArms(100kHz, 105°C)

■品番ご指定法/HOW TO SPECIFY ITEM NUMBER



●縦型チップ低インピーダンス品 **New**  
**VZX**シリーズ JIS C5101  
 CE-32  
 (耐洗浄品)

●VERTICAL CHIP LOW IMPEDANCE  
**TYPE VZX** JIS C5101  
 CE-32  
 (Washable product)

- 特徴  
 ・VZXシリーズはVZXシリーズを小型化し  
 ESRを30~50%低減させました。

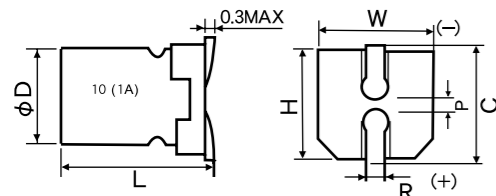
- FEATURES  
 ・30 to 50% less ESR than VZX series st high frequencies.

■性能/PERFORMANCE SPECIFICATIONS

カテゴリ温度範囲	CATEGORY TEMPERATURE RANGE	-55°C~+105°C						
標準静電容量許容差	STANDARD CAPACITANCE TOLERANCE	-20%~+20% (120Hz)						
漏れ電流 (最大値)	LEAKAGE CURRENT (MAX. VALUE)	I=0.01CV IS THE GREATER (after 2 minutes)			C=RATED CAPACITANCE (μF) V=WORKING VOLTAGE (V)			
損失角の正接 (最大値) (tan δ)	DISSIPATION FACTOR (MAX. VALUE)	W.V	6.3	10	16	25	35	50
		tan δ	0.26	0.19	0.16	0.14	0.12	0.10
耐久性 105°C 2000時間 定格電圧印加	ENDURANCE APPLICATION OF RATED VOLTAGE, AT 105°C FOR 2000hrs.	CAPACITANCE CHANGE : LESS THAN 30% OF THE INITIAL MEASURED VALUE. DISSIPATION FACTOR : LESS THAN 200% OF THE INITIAL SPECIFIED VALUE. LEAKAGE CURRENT : LESS THAN THE INITIAL SPECIFIED VALUE.						
低温特性 (+20°Cにおける120Hzの インピーダンスに対する比) (最大値)	LOW TEMPERATURE STABILITY RATIO OF IMPEDANCE AT COLD TO THAT AT 20°C, 120Hz. MAX.VALUE	W.V	6.3	10	16	25	35	50
		-40°C/+20°C	3	3	3	3	3	3
		-55°C/+20°C	4	4	4	3	3	3

■寸法図/DIAGRAM OF DIMENSIONS

(単位: mm)

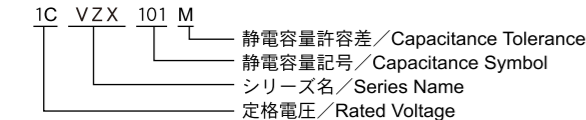


D + 0.5MAX	L ± 0.3	W ± 0.2	H ± 0.2	C ± 0.2	R	P
6.3	6	6.6	6.6	7.3	0.5 ~ 0.8	2.2
6.3	7.7	6.6	6.6	7.3	0.5 ~ 0.8	2.2
8	10.5	8.3	8.3	9.0	0.7 ~ 1.0	3.2
10	10.5	10.3	10.3	11.0	1.0 ~ 1.4	4.6
10	13.5 ± 0.5	10.3	10.3	11.0	1.0 ~ 1.4	4.6

■寸法表 (φD×L) SIZE TABLE (φD×L)

μF \ WV	6.3 (0J)	10 (1A)	16 (1C)	25 (1E)	35 (1V)	50 (1H)
33 (330)				6.3×6.0, 0.26, 300	6.3×6.0, 0.26, 300	
47 (470)			6.3×6.0, 0.26, 300	6.3×6.0, 0.26, 300	6.3×6.0, 0.26, 300	
68 (680)			6.3×6.0, 0.26, 300	6.3×6.0, 0.26, 300	6.3×7.7, 0.16, 600	
100 (101)	6.3×6.0, 0.26, 300		6.3×6.0, 0.26, 300	6.3×7.7, 0.16, 600	6.3×7.7, 0.16, 600	
150 (151)		6.3×6.0, 0.26, 300	6.3×7.7, 0.16, 600	8×10.5, 0.08, 850	8×10.5, 0.08, 850	
220 (221)	6.3×6.0, 0.26, 300	6.3×7.7, 0.16, 600	6.3×7.7, 0.16, 600	8×10.5, 0.08, 850	8×10.5, 0.08, 850	10×10.5, 0.12, 900
330 (331)	6.3×7.7, 0.16, 600	8×10.5, 0.08, 850	8×10.5, 0.08, 850	8×10.5, 0.08, 850	10×10.5, 0.06, 1190	10×13.5, 0.1, 900
390 (391)					10×10.5, 0.08, 850	
470 (471)	8×10.5, 0.08, 850	8×10.5, 0.08, 850	8×10.5, 0.08, 850	10×10.5, 0.06, 1190	10×13.5, 0.06, 1190	
560 (561)				10×10.5, 0.08, 850		
680 (681)		8×10.5, 0.08, 850	10×10.5, 0.06, 1190	10×13.5, 0.06, 1190		
820 (821)			10×10.5, 0.08, 850			
1000 (102)	8×10.5, 0.08, 850	10×10.5, 0.06, 1190	10×13.5, 0.06, 1190			
1200 (122)		10×10.5, 0.08, 850				
1500 (152)	10×10.5, 0.06, 1190	10×13.5, 0.06, 1190				
1800 (182)	10×10.5, 0.08, 850					

■品番ご指定法/ HOW TO SPECIFY ITEM NUMBER



Case size : φD×L (mm) | Ripple current (mA r.m.s.) (100kHz, 105°C) | Impedance (Ω) MAX. at 100kHz, 20°C

●縦型チップ低インピーダンス品 **New**  
**VZC**シリーズ JIS C5101  
 CE-32  
 (耐洗浄品)

●VERTICAL CHIP LOW IMPEDANCE  
**TYPE VZC** JIS C5101  
 CE-32  
 (Washable product)

- 特徴  
 ・VZCシリーズは低インピーダンスの小型化品です。

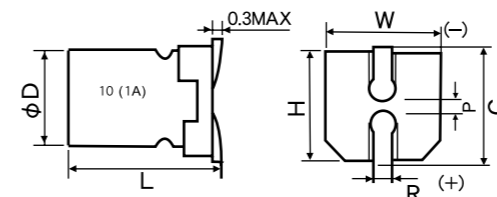
- FEATURES  
 ・This series is a small with low impedance.

■性能/PERFORMANCE SPECIFICATIONS

カテゴリ温度範囲	CATEGORY TEMPERATURE RANGE	-55°C~+105°C					
標準静電容量許容差	STANDARD CAPACITANCE TOLERANCE	-20%~+20% (120Hz)					
漏れ電流 (最大値)	LEAKAGE CURRENT (MAX. VALUE)	I=0.01CV IS THE GREATER (after 2 minutes)			C=RATED CAPACITANCE (μF) V=WORKING VOLTAGE (V)		
損失角の正接 (最大値) (tan δ)	DISSIPATION FACTOR (MAX. VALUE)	W.V	6.3	10	16	25	35
		tan δ	0.26	0.19	0.16	0.14	0.12
耐久性 105°C 2000時間 定格電圧印加	ENDURANCE APPLICATION OF RATED VOLTAGE, AT 105°C FOR 2000hrs.	When the cpacitance exceed 1,000 μF, the of tan δ is increased by 0.02 for each increment of 1,000 μF or its fraction. CAPACITANCE CHANGE : LESS THAN 30% OF THE INITIAL MEASURED VALUE. DISSIPATION FACTOR : LESS THAN 200% OF THE INITIAL SPECIFIED VALUE. LEAKAGE CURRENT : LESS THAN THE INITIAL SPECIFIED VALUE.					
低温特性 (+20°Cにおける120Hzの インピーダンスに対する比) (最大値)	LOW TEMPERATURE STABILITY RATIO OF IMPEDANCE AT COLD TO THAT AT 20°C, 120Hz. MAX.VALUE	W.V	6.3	10	16	25	35
		-40°C/+20°C	3	3	3	3	3
		-55°C/+20°C	4	4	4	3	3

■寸法図/DIAGRAM OF DIMENSIONS

(単位: mm)



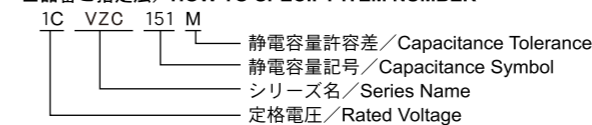
D + 0.5MAX	L ± 0.3	W ± 0.2	H ± 0.2	C ± 0.2	R	P
6.3	6	6.6	6.6	7.3	0.5 ~ 0.8	2.2
8	10.5	8.3	8.3	9.0	0.7 ~ 1.0	3.2
10	10.5	10.3	10.3	11.0	1.0 ~ 1.4	4.6

■寸法表 (φD×L) SIZE TABLE (φD×L)

μF \ WV	6.3 (0J)	10 (1A)	16 (1C)	25 (1E)	35 (1V)
68 (680)					6.3×6.0, 0.28, 300
100 (101)					6.3×6.0, 0.28, 300
150 (151)			6.3×6.0, 0.28, 300		
220 (221)		6.3×6.0, 0.28, 300	6.3×6.0, 0.28, 300		
330 (331)	6.3×6.0, 0.28, 300				
470 (471)				8×10.5, 0.08, 850	
560 (561)					10×10.5, 0.06, 1190
680 (681)			8×10.5, 0.08, 850		
820 (821)				10×10.5, 0.06, 1190	
1000 (102)		8×10.5, 0.08, 1190	10×10.5, 0.06, 1190		
1500 (152)	8×10.5, 0.08, 850	10×10.5, 0.06, 1190			
2200 (222)	10×10.5, 0.06, 1190				

Case size : φD×L (mm) | Ripple current (mA r.m.s.) (100kHz, 105°C) | Impedance (Ω) MAX. at 100kHz, 20°C

■品番ご指定法/ HOW TO SPECIFY ITEM NUMBER





●縦型チップ長寿命品

**VFHシリーズ** JIS C5101  
CE-32  
(耐洗浄品)

■特徴

・VFHシリーズは、面実装タイプの長寿命品です。

●VERTICAL CHIP LONG LIFE TYPE

**TYPE VFH** JIS C5101  
CE-32  
(Washable product)

■FEATURES

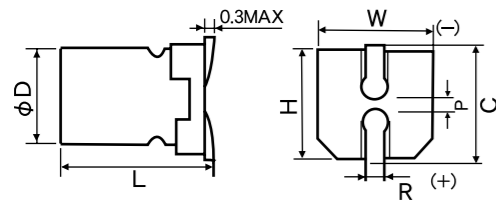
・VFH series is long life.

■性能/PERFORMANCE SPECIFICATIONS

カテゴリ温度範囲	CATEGORY TEMPERATURE RANGE	-40°C~+105°C						
標準静電容量許容差	STANDARD CAPACITANCE TOLERANCE	-20%~+20% (120Hz)						
漏れ電流 (最大値)	LEAKAGE CURRENT (MAX. VALUE)	I=0.01CV OR 3μA WHICHEVER IS THE GREATER (after 2 minutes) C=RATED CAPACITANCE (μF) V=WORKING VOLTAGE (V)						
損失角の正接 (最大値) (tan δ)	DISSIPATION FACTOR (MAX. VALUE)	W.V	6.3	10	16	25	35	50
		Tan δ	0.30	0.24	0.20	0.16	0.14	0.14
When the capacitance exceed 1,000μF, the value of tan δ is increased by 0.02 for each increment of 1,000μF or its fraction.								
耐久性 105°C 2000時間 定格電圧印加 (φ8~φ10:3000時間、φ12.5~φ16:5000時間)	ENDURANCE APPLICATION OF RATED VOLTAGE, AT 105°C FOR 2000hrs. (φ8~φ10:3000hrs, φ12.5~φ16:5000hrs)	CAPACITANCE CHANGE: LESS THAN 25% OF THE INITIAL MEASURED VALUE. DISSIPATION FACTOR: LESS THAN 250% OF THE INITIAL SPECIFIED VALUE. LEAKAGE CURRENT: LESS THAN THE INITIAL SPECIFIED VALUE.						
低温特性 (+20°Cにおける120Hzの インピーダンスに対する比 (最大値))	LOW TEMPERATURE STABILITY (RATIO OF IMPEDANCE AT COLD TO THAT AT 20°C, 120Hz. MAX. VALUE.)	W.V	6.3	10	16・25	35・50		
		-25°C/+20°C	4	3	2	2		
		-40°C/+20°C	8	6	4	3		

■寸法図/DIAGRAM OF DIMENSIONS

(単位: mm)

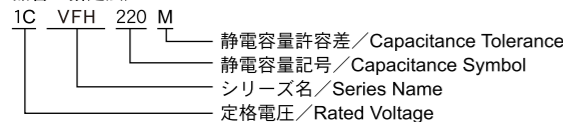


D±0.5MAX	L±0.3	W±0.2	H±0.2	C±0.2	R	P±0.2
4	6.0	4.3	4.3	5.0	0.5~0.8	1.0
5	6.0	5.3	5.3	6.0	0.5~0.8	1.4
6.3	6.0	6.6	6.6	7.3	0.5~0.8	2.2
6.3	7.7	6.6	6.6	7.3	0.5~0.8	2.2
8	10.2	8.3	8.3	9.0	0.7~1.0	3.2
10	10.2	10.3	10.3	11.0	1.0~1.4	4.6
12.5	13.5±0.5	12.8	12.8	13.5	1.0~1.4	4.6
16	16.5±0.5	16.3	16.3	17.0	1.8~2.1	7.0

■寸法表 (φD×L) SIZE TABLE (φD×L)

μF	W.V	6.3 (0J)	10 (1A)	16 (1C)	25 (1E)	35 (1V)	50 (1H)
1.0							4×6.0 7
2.2							4×6.0 11
3.3							4×6.0 13
4.7				4×6.0 13	4×6.0 15	5×6.0 19	
10			4×6.0 18	5×6.0 23	5×6.0 25	6.3×6.0 32	
22	4×6.0	22	5×6.0 27	6.3×6.0 30	6.3×6.0 42	6.3×7.7 44	6.3×7.7 60
33	5×6.0	30	5×6.0 35	6.3×6.0 44	6.3×6.0 58	6.3×7.7 77	8×10.2 140
47	5×6.0	36	6.3×6.0 46	6.3×6.0 60	6.3×7.7 91	8×10.2 150	8×10.2 150
100	6.3×6.0	67	6.3×6.0 62	6.3×7.7 95	8×10.2 150	8×10.2 160	10×10.2 220
220	6.3×7.7	105	8×10.2 175	8×10.2 175	8×10.2 195	10×10.2 290	12.5×13.5 340
330	8×10.2	195	8×10.2 195	8×10.2 210	10×10.2 290	12.5×13.5 380	
470	8×10.2	210	8×10.2 210	10×10.2 290	12.5×13.5 400		16×16.5 610
680			10×10.2 300		12.5×13.5 415		
1000	10×10.2	300		12.5×13.5 440		16×16.5 620	
1500			12.5×13.5 480		16×16.5 720		
2200	12.5×13.5	490		16×16.5 785			
3300			16×16.5 820				
4700	16×16.5	860					

■品番ご指定法/HOW TO SPECIFY ITEM NUMBER



φD×L Ripple current (mA r.m.s.) (120Hz, 105°C)

●縦型チップ低インピーダンス品

**VLHシリーズ** JIS C5101  
CE-32  
(耐洗浄品)

■特徴

・VLHシリーズは、105°C 5000Hの長寿命品です。

●VERTICAL CHIP LOW IMPEDANCE

**TYPE VLH** JIS C5101  
CE-32  
(Washable product)

■FEATURES

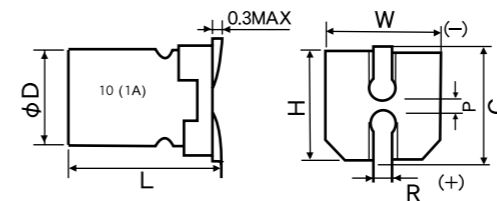
・This series is a long life (105°C 5000H).

■性能/PERFORMANCE SPECIFICATIONS

カテゴリ温度範囲	CATEGORY TEMPERATURE RANGE	-40°C~+105°C						
標準静電容量許容差	STANDARD CAPACITANCE TOLERANCE	-20+20% (120Hz)						
漏れ電流 (最大値)	LEAKAGE CURRENT (MAX. VALUE)	I=0.01CV OR 3μA A WHICHEVER IS THE GREATER (after 2 minutes) C=RATED CAPACITANCE (μF) V=WORKING VOLTAGE (V)						
損失角の正接 (最大値) (tan δ)	DISSIPATION FACTOR (MAX. VALUE)	W.V	6.3	10	16	25	35	50
		tan δ	0.32	0.24	0.2	0.16	0.13	0.12
When the capacitance exceed 1,000μF, the value of tan δ is increased by 0.02 for each increment of 1,000μF or its fraction.								
耐久性 105°C 5000時間 定格電圧印加	ENDURANCE APPLICATION OF RATED VOLTAGE, AT 105°C FOR 5000hrs.	CAPACITANCE CHANGE: LESS THAN 30% OF THE INITIAL MEASURED VALUE. DISSIPATION FACTOR: LESS THAN 300% OF THE INITIAL SPECIFIED VALUE. LEAKAGE CURRENT: LESS THAN THE INITIAL SPECIFIED VALUE.						
低温特性 (+20°Cにおける120Hzの インピーダンスに対する比 (最大値))	LOW TEMPERATURE STABILITY RATIO OF IMPEDANCE AT COLD TO THAT AT 20°C, 120Hz. MAX.VALUE	W.V	6.3	10	16	25	35	50
		-40°C/+20°C	4	3	2	2	2	2
		-55°C/+20°C	70	7	5	3	3	3

■寸法図/DIAGRAM OF DIMENSIONS

(単位: mm)

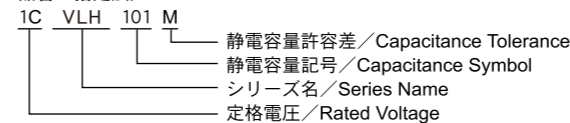


D+0.5MAX	L±0.3	W±0.2	H±0.2	C±0.2	R	P
4	6.0	4.3	4.3	5.0	0.5~0.8	1.0
5	6.0	5.3	5.3	6.0	0.5~0.8	1.4
6.3	6.0	6.6	6.6	7.3	0.5~0.8	2.2
6.3	7.7	6.6	6.6	7.3	0.5~0.8	2.2

■寸法表 (φD×L) SIZE TABLE (φD×L)

μF	W.V	6.3 (0J)	10 (1A)	16 (1C)	25 (1E)	35 (1V)	50 (1H)
1.0 (010)							4×6.0 6.2
2.2 (2R2)							4×6.0 11
3.3 (3R3)							4×6.0 14
4.7 (4R7)						4×6.0 15	5×6.0 19
10 (100)				4×6.0 18	5×6.0 25	5×6.0 25	6.3×6.0 30
22 (220)			5×6.0 30	5×6.0 30	6.3×6.0 42	6.3×6.0 42	6.3×7.7 49
33 (330)	5×6.0	35	5×6.0 35	6.3×6.0 48	6.3×6.0 48	6.3×7.7 57	
47 (470)	5×6.0	36	6.3×6.0 50	6.3×6.0 50	6.3×7.7 63		
100 (101)	6.3×6.0	60	6.3×7.7 81	6.3×7.7 95			
220 (221)	6.3×7.7	101					

■品番ご指定法/HOW TO SPECIFY ITEM NUMBER



Case size : φD×L (mm)

Ripple current (mA r.m.s.) (100kHz, 105°C)

●縦型チップ125°C長寿命品

VPCシリーズ (耐洗浄品)

■特徴

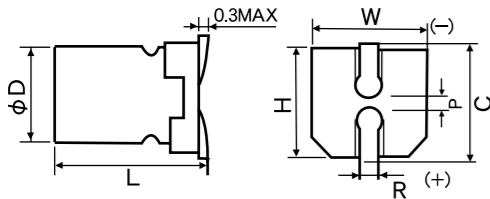
- ・VPCシリーズは、125°C 1,000~2,000時間の長寿命品です。

■性能/PERFORMANCE SPECIFICATIONS

カテゴリ温度範囲	CATEGORY TEMPERATURE RANGE	-55°C~+125°C	
静電容量許容差	STANDARD CAPACITANCE TOLERANCE	-20%~+20%	
漏れ電流(最大値)	LEAKAGE CURRENT (MAX. VALUE)	I=0.01CV 3μA WHICHEVER IS THE GRATER (after 2 minutes) C=RATED CAPACITANCE(μF) V=RATED VOLTAGE(V)	
損失角の正接(最大値) (tan δ)	DESSIPATION FACTOR (MAX.VALUE) (tan δ)	W.V.	6.3 10 16 25 35 50 63 100
		tan δ	0.30 0.24 0.20 0.16 0.14 0.14 0.12 0.10
定格静電容量が1,000μFをこえるものは、1,000μF増すごとに上記の値に0.02を加える When the capacitance exceed 1,000μF, the value of tan δ is increased by 0.02 for each increment of 1,000μF or its fraction.			
耐久 6.3~50V:2000hrs (φD=6.3 1000hrs) 63V~100V:1500hrs 125°C 定格電圧印加	ENDURANCE 6.3~50V:2000hrs (φD=6.3 1000hrs) 63V~100V:1500hrs APPLICATION OF RATED VOLTAGE AT 125°C	CAPACITANCE CHANGE: LESS THAN 30% OF THE INITIAL MEASURED VALUE DISSIPATION FACTOR: LESS THAN 200% OF THE INITIAL SPECIFIED VALUE LEAKAGE CURRENT: LESS THAN THE INITIAL SPECIFIED VALUE	

■寸法図/DIAGRAM OF DIMENSIONS

(Unit : mm)



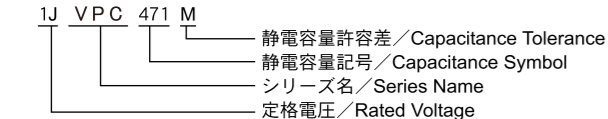
D+0.5max	L±0.3	W±0.2	H±0.2	C±0.2	R	P±0.2
6.3	6.0	6.6	6.6	7.3	0.5~0.8	2.2
6.3	7.7	6.6	6.6	7.3	0.5~0.8	2.2
8	10.2	8.3	8.3	9.0	0.7~1.0	3.2
10	10.2	10.3	10.3	11.0	1.0~1.4	4.6
12.5	13.5±0.5	12.8	12.8	13.5	1.0~1.4	4.6
16	16.5±0.5	16.3	16.3	17.3	1.8~2.1	7.0

■標準品一覧表/STANDARD PRODUCT TABLE

μF	W.V	6.3 (0J)	10 (1A)	16 (1C)	25 (1E)	35 (1V)	50 (1H)	63 (1J)	100 (2A)
1.0							6.3×6.0 3.5 45		
2.2							6.3×6.0 3.5 45		
3.3							6.3×6.0 3.5 45		
4.7							6.3×6.0 3.5 45		
10						6.3×6.0 2.0 60	6.3×6.0 2.8 50		
22						6.3×6.0 1.6 70	6.3×6.0 2.8 50	8×10.2 1.0 70	
33					6.3×6.0 1.6 70	6.3×7.7 2.0 80	6.3×7.7 2.0 80	8×10.2 1.0 100	10×10.2 0.8 115
47			6.3×6.0 1.6 70	6.3×6.0 1.6 70	6.3×7.7 0.9 110	6.3×7.7 0.9 110	8×10.2 0.7 140	8×10.2 1.0 100	12.5×13.5 0.33 350
100	6.3×6.0 1.6 70	6.3×7.7 0.9 110	6.3×7.7 0.9 110	8×10.2 0.4 160	8×10.2 0.4 160	8×10.2 0.4 160	10×10.2 0.5 240	10×10.2 0.5 150	16×16.5 0.24 500
220	6.3×7.7 0.9 110	6.3×7.7 0.9 110	8×10.2 0.4 160	8×10.2 0.4 160	10×10.2 0.3 220	10×10.2 0.3 220	12.5×13.5 0.23 490	12.5×13.5 0.25 350	
330	8×10.2 0.4 160	8×10.2 0.4 160	10×10.2 0.3 220	10×10.2 0.3 220	12.5×13.5 0.12 550	12.5×13.5 0.12 550	12.5×13.5 0.23 490	16×16.5 0.18 500	
470	8×10.2 0.4 160	10×10.2 0.3 220	12.5×13.5 0.12 550	12.5×13.5 0.12 550	16×16.5 0.08 900	16×16.5 0.15 800	16×16.5 0.15 800	16×16.5 0.18 500	
680	10×10.2 0.3 220	12.5×13.5 0.12 550	12.5×13.5 0.12 550	12.5×13.5 0.12 550	16×16.5 0.08 900	16×16.5 0.08 900			
1000	12.5×13.5 0.12 550	12.5×13.5 0.12 550	12.5×13.5 0.12 550	16×16.5 0.08 900	16×16.5 0.08 900				
1500	12.5×13.5 0.12 550	12.5×13.5 0.12 550	16×16.5 0.08 900	16×16.5 0.08 900					
2200	12.5×13.5 0.12 550	16×16.5 0.08 900	16×16.5 0.08 900						
3300	16×16.5 0.08 900								
4700	16×16.5 0.08 900								

Case size: φD×L (mm)      ESR (Ω) Max at 100kHz, 20°C      Ripple current (mA r.m.s.) (100kHz, 125°C)

■品番指定法/HOW TO SPECIFY ITEM NUMBER



●縦型チップ125°C長寿命品

VPHシリーズ (耐洗浄品)

■特徴

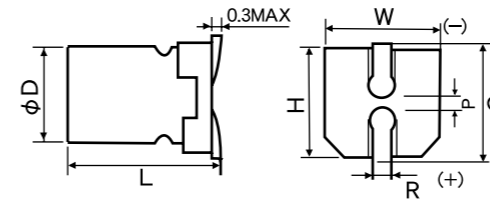
- ・VPHシリーズは、125°C 2,000~3,000時間の長寿命品です。
- ・高リップル、大容量品です。

■性能/PERFORMANCE SPECIFICATIONS

カテゴリ温度範囲	CATEGORY TEMPERATURE RANGE	-40°C~+125°C	
静電容量許容差	STANDARD CAPACITANCE TOLERANCE	-20%~+20%	
漏れ電流(最大値)	LEAKAGE CURRENT (MAX. VALUE)	I=0.01CV IS THE GRATER (after 2 minutes) C=RATED CAPACITANCE(μF) V=RATED VOLTAGE(V)	
損失角の正接(最大値) (tan δ)	DESSIPATION FACTOR (MAX.VALUE) (tan δ)	W.V.	16 25 35
		tan δ	0.20 0.16 0.14
定格静電容量が1,000μFをこえるものは、1,000μF増すごとに上記の値に0.02を加える When the capacitance exceed 1,000μF, the value of tan δ is increased by 0.02 for each increment of 1,000μF or its fraction.			
耐久 φ8~φ12.5 : 2000時間 φ16, φ18 : 3000時間 125°C 定格電圧印加	ENDURANCE φ8~φ12.5 : 2000hrs φ16, φ18 : 3000hrs APPLICATION OF RATED VOLTAGE AT 125°C	CAPACITANCE CHANGE: LESS THAN 30% OF THE INITIAL MEASURED VALUE DISSIPATION FACTOR: LESS THAN 300% OF THE INITIAL SPECIFIED VALUE LEAKAGE CURRENT: LESS THAN THE INITIAL SPECIFIED VALUE	

■寸法図/DIAGRAM OF DIMENSIONS

(Unit : mm)



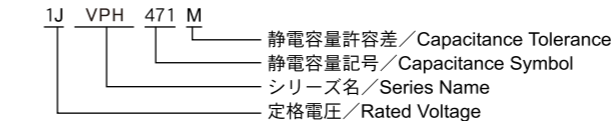
D+0.5max	L±0.2	H±0.2	C±0.2	R	P±0.2
8	10.5±0.3	8.3	9.0	0.7~1.0	3.2
10	10.5±0.3	10.3	11.0	1.0~1.4	4.6
12.5	13.5±0.5	12.8	13.5	1.0~1.4	4.6
16	16.5±0.5	16.3	17.3	1.8~2.1	7.0
18	16.5±1.0	19.0	20.0	1.7~2.1	7.0
18	21.5±0.5	19.0	20.0	1.7~2.1	7.0

■標準品一覧表/STANDARD PRODUCT TABLE

μF \ W.V	16(1C)				25(1E)				35(1V)				
100										8×10.5	0.18	3.0	300
160										8×10.5	0.18	3.0	300
220						8×10.5	0.18	3.0	300	10×10.5	0.11	2.0	500
270						8×10.5	0.18	3.0	300				
300										10×10.5	0.11	2.0	500
330	8×10.5	0.18	3.0	300	10×10.5	0.11	2.0	500	12×13.5	0.08	1.0	1200	
390	8×10.5	0.18	3.0	300									
470	10×10.5	0.11	2.0	500	10×10.5	0.11	2.0	500	12×13.5	0.08	1.0	1200	
620										12×13.5	0.08	1.0	1200
680	10×10.5	0.11	2.0	500	12.5×13.5	0.08	1.0	1200	16×16.5	0.05	0.5	1800	
910					12.5×13.5	0.08	1.0	1200					
1000	12.5×13.5	0.08	1.0	1200	16×16.5	0.05	0.5	1800	16×16.5	0.05	0.5	1800	
1500	12.5×13.5	0.08	1.0	1200	16×16.5	0.05	0.5	1800	18×16.5	0.045	0.45	2000	
2200	16×16.5	0.05	0.5	1800	18×16.5	0.045	0.45	2000	18×16.5	0.04	0.4	2200	
3300	18×16.5	0.045	0.45	2000	18×21.5	0.04	0.4	2200					
3900	18×21.5	0.04	0.4	2200									

Case size: φD×L (mm)      ESR (Ω) Max at 100kHz, 20°C      ESR (Ω) Max at 100kHz, -40°C      Ripple current (mA r.m.s.) (100kHz, 125°C)

■品番指定法/HOW TO SPECIFY ITEM NUMBER





●低インピーダンス品  
**UCE** シリーズ

JIS C 5101  
CE-04

●LOW-IMPEDANCE TYPE  
TYPE **UCE**

JIS C 5101  
CE-04

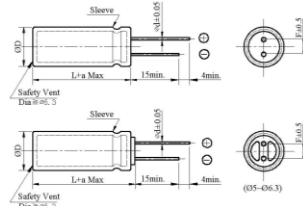
■特徴

- ・高周波超低インピーダンスを実現。
- ・105°C 2000~3000時間を保証。
- ・基板洗浄タイプではありません。

■FEATURES

- ・This product is Ultra-low-impedance for high-frequency.
- ・This product is the guaranteed service life of 2,000~3,000 hours at 105°C.
- ・Not washable product.

■寸法図/DIAGRAM OF DIMENSIONS



ΦD	5	6.3	8	10	12.5	16	18
ΦD	ΦD + 0.5Max						
Φd	0.5	0.5	0.6	0.6	0.6	0.8	0.8
F	2.0	2.5	3.5	5.0	5.0	7.5	7.5
a	L + 1.5Max				≤ 35L+1.5Max ≥ 40L+2.0Max	L + 1.5Max	

■性能/PERFORMANCE SPECIFICATIONS

カテゴリ温度範囲	CATEGORY TEMPERATURE RANGE	-40 ~ +105°C														
標準静電容量許容差	STANDARD CAPACITANCE TOLERANCE	-20 ~ +20%														
漏れ電流 (最大値)	LEAKAGE CURRENT(MAX.VALUE)	I=0.01CV OR 3μA WHICHEVER C=RATED CAPACITANCE(μF) IS THE GREATER (after 2 minutes) V=WORKING VOLTAGE(V)														
損失角の正接 (最大値) (tan δ)	DISSIPATION FACTOR(MAX.VALUE) (tan δ)	<table border="1"> <tr> <td>W.V</td> <td>6.3</td> <td>10</td> <td>16</td> <td>25</td> <td>35</td> <td>50</td> </tr> <tr> <td>tan δ</td> <td>0.22</td> <td>0.19</td> <td>0.16</td> <td>0.14</td> <td>0.12</td> <td>0.10</td> </tr> </table> <p>The above values should be increased by 0.02 for every additional 1000μF</p>	W.V	6.3	10	16	25	35	50	tan δ	0.22	0.19	0.16	0.14	0.12	0.10
W.V	6.3	10	16	25	35	50										
tan δ	0.22	0.19	0.16	0.14	0.12	0.10										
耐久性 Φ5~8 2000Hr Φ10以上3000Hr	ENDURANCE APPLICATION OF RATED OPERATING COLTAGE AT 105°C FOR 3000HOURS. Φ5~8: 2000Hr	<p>The following specifications shall be satisfied when the capacitors are restored to 25°C after subjected to DC voltage with the rated ripple current is applied for 3,000 ( Φ5~8 : 2000 ) hours at 105°C</p> <table border="1"> <tr> <td>Capacitance change</td> <td>≤ ±25% of the initial value</td> </tr> <tr> <td>Dissipation factor(tanδ)</td> <td>≤ 200% of the specified value</td> </tr> <tr> <td>Leakage current</td> <td>≤ specified value</td> </tr> </table>	Capacitance change	≤ ±25% of the initial value	Dissipation factor(tanδ)	≤ 200% of the specified value	Leakage current	≤ specified value								
Capacitance change	≤ ±25% of the initial value															
Dissipation factor(tanδ)	≤ 200% of the specified value															
Leakage current	≤ specified value															
高温無負荷特性 電圧を印加しないで 105°C 1,000時間放置	ENDURANCE APPLICATION OF WITHOUT VOLTAGE FOR 1,000HOURS.	<table border="1"> <tr> <td>Capacitance Change</td> <td>Within ±25% of the initial value</td> </tr> <tr> <td>Dissipation Factor</td> <td>Less than 200% of the initial specification value</td> </tr> <tr> <td>Leakage Current</td> <td>Less than 200% of the initial specification value</td> </tr> </table>	Capacitance Change	Within ±25% of the initial value	Dissipation Factor	Less than 200% of the initial specification value	Leakage Current	Less than 200% of the initial specification value								
Capacitance Change	Within ±25% of the initial value															
Dissipation Factor	Less than 200% of the initial specification value															
Leakage Current	Less than 200% of the initial specification value															
その他の特性はJIS C 5101-4に準ずる	THE OTHER CHARACTERISTICS	THE OTHER CHARACTERISTICS ARE BASED ON JIS C 5101-4.														

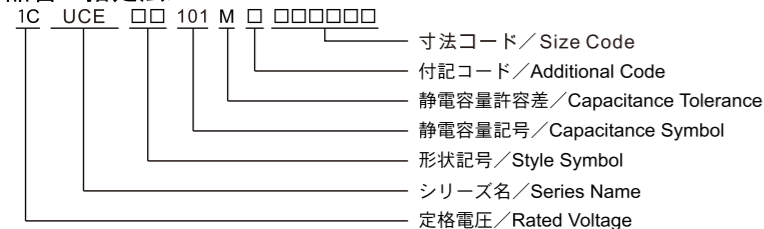
■定格リップル電流補正係数

リップル周波数が標準品一覧表の規定値と異なる場合には、下表の係数を乗じた値以下でご使用下さい。  
When the ripple frequency differs from the spicification shown in the list of standard products, multiply the value with the coefficient shown below, and use the products under the obtained value.

周波数補正係数/FREQUENCY CORRECTION FACTOR

Vdc	Frequency(Hz)				
	50/60	120	1K	10K	100K
6.3~16	0.60	0.75	0.90	0.98	1.00
25~50	0.50	0.62	0.85	0.95	1.00

■品番ご指定法/HOW TO SPECIFY ITEM NUMBER



■寸法表/CASE SIZE TABLE

Nominal Capacitance (uF)	Case Size ΦD×L (mm)	6.3V			10V			16V				
		Impedance (Ωmax/100kHz)		Max. Rated ripple current @105°C100kHz (mA rms)	Impedance (Ωmax/100kHz)		Max. Rated ripple current @105°C100kHz (mA rms)	Impedance (Ωmax/100kHz)		Max. Rated ripple current @105°C100kHz (mA rms)		
		20°C	-10°C		20°C	-10°C		20°C	-10°C			
100	5×11	1.780	2.690	175	5×11	1.480	2.480	250	6.3×11	1.280	2.160	290
220	6.3×11	0.880	1.760	280	6.3×11	0.580	1.660	405	8×11.5	0.460	1.560	410
330	6.3×11	0.450	1.320	405	8×11.5	0.380	1.280	500	8×11.5	0.280	1.080	760
470	8×11.5	0.110	0.380	560	8×11.5	0.072	0.220	760	8×15	0.056	0.170	995
560	8×11.5	0.072	0.220	760	8×15	0.069	0.200	805	8×20	0.052	0.160	1050
680	8×11.5	0.068	0.210	800	8×15	0.056	0.170	995	10×16	0.038	0.120	1430
820	8×15	0.056	0.170	995	8×20	0.052	0.160	1050	10×20	0.035	0.110	1520
1000	8×15	0.053	0.160	1030	8×20	0.041	0.130	1250	10×20	0.023	0.069	1820
1200	8×20	0.041	0.130	1250	10×20	0.023	0.069	1820	10×25	0.022	0.066	2150
1500	10×20	0.023	0.069	1820	10×25	0.022	0.066	2150	12.5×20	0.021	0.053	2360
2200	10×25	0.022	0.066	2150	12.5×20	0.021	0.053	2360	12.5×25	0.018	0.045	2770
2700	10×30	0.022	0.066	2200	12.5×20	0.021	0.053	2395	12.5×30	0.016	0.041	3290
3300	12.5×20	0.021	0.053	2360	12.5×25	0.018	0.045	2770	12.5×35	0.015	0.039	3400
3900	12.5×25	0.018	0.045	2770	12.5×30	0.016	0.041	3290	16×25	0.016	0.043	3460
4700	12.5×30	0.016	0.041	3290	12.5×35	0.015	0.039	3400	16×31.5	0.016	0.043	3500
5600	12.5×35	0.015	0.039	3400	12.5×40	0.016	0.043	3460	16×35.5	0.015	0.042	3540
6800	12.5×40	0.016	0.043	3460	16×31.5	0.017	0.040	3500	16×40	0.015	0.040	3585

■Impedance[Max.Value Ω] at 20°C 100kHz

■Ripple Current [Max. value mA] at 105°C 100kHz

Nominal Capacitance (uF)	Case Size ΦD×L (mm)	25V			35V			50V				
		Impedance (Ωmax/100kHz)		Max. Rated ripple current @105°C100kHz (mA rms)	Impedance (Ωmax/100kHz)		Max. Rated ripple current @105°C100kHz (mA rms)	Impedance (Ωmax/100kHz)		Max. Rated ripple current @105°C100kHz (mA rms)		
		20°C	-10°C		20°C	-10°C		20°C	-10°C			
56	6.3×11	0.880	0.900	270	6.3×11	0.760	1.240	405	8×11.5	0.640	1.400	385
68	6.3×11	0.660	0.850	290	8×11.5	0.560	0.760	430	8×11.5	0.480	0.900	405
100	6.3×11	0.430	0.500	405	8×11.5	0.380	0.560	450	8×11.5	0.220	0.630	724
150	8×11.5	0.120	0.400	415	8×11.5	0.072	0.220	760	8×15	0.061	0.180	979
220	8×11.5	0.072	0.220	760	8×15	0.056	0.170	995	10×16	0.042	0.120	1370
330	8×15	0.056	0.170	995	10×16	0.038	0.120	1430	10×25	0.028	0.085	1870
470	10×16	0.038	0.120	1430	10×20	0.023	0.069	1820	12.5×20	0.027	0.068	2050
560	10×20	0.035	0.110	1505	10×25	0.022	0.066	2150	12.5×25	0.023	0.059	2410
680	10×20	0.023	0.069	1820	12.5×20	0.021	0.053	2360	12.5×30	0.021	0.052	2860
820	10×25	0.022	0.066	2150	12.5×20	0.020	0.052	2410	12.5×35	0.019	0.051	2960
1000	12.5×20	0.021	0.053	2360	12.5×25	0.018	0.045	2770	16×25	0.021	0.056	3010
1200	12.5×25	0.021	0.053	2400	12.5×30	0.016	0.041	3290				
1500	12.5×25	0.018	0.045	2770	12.5×35	0.015	0.039	3400				
2200	12.5×35	0.015	0.039	3400	16×31.5	0.015	0.039	3500				
2700	16×25	0.016	0.043	3460								

●低インピーダンス品  
UCVシリーズ

JIS C 5101  
CE-04

●LOW-IMPEDANCE TYPE  
TYPE UCV

JIS C 5101  
CE-04

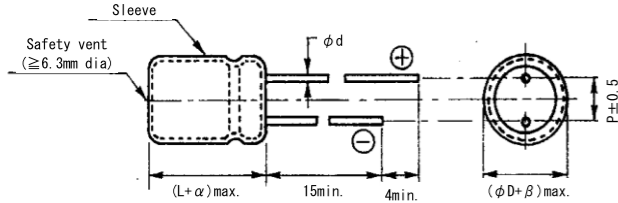
■特徴

- ・高周波超低インピーダンスを実現。
- ・105°C 3,000~6,000時間を保証。
- ・基板洗浄タイプではありません。

■FEATURES

- ・This product is Ultra-low-impedance for high-frequency.
- ・This product is the guaranteed service life of 3,000~6,000 hours at 105°C.
- ・Not washable product.

■寸法図/DIAGRAM OF DIMENSIONS



ΦD	5	6.3	8	10	12.5		16	18
					L<35	L≥35		
F	2	2.5	3.5	5.0	5.0	5.0	7.5	7.5
φd	0.5	0.5	0.6	0.6	0.6	0.8	0.8	0.8
α	1.5	1.5	1.5	1.5	≤35L:1.5, ≥40L:2.0		1.5	1.5
β	0.5							

■性能/PERFORMANCE SPECIFICATIONS

カテゴリ温度範囲	CATEGORY TEMPERATURE RANGE	-40 ~ +105°C												
標準静電容量許容差	STANDARD CAPACITANCE TOLERANCE	-20 ~ +20%												
漏れ電流(最大値)	LEAKAGE CURRENT(MAX.VALUE)	I=0.01CV OR 3μA WHICHEVER C=RATED CAPACITANCE(μF) IS THE GREATER (after 2 minutes) V=WORKING VOLTAGE(V)												
損失角の正接(最大値) (tan δ)	DISSIPATION FACTOR(MAX.VALUE) (tan δ)	<table border="1"> <tr> <th>W.V</th> <th>6.3</th> <th>10</th> <th>16</th> <th>25</th> <th>35</th> </tr> <tr> <td>tan δ</td> <td>0.22</td> <td>0.19</td> <td>0.16</td> <td>0.14</td> <td>0.12</td> </tr> </table> <p>When the capacitance exceed 1,000 μF, the value of tan δ is increased by 0.02 for each increment of 1,000 μF or its fraction.</p>	W.V	6.3	10	16	25	35	tan δ	0.22	0.19	0.16	0.14	0.12
W.V	6.3	10	16	25	35									
tan δ	0.22	0.19	0.16	0.14	0.12									
耐久性 105°C 6,000時間 定格使用電圧印加 φ6.3:3000時間, φ8:4000時間 φ10:5000時間	ENDURANCE APPLICATION OF RATED OPERATING VOLTAGE, AT 105°C FOR 6,000HOURS. φ6.3: 3000Hr, φ8: 4000Hr φ10: 5000Hr	<table border="1"> <tr> <td>Capacitance Change</td> <td>Within ±25% of the initial value</td> </tr> <tr> <td>Dissipation Factor</td> <td>Less than 200% of the initial specification value</td> </tr> <tr> <td>Leakage Current</td> <td>Less than the initial specification value</td> </tr> </table>	Capacitance Change	Within ±25% of the initial value	Dissipation Factor	Less than 200% of the initial specification value	Leakage Current	Less than the initial specification value						
Capacitance Change	Within ±25% of the initial value													
Dissipation Factor	Less than 200% of the initial specification value													
Leakage Current	Less than the initial specification value													
高温無負荷特性 電圧を印加しないで 105°C 1,000時間放置	ENDURANCE APPLICATION OF WITHOUT VOLTAGE FOR 1,000HOURS.	<table border="1"> <tr> <td>Capacitance Change</td> <td>Within ±25% of the initial value</td> </tr> <tr> <td>Dissipation Factor</td> <td>Less than 200% of the initial specification value</td> </tr> <tr> <td>Leakage Current</td> <td>Less than 200% of the initial specification value</td> </tr> </table>	Capacitance Change	Within ±25% of the initial value	Dissipation Factor	Less than 200% of the initial specification value	Leakage Current	Less than 200% of the initial specification value						
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Dissipation Factor	Less than 200% of the initial specification value													
Leakage Current	Less than 200% of the initial specification value													
その他の特性はJIS C 5101-4に準ずる	THE OTHER CHARACTERISTICS	THE OTHER CHARACTERISTICS ARE BASED ON JIS C 5101-4.												

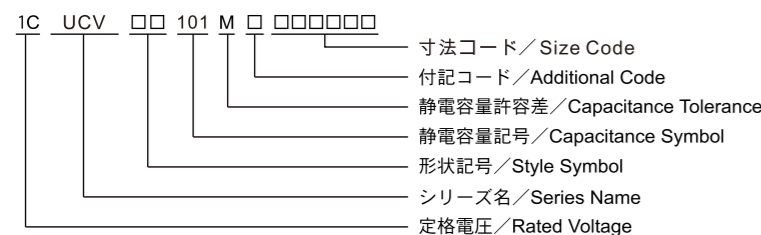
■定格リプル電流補正係数

リプル周波数が標準品一覧表の規定値と異なる場合には、下表の係数を乗じた値以下でご使用下さい。  
When the ripple frequency differs from the spicification shown in the list of standard products, multiply the value with the coefficient shown below, and use the products under the obtained value.

周波数補正係数/FREQUENCY CORRECTION FACTOR

Cap.(μF)	Frequency (Hz)			
	120	1K	10K	100K
10~68	0.30	0.55	0.80	1.00
82~220	0.40	0.60	0.85	1.00
330~820	0.50	0.65	0.90	1.00
1000~8200	0.60	0.70	0.95	1.00

■品番ご指定法/HOW TO SPECIFY ITEM NUMBER



■寸法表/CASE SIZE TABLE

W.V (Vdc)	Cap. (μF)	φD×L (mm)	Impedance	Ripple Current
6.3	220	5×11	0.230	360
	330	6.3×11	0.100	460
	470	6.3×11	0.100	550
	680	8×11.5	0.059	860
	820	8×11.5	0.059	990
	1000	10×12.5	0.043	1250
	1200	8×15	0.046	1330
	1200	10×12.5	0.043	1360
	1500	8×20	0.031	1550
	1800	10×16	0.030	1815
	2200	10×20	0.019	2160
	2700	10×25	0.017	2475
	3300	12.5×20	0.016	2500
	3900	12.5×20	0.016	2725
	4700	12.5×25	0.014	3190
	5600	12.5×35	0.012	3795
6800	12.5×35	0.011	3925	
6800	16×20	0.014	3575	
8200	16×25	0.012	3990	
10	150	5×11	0.230	360
	220	6.3×11	0.100	450
	330	6.3×11	0.100	550
	470	8×11.5	0.059	820
	680	8×11.5	0.059	990
	820	10×12.5	0.043	1250
	1000	10×16	0.039	1450
	1200	10×16	0.030	1650
	1500	8×20	0.031	1550
	1500	10×16	0.030	1815
	1800	10×20	0.019	2160
	2200	10×25	0.017	2475
	2700	12.5×20	0.016	2600
	3300	12.5×20	0.016	2725
	3900	12.5×25	0.014	3190
	4700	12.5×30	0.012	3795
4700	16×20	0.014	3575	
5600	12.5×35	0.011	3925	
6800	16×25	0.012	3990	
16	100	5×11	0.230	360
	150	6.3×11	0.100	450
	220	6.3×11	0.100	550
	330	8×11.5	0.059	830
	470	8×11.5	0.059	990
	680	8×15	0.046	1330
	680	10×12.5	0.043	1360
	820	10×16	0.030	1650
	1000	8×20	0.031	1550
	1000	10×16	0.030	1815
	1200	10×20	0.019	1930
	1500	10×20	0.019	2160
	1800	10×25	0.017	2475
	2200	12.5×20	0.016	2725
	2700	12.5×25	0.014	3190
	3300	12.5×30	0.012	3795
3300	16×20	0.014	3575	
3900	12.5×35	0.011	3925	
4700	16×25	0.012	3990	

■Impedance[Max.Value Ω] at 20°C 100kHz

■Ripple Current [Max. value mA] at 105°C 100kHz

W.V (Vdc)	Cap. (μF)	φD×L (mm)	Impedance	Ripple Current
25	10	5×11	0.650	300
	68	5×11	0.230	360
	100	6.3×11	0.100	450
	150	8×11.5	0.100	550
	220	8×15	0.059	810
	270	8×11.5	0.059	900
	330	8×11.5	0.059	990
	390	8×15	0.046	1330
	470	10×12.5	0.043	1360
	560	8×20	0.031	1550
	680	10×16	0.030	1815
	820	10×20	0.019	2160
	1000	10×25	0.017	2475
	1200	12.5×20	0.016	2570
	1500	12.5×20	0.016	2725
	1800	12.5×25	0.014	3190
2200	12.5×30	0.012	3795	
2200	16×20	0.014	3575	
2700	12.5×35	0.011	3925	
3300	16×25	0.012	3990	
35	10	5×11	0.840	360
	47	5×11	0.230	390
	68	6.3×11	0.100	450
	100	6.3×11	0.100	550
	150	8×11.5	0.059	820
	220	8×11.5	0.059	990
	220	8×15	0.048	1200
	270	8×15	0.046	1330
	330	10×12.5	0.043	1360
	390	8×20	0.031	1550
	470	10×16	0.030	1815
	560	10×20	0.019	2160
	680	10×25	0.017	2475
	820	12.5×20	0.016	2725
	1000	12.5×20	0.016	2920
	1200	12.5×25	0.014	3190
1500	12.5×30	0.012	3795	
1500	16×20	0.014	3575	
1800	12.5×35	0.011	3925	
2200	16×25	0.012	3990	

●低インピーダンス品  
**UCY** シリーズ

JIS C 5101  
CE-04

●LOW-IMPEDANCE TYPE

TYPE **UCY**

JIS C 5101  
CE-04

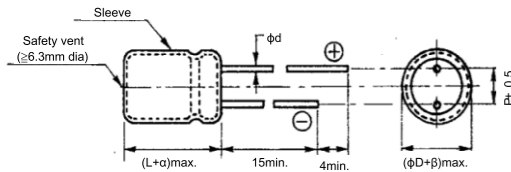
■特徴

- ・高周波超低インピーダンスを実現。
- ・105°C 6,000~10,000時間を保証。
- ・基板洗浄タイプではありません。

■FEATURES

- ・This product is Ultra-low-impedance for high-frequency.
- ・This product is the guaranteed service life of 6,000~10,000 hours at 105°C.
- ・Not washable product.

■寸法図/DIAGRAM OF DIMENSIONS



ΦD	5	6.3	8	10	12.5		16	18
					L < 35	L ≥ 35		
F	2	2.5	3.5	5.0	5.0	5.0	7.5	7.5
φd	0.5	0.5	0.6	0.6	0.6	0.8	0.8	0.8
α	1.5	1.5	1.5	1.5	≤35L:1.5, ≥40L:2.0		1.5	1.5
β	0.5							

■性能/PERFORMANCE SPECIFICATIONS

カテゴリ温度範囲	CATEGORY TEMPERATURE RANGE	-40 ~ +105°C																				
標準静電容量許容差	STANDARD CAPACITANCE TOLERANCE	-20 ~ +20%																				
漏れ電流 (最大値)	LEAKAGE CURRENT(MAX.VALUE)	I=0.01CV OR 3μA WHICHEVERC=RATED CAPACITANCE(μF) IS THE GREATER (after 2 minutes) V=WORKING VOLTAGE(V)																				
損失角の正接 (最大値) (tan δ)	DISSIPATION FACTOR(MAX.VALUE) (tan δ)	<table border="1"> <tr> <th>W.V</th> <td>6.3</td><td>10</td><td>16</td><td>25</td><td>35</td><td>50</td><td>63</td><td>80</td><td>100</td> </tr> <tr> <th>tan δ</th> <td>0.22</td><td>0.19</td><td>0.16</td><td>0.14</td><td>0.12</td><td>0.10</td><td>0.09</td><td>0.09</td><td>0.08</td> </tr> </table> <p>When the capacitance exceed 1,000 μF, the value of tan δ is increased by 0.02 for each increment of 1,000 μF or its fraction.</p>	W.V	6.3	10	16	25	35	50	63	80	100	tan δ	0.22	0.19	0.16	0.14	0.12	0.10	0.09	0.09	0.08
W.V	6.3	10	16	25	35	50	63	80	100													
tan δ	0.22	0.19	0.16	0.14	0.12	0.10	0.09	0.09	0.08													
耐久性能 105°C 10,000時間 定格使用電圧印加 (φD ≤ 6.3: 6000時間, φ8: 8000時間)	ENDURANCE APPLICATION OF RATED OPERATING VOLTAGE. AT 105°C FOR 10,000HOURS. (φD ≤ 6.3: 6000Hr, φ8: 8000Hr)	<table border="1"> <tr> <td>Capacitance Change</td> <td>Within ±25% of the initial value</td> </tr> <tr> <td>Dissipation Factor</td> <td>Less than 200% of the initial specification value</td> </tr> <tr> <td>Leakage Current</td> <td>Less than the initial specification value</td> </tr> </table>	Capacitance Change	Within ±25% of the initial value	Dissipation Factor	Less than 200% of the initial specification value	Leakage Current	Less than the initial specification value														
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Leakage Current	Less than the initial specification value																					
高温無負荷特性 電圧を印加しないで 105°C 1,000時間放置	ENDURANCE APPLICATION OF WITHOUT VOLTAGE FOR 1,000HOURS.	<table border="1"> <tr> <td>Capacitance Change</td> <td>Within ±25% of the initial value</td> </tr> <tr> <td>Dissipation Factor</td> <td>Less than 200% of the initial specification value</td> </tr> <tr> <td>Leakage Current</td> <td>Less than 200% of the initial specification value</td> </tr> </table>	Capacitance Change	Within ±25% of the initial value	Dissipation Factor	Less than 200% of the initial specification value	Leakage Current	Less than 200% of the initial specification value														
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その他の特性はJIS C 5101-4に準ずる	THE OTHER CHARACTERISTICS	THE OTHER CHARACTERISTICS ARE BASED ON JIS C 5101-4.																				

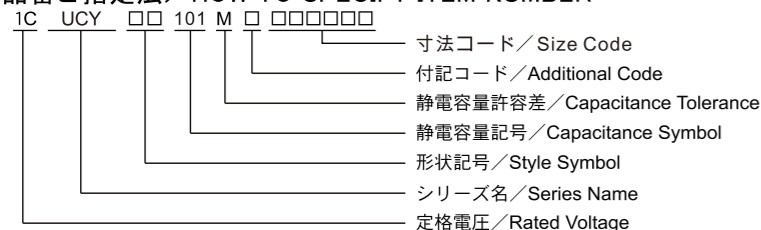
■定格リップル電流補正係数

リップル周波数が標準品一覧表の規定値と異なる場合には、下表の係数を乗じた値以下でご使用下さい。  
When the ripple frequency differs from the spicification shown in the list of standard products, multiply the value with the coefficient shown below, and use the products under the obtained value.

周波数補正係数/FREQUENCY CORRECTION FACTOR

Cap.(μF)	Frequency (Hz)			
	120	1K	10K	100K
10~180	0.40	0.75	0.90	1.00
220~560	0.50	0.85	0.94	1.00
680~1800	0.60	0.87	0.95	1.00
2200~3900	0.75	0.90	0.95	1.00
4700~18000	0.85	0.95	0.98	1.00

■品番ご指定法/HOW TO SPECIFY ITEM NUMBER



■寸法表/CASE SIZE TABLE

W.V (Vdc)	Cap. (μF)	φD × L (mm)	Impedance	Ripple Current	
6.3	100	5 × 11	0.650	155	
	150	5 × 11	0.580	210	
	220	6.3 × 11	0.400	255	
	330	6.3 × 11	0.220	340	
	470	8 × 11.5	0.180	400	
	680	8 × 11.5	0.130	640	
	820	10 × 12.5	0.080	865	
	1000	8 × 15	0.087	840	
	1200	8 × 20	0.069	1050	
	1200	10 × 16	0.060	1210	
	1500	10 × 20	0.046	1400	
	1800	12.5 × 16	0.049	1450	
	2200	10 × 25	0.042	1650	
	2700	10 × 30	0.031	1910	
	3300	12.5 × 20	0.035	1900	
	6.3	3900	12.5 × 25	0.027	2230
4700		12.5 × 30	0.024	2650	
5600		16 × 20	0.027	2530	
6800		16 × 25	0.021	2930	
6800		18 × 20	0.026	2860	
8200		16 × 31.5	0.017	3450	
10000		16 × 35.5	0.015	3610	
10000		18 × 25	0.019	3140	
12000		16 × 40	0.013	4080	
12000		18 × 31.5	0.015	4170	
15000		18 × 35.5	0.014	4220	
18000		18 × 40	0.012	4280	
10		100	5 × 11	0.580	210
		150	5 × 11	0.400	255
		220	6.3 × 11	0.220	340
		330	6.3 × 11	0.180	400
	470	8 × 11.5	0.130	640	
	680	8 × 15	0.087	840	
	820	10 × 12.5	0.085	875	
	1000	8 × 20	0.069	1050	
	1200	10 × 20	0.046	1400	
	1500	10 × 25	0.042	1650	
	1800	12.5 × 16	0.040	1780	
	2200	10 × 30	0.031	1910	
	2700	12.5 × 20	0.035	2210	
	3300	12.5 × 25	0.027	2230	
	3900	12.5 × 30	0.024	2650	
	4700	12.5 × 35	0.020	2880	
10	5600	16 × 25	0.021	2930	
	6800	16 × 31.5	0.017	3450	
	6800	18 × 25	0.019	3140	
	8200	16 × 35.5	0.015	3610	
	10000	16 × 40	0.013	4080	
	10000	18 × 35.5	0.014	4220	
	12000	18 × 40	0.012	4280	
	16	56	5 × 11	0.580	210
		100	5 × 11	0.400	255
		120	6.3 × 11	0.220	340
		150	6.3 × 11	0.180	400
		220	6.3 × 11	0.150	500
		330	8 × 11.5	0.130	640
		470	8 × 15	0.087	840
		470	10 × 12.5	0.080	865
	16	680	8 × 20	0.069	1050
680		10 × 16	0.060	1210	

■Impedance [Max. Value Ω] at 20°C 100kHz  
■Ripple Current [Max. value mA] at 105°C 100kHz

W.V (Vdc)	Cap. (μF)	φD × L (mm)	Impedance	Ripple Current
16	820	10 × 16	0.055	1300
	1000	10 × 20	0.046	1400
	1200	10 × 25	0.042	1650
	1500	10 × 30	0.031	1910
	1500	12.5 × 20	0.035	1900
	1800	12.5 × 20	0.032	2070
	2200	12.5 × 25	0.027	2230
	2700	12.5 × 30	0.024	2650
	3300	12.5 × 35	0.020	2880
	3900	16 × 25	0.017	3350
	4700	16 × 31.5	0.017	3450
	5600	16 × 35.5	0.015	3610
	6800	16 × 40	0.013	4080
	8200	18 × 35.5	0.014	4220
	10000	18 × 40	0.012	4280
	25	47	5 × 11	0.580
56		5 × 11	0.400	255
100		6.3 × 11	0.220	340
120		6.3 × 11	0.180	400
150		6.3 × 11	0.150	500
220		8 × 11.5	0.130	640
330		8 × 15	0.087	840
470		8 × 20	0.069	1050
470		10 × 16	0.060	1210
680		10 × 20	0.046	1400
680		12.5 × 16	0.049	1450
820		10 × 25	0.042	1650
1000		10 × 30	0.031	1910
1000		12.5 × 20	0.035	1900
1200		12.5 × 25	0.035	2210
1500		12.5 × 25	0.027	2230
1800	12.5 × 30	0.024	2650	
2200	12.5 × 35	0.020	2880	
2700	16 × 25	0.021	2930	
3300	16 × 31.5	0.017	3450	
3900	16 × 35.5	0.015	3610	
4700	16 × 40	0.013	4080	
5600	18 × 40	0.012	4280	
35	10	5 × 11	1.500	100
	22	5 × 11	0.750	180
	33	5 × 11	0.580	210
	56	6.3 × 11	0.220	340
	100	6.3 × 11	0.180	400
	120	8 × 11.5	0.150	500
	150	8 × 11.5	0.130	640
	180	8 × 11.5	0.120	720
	220	8 × 15	0.087	840
	270	10 × 12.5	0.069	1050
	330	10 × 16	0.060	1210
	470	10 × 20	0.046	1400
	560	10 × 25	0.042	1650
	680	10 × 30	0.031	1910
	680	12.5 × 20	0.035	1900
	1000	12.5 × 25	0.027	2230
1200	12.5 × 30	0.024	2650	
1200	16 × 20	0.027	2530	
1500	12.5 × 35	0.020	2880	
1800	16 × 25	0.021	2930	
1800	18 × 20	0.026	2860	
2200	16 × 31.5	0.017	3450	



■寸法表/CASE SIZE TABLE

W.V (Vdc)	Cap. (μF)	φD×L (mm)	Impedance	Ripple Current
35	2200	18×25	0.019	3140
	2700	16×35.5	0.015	3610
	2700	18×31.5	0.015	4170
	3300	16×40	0.013	4080
	3300	18×35.5	0.014	4220
	3900	18×40	0.012	4280
50	10	5×11	1.500	100
	22	5×11	0.700	180
	33	6.3×11	0.650	210
	56	6.3×11	0.300	295
	100	8×11.5	0.170	555
	120	8×15	0.120	730
	150	10×12.5	0.120	760
	180	8×20	0.091	910
	220	10×16	0.084	1050
	270	10×20	0.060	1220
	330	10×25	0.055	1440
	470	10×30	0.043	1690
	470	12.5×20	0.045	1660
	560	12.5×25	0.034	1950
	680	12.5×30	0.030	2310
	1000	16×25	0.025	2555
	1000	18×20	0.036	2490
	1200	16×31.5	0.022	3010
1200	18×25	0.026	2740	
1500	16×35.5	0.019	3150	
1800	16×40	0.016	3710	
1800	18×31.5	0.021	3635	
2200	18×35.5	0.017	3680	
2700	18×40	0.014	3800	
63	56	8×11.5	1.144	165
	68	8×11.5	0.286	570
	82	8×15	0.208	665
	100	10×12.5	0.182	740
	120	8×20	0.156	820
	120	10×16	0.099	950
	180	10×20	0.073	1150
	220	10×25	0.060	1350
	270	12.5×20	0.053	1500
	390	12.5×25	0.040	1900
	470	12.5×30	0.036	2300
	470	16×20	0.042	2000
	560	12.5×35	0.031	2500
	680	16×25	0.033	2800
	680	18×20	0.033	2600
	820	16×31.5	0.027	2850
	820	18×25	0.031	2800
	1000	16×35.5	0.025	2900
1200	16×40	0.023	3400	
1500	18×35.5	0.023	3400	
1800	18×40	0.022	3500	

■Impedance[Max.Value Ω] at 20°C 100kHz  
 ■Ripple Current [Max. value mA] at 105°C 100kHz

W.V (Vdc)	Cap. (μF)	φD×L (mm)	Impedance	Ripple Current
80	68	10×12.5	0.221	480
	82	10×12.5	0.195	530
	100	10×16	0.143	600
	120	10×20	0.109	800
	180	12.5×16	0.109	950
	220	12.5×20	0.081	1100
	270	12.5×25	0.078	1350
	390	12.5×30	0.055	1500
	470	12.5×35	0.047	1650
	470	16×25	0.049	1700
	560	12.5×40	0.042	1800
	680	16×31.5	0.042	1850
	680	18×25	0.047	1750
	820	16×35.5	0.038	2000
	820	18×31.5	0.039	1900
	1000	16×40	0.035	2200
	1200	18×40	0.034	2700
	100	15	6.3×11	0.741
27		8×11.5	0.468	355
39		8×15	0.325	450
47		10×12.5	0.221	480
56		8×20	0.247	565
68		10×16	0.143	600
82		10×20	0.109	800
100		12.5×16	0.143	750
120		10×25	0.090	900
150		12.5×20	0.081	1100
220		12.5×25	0.061	1250
220		16×20	0.062	1350
270		12.5×30	0.055	1500
330		12.5×35	0.047	1650
330		16×25	0.049	1700
330		18×20	0.059	1500
390		12.5×40	0.042	1800
470		16×31.5	0.042	1850
470	18×25	0.047	1750	
560	16×35.5	0.038	2000	
560	18×31.5	0.039	1900	
680	16×40	0.035	2200	
680	18×35.5	0.035	2200	
820	18×40	0.034	2700	

●低インピーダンス品  
**UCF**シリーズ

JIS C 5101  
CE-04

●LOW-IMPEDANCE TYPE  
 TYPE **UCF**

JIS C 5101  
CE-04

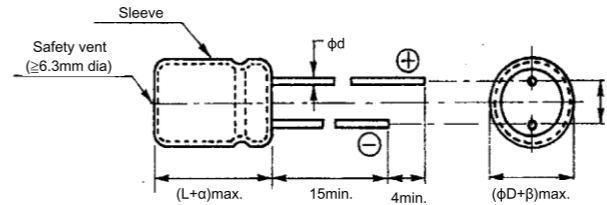
■特徴

- ・高周波超低インピーダンスを実現。
- ・105°C 6,000~10,000時間を保証。
- ・基板洗浄タイプではありません。

■FEATURES

- ・This product is Ultra-low-impedance for high-frequency.
- ・This product is the guaranteed service life of 6,000~10,000 hours at 105°C.
- ・Not washable product.

■寸法図/DIAGRAM OF DIMENSIONS



ΦD	5	6.3	8	10	12.5		16	18
	L<35		L≥35					
F	2	2.5	3.5	5.0	5.0	5.0	7.5	7.5
φd	0.5	0.5	0.6	0.6	0.6	0.8	0.8	0.8
α	1.5	1.5	1.5	1.5	≤35L:1.5, ≥40L:2.0		1.5	1.5
β	0.5							

■性能/PERFORMANCE SPECIFICATIONS

カテゴリ温度範囲	CATEGORY TEMPERATURE RANGE	-40 ~ +105°C														
標準静電容量許容差	STANDARD CAPACITANCE TOLERANCE	-20 ~ +20%														
漏れ電流 (最大値)	LEAKAGE CURRENT(MAX.VALUE)	I=0.01CV OR 3μA WHICHEVER C=RATED CAPACITANCE(μF) IS THE GREATER (after 2 minutes) V=WORKING VOLTAGE(V)														
損失角の正接 (最大値) (tan δ)	DISSIPATION FACTOR(MAX.VALUE) (tan δ)	<table border="1"> <tr> <th>W.V</th> <th>6.3</th> <th>10</th> <th>16</th> <th>25</th> <th>35</th> <th>50</th> </tr> <tr> <td>tan δ</td> <td>0.22</td> <td>0.19</td> <td>0.16</td> <td>0.14</td> <td>0.12</td> <td>0.10</td> </tr> </table> When the capacitance exceed 1,000μF, the value of tan δ is increased by 0.02 for each increment of 1,000μF or its fraction.	W.V	6.3	10	16	25	35	50	tan δ	0.22	0.19	0.16	0.14	0.12	0.10
W.V	6.3	10	16	25	35	50										
tan δ	0.22	0.19	0.16	0.14	0.12	0.10										
耐久性能 105°C 10,000時間 定格使用電圧印加 (φD≤6.3: 6000時間, φ8: 8000時間)	ENDURANCE APPLICATION OF RATED OPERATING VOLTAGE.AT 105°C FOR 10,000HOURS. (φD≤6.3: 6000Hr, φ8: 8000Hr)	<table border="1"> <tr> <td>Capacitance Change</td> <td>Within ±25% of the initial value</td> </tr> <tr> <td>Dissipation Factor</td> <td>Less than 200% of the initial specification value</td> </tr> <tr> <td>Leakage Current</td> <td>Less than the initial specification value</td> </tr> </table>	Capacitance Change	Within ±25% of the initial value	Dissipation Factor	Less than 200% of the initial specification value	Leakage Current	Less than the initial specification value								
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Leakage Current	Less than the initial specification value															
高温無負荷特性 電圧を印加しないで 105°C 1,000時間放置	ENDURANCE APPLICATION OF WITHOUT VOLTAGE FOR 1,000HOURS.	<table border="1"> <tr> <td>Capacitance Change</td> <td>Within ±25% of the initial value</td> </tr> <tr> <td>Dissipation Factor</td> <td>Less than 200% of the initial specification value</td> </tr> <tr> <td>Leakage Current</td> <td>Less than 200% of the initial specification value</td> </tr> </table>	Capacitance Change	Within ±25% of the initial value	Dissipation Factor	Less than 200% of the initial specification value	Leakage Current	Less than 200% of the initial specification value								
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Leakage Current	Less than 200% of the initial specification value															
その他の特性はJIS C 5101-4に準ずる	THE OTHER CHARACTERISTICS	THE OTHER CHARACTERISTICS ARE BASED ON JIS C 5101-4.														

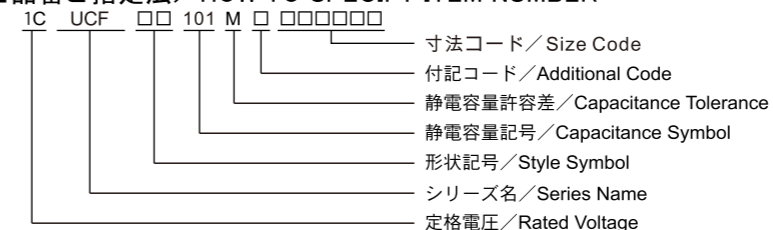
■定格リプル電流補正係数

リプル周波数が標準品一覧表の規定値と異なる場合には、下表の係数を乗じた値以下でご使用下さい。  
 When the ripple frequency differs from the spicification shown in the list of standard products, multiply the value with the coefficient shown below, and use the products under the obtained value.

周波数補正係数/FREQUENCY CORRECTION FACTOR

Cap.(μF)	Frequency (Hz)			
	120	1K	10K	100K
27~180	0.40	0.75	0.90	1.00
220~560	0.50	0.85	0.94	1.00
680~1800	0.60	0.87	0.95	1.00
2200~3900	0.75	0.90	0.95	1.00
4700~10000	0.85	0.95	0.98	1.00

■品番ご指定法/HOW TO SPECIFY ITEM NUMBER



■寸法表/CASE SIZE TABLE

W.V (Vdc)	Cap. (μF)	φD×L (mm)	Impedance	Ripple Current
6.3	220	5×11	0.220	345
	330	6.3×11	0.100	450
	470	8×11.5	0.094	540
	680	8×11.5	0.062	820
	820	8×11.5	0.056	945
	1000	8×15	0.050	1140
	1200	8×15	0.045	1250
	1500	8×20	0.029	1500
	1800	10×16	0.028	1760
	2200	10×20	0.020	1960
	2700	10×25	0.018	2250
	3300	10×25	0.018	2360
	3900	12.5×20	0.017	2480
	4700	12.5×25	0.015	2900
	5600	12.5×30	0.013	3450
	6800	12.5×35	0.012	3570
8200	16×20	0.015	3250	
8200	16×25	0.013	3630	
10000	18×25	0.012	3650	
10	150	5×11	0.200	345
	220	6.3×11	0.100	450
	330	6.3×11	0.094	540
	470	8×11.5	0.062	820
	680	8×11.5	0.056	945
	820	8×15	0.056	1080
	1000	8×15	0.045	1250
	1000	10×12.5	0.039	1330
	1200	10×16	0.039	1450
	1500	10×16	0.028	1760
	1800	10×20	0.020	1960
	2200	10×25	0.018	2250
	2700	12.5×20	0.018	2360
	3300	12.5×20	0.017	2480
	3900	12.5×25	0.015	2900
	4700	12.5×30	0.013	3450
4700	16×20	0.015	3250	
5600	12.5×35	0.012	3570	
6800	16×25	0.013	3630	
8200	18×25	0.012	3650	
16	100	5×11	0.220	345
	120	6.3×11	0.170	390
	150	6.3×11	0.100	450
	220	6.3×11	0.094	540
	330	8×11.5	0.087	820
	470	8×11.5	0.056	945
	560	8×15	0.056	1080
	680	8×15	0.045	1250
	680	10×12.5	0.039	1330
	820	10×16	0.037	1400
	1000	8×20	0.029	1500
	1000	10×16	0.028	1760
	1200	10×20	0.027	1820
	1500	10×20	0.020	1960
	1800	10×25	0.018	2250
	2200	12.5×20	0.017	2480
2700	12.5×25	0.015	2900	
3300	12.5×30	0.013	3450	
3300	16×20	0.015	3250	
3900	12.5×35	0.012	3570	
4700	16×25	0.013	3630	
5600	18×25	0.012	3650	

■Impedance [Max. Value Ω] at 20°C 100kHz  
 ■Ripple Current [Max. value mA] at 105°C 100kHz

W.V (Vdc)	Cap. (μF)	φD×L (mm)	Impedance	Ripple Current
25	68	5×11	0.220	345
	100	6.3×11	0.170	390
	120	6.3×11	0.100	450
	150	6.3×11	0.094	540
	220	8×11.5	0.087	820
	330	8×11.5	0.056	945
	470	10×12.5	0.039	1330
	560	8×20	0.029	1500
	680	10×16	0.028	1730
	820	10×20	0.020	1960
	1000	10×25	0.018	2250
	1200	10×25	0.018	2300
	1500	12.5×20	0.017	2480
	1800	12.5×25	0.015	2900
	2200	12.5×30	0.015	3450
	2200	16×20	0.015	3250
2700	12.5×35	0.012	3570	
3300	16×25	0.013	3630	
3900	18×25	0.012	3650	
35	47	5×11	0.220	345
	56	5×11	0.170	390
	68	6.3×11	0.100	450
	100	6.3×11	0.094	540
	120	6.3×11	0.087	660
	150	8×11.5	0.062	750
	180	8×11.5	0.056	820
	220	8×11.5	0.056	945
	270	8×15	0.045	1250
	330	10×12.5	0.039	1330
	390	8×20	0.029	1500
	470	10×16	0.028	1760
	560	10×20	0.026	1960
	680	10×25	0.024	2250
	820	10×25	0.018	2300
	1000	12.5×20	0.017	2480
1200	12.5×25	0.015	2900	
1500	12.5×30	0.015	3450	
1500	16×20	0.015	3250	
1800	12.5×35	0.014	3570	
2200	16×25	0.013	3630	
2700	18×25	0.012	3650	
50	27	6.3×11	0.700	238
	47	6.3×11	0.400	345
	56	8×11.5	0.340	385
	68	8×11.5	0.280	460
	100	8×11.5	0.170	724
	120	8×15	0.150	950
	150	10×12.5	0.120	979
	180	8×20	0.105	1190
	220	10×16	0.084	1370
	270	10×20	0.070	1580
	330	10×25	0.055	1870
	390	10×25	0.050	1930
	470	12.5×20	0.045	2050
	560	12.5×25	0.034	2410
	680	12.5×30	0.030	2860
	820	12.5×35	0.025	2960
820	16×20	0.028	2730	
1000	16×25	0.025	3010	
1200	16×30	0.022	3120	
1500	18×25	0.021	3290	

●低インピーダンス品

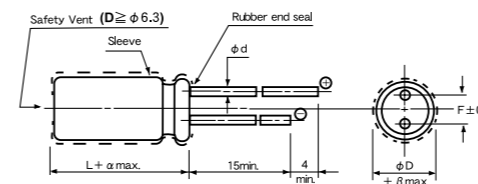
UCWKZシリーズ

JIS C5101  
CE-04  
(耐洗浄品)

■特徴

- ・非4級塩系の電解液を使用し、高周波平滑用として設計した製品です。特に高周波のインピーダンスを低く抑えてあります。
- ・寿命特性も105°C 5000時間を保証した高安定化製品です。(但しφ5、φ6.3、φ8は2000時間、φ10は4000時間保証)

■寸法図/DIAGRAM OF DIMENSIONS



■性能/PERFORMANCE SPECIFICATIONS

カテゴリ	温度範囲	CATEGORY TEMPERATURE RANGE	-55°C ~ +105°C																								
標準静電容量許容差		STANDARD CAPACITANCE TOLERANCE	-20% ~ +20% (120Hz)																								
漏れ電流 (最大値)		LEAKAGE CURRENT (MAX. VALUE)	I=0.01CV OR 3μA WHICHEVER IS THE GREATER (after 2 minutes) C=RATED CAPACITANCE (μF) V=WORKING VOLTAGE (V)																								
損失角の正接 (最大値) (tan δ)		DISSIPATION FACTOR (MAX. VALUE)	<table border="1"> <tr> <th>W. V</th> <th>6.3</th> <th>10</th> <th>16</th> <th>25</th> <th>35</th> <th>50</th> <th>63</th> <th>100</th> </tr> <tr> <td>tan δ</td> <td>0.22</td> <td>0.19</td> <td>0.16</td> <td>0.14</td> <td>0.12</td> <td>0.10</td> <td>0.09</td> <td>0.08</td> </tr> </table> <p>When the capacitance exceed 1,000 μF, the value of tan δ is increased by 0.02 for each increment of 1,000 μF or its fraction.</p>	W. V	6.3	10	16	25	35	50	63	100	tan δ	0.22	0.19	0.16	0.14	0.12	0.10	0.09	0.08						
W. V	6.3	10	16	25	35	50	63	100																			
tan δ	0.22	0.19	0.16	0.14	0.12	0.10	0.09	0.08																			
耐久特性 105°C 5000時間 定格使用電圧印加 (φD ≤ 8 : 2000時間, φ10 : 4000時間)		ENDURANCE APPLICATION OF RATED OPERATING VOLTAGE, AT 105°C FOR 5000HOURS. (φD ≤ 8 : 2000Hr, φ10 : 4000Hr)	CAPACITANCE CHANGE : LESS THAN 20% OF THE INITIAL MEASURED VALUE. DISSIPATION FACTOR : LESS THAN 200% OF THE INITIAL SPECIFIED VALUE. LEAKAGE CURRENT : LESS THAN THE INITIAL SPECIFIED VALUE.																								
低温特性 (+20°Cにおける120Hzのインピーダンスに対する比) (最大値)		LOW TEMPERATURE STABILITY (RATIO OF IMPEDANCE AT COLD TO THAT AT 20°C, 120Hz. MAX. VALUE.)	<table border="1"> <tr> <th>W. V</th> <th>-25°C/+20°C</th> <th>-55°C/+20°C</th> <th>W. V</th> <th>-25°C/+20°C</th> <th>-55°C/+20°C</th> </tr> <tr> <td>6.3</td> <td>2</td> <td>5</td> <td>25</td> <td>2</td> <td>3</td> </tr> <tr> <td>10</td> <td>2</td> <td>5</td> <td>35</td> <td>2</td> <td>3</td> </tr> <tr> <td>16</td> <td>2</td> <td>4</td> <td>50</td> <td>2</td> <td>3</td> </tr> </table>	W. V	-25°C/+20°C	-55°C/+20°C	W. V	-25°C/+20°C	-55°C/+20°C	6.3	2	5	25	2	3	10	2	5	35	2	3	16	2	4	50	2	3
W. V	-25°C/+20°C	-55°C/+20°C	W. V	-25°C/+20°C	-55°C/+20°C																						
6.3	2	5	25	2	3																						
10	2	5	35	2	3																						
16	2	4	50	2	3																						
その他の特性はJIS C5101-4に準ずる		THE OTHER CHARACTERISTICS	THE OTHER CHARACTERISTICS ARE BASED ON JIS C 5101-4																								

■定格リプル電流補正係数

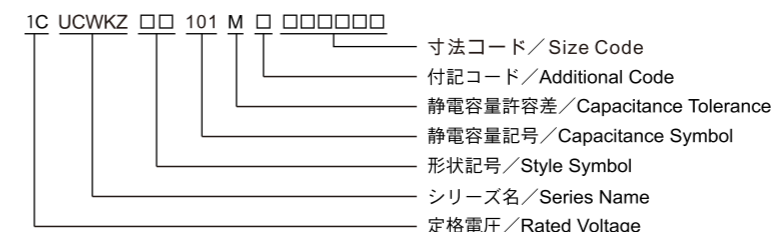
リプル周波数が標準品一覧表の規定値と異なる場合には、下表の係数を乗じた値以下でご使用下さい。

When the ripple frequency differs from the specification shown in the list of standard products, multiply the value with the coefficient shown below, and use the products under the obtained value.

周波数補正係数/FREQUENCY CORRECTION FACTOR

Cap. (μF)	Freq. (Hz)			
	120	1K	10K	100K
12 ~ 27	0.55	0.80	0.90	1.00
33 ~ 330	0.70	0.90	0.95	1.00
390 ~ 1000	0.80	0.95	1.00	1.00
1200 ~ 6800	0.90	0.98	1.00	1.00

■品番ご指定法/HOW TO SPECIFY ITEM NUMBER



■寸法表/CASE SIZE TABLE

W.V (vdc)	Cap (μF)	φD×L (mm)	Impedance	Ripple
6.3	120	5×11	0.936	165
	220	6.3×11	0.494	255
	330	6.3×15	0.351	330
	390	8×11.5	0.260	415
	470	10×12.5	0.156	625
	560	8×15	0.208	495
	680	10×16	0.109	825
	820	8×20	0.143	640
	1200	10×20	0.081	1040
	1500	10×25	0.068	1260
	2200	10×30	0.057	1440
	2200	12.5×20	0.060	1340
	2700	12.5×25	0.044	1690
	3900	12.5×30	0.039	1950
	4700	12.5×35	0.035	2200
	5600	12.5×40	0.031	2390
10	5600	16×25	0.036	2070
	6800	16×31.5	0.033	2350
	82	5×11	0.936	165
	220	6.3×11	0.494	255
	270	6.3×15	0.351	330
	330	8×11.5	0.260	415
	390	10×12.5	0.156	625
	470	8×15	0.208	495
	680	8×20	0.143	640
	680	10×16	0.109	825
	1000	10×20	0.081	1040
	1200	10×25	0.068	1260
	1500	10×30	0.057	1440
	1800	12.5×20	0.060	1340
	2200	12.5×25	0.044	1690
	2700	12.5×30	0.039	1950
3300	12.5×35	0.035	2200	
3900	12.5×40	0.031	2390	
3900	16×25	0.036	2070	
5600	16×31.5	0.033	2350	
16	56	5×11	0.936	165
	120	6.3×11	0.494	255
	180	6.3×15	0.351	330
	270	8×11.5	0.260	415
	270	10×12.5	0.156	625
	330	8×15	0.208	495
	470	8×20	0.143	640
	470	10×16	0.109	825
	680	10×20	0.081	1040
	820	10×25	0.068	1260
	1200	10×30	0.057	1440
	1200	12.5×20	0.060	1340
	1500	12.5×25	0.044	1690
	2200	12.5×30	0.039	1950
	2700	12.5×35	0.035	2200
	3300	12.5×40	0.031	2390
3900	16×31.5	0.033	2350	
4700	16×35.5	0.029	2550	
5600	16×40	0.023	2900	
6800	18×35.5	0.027	2660	
25	39	5×11	0.936	165
	82	6.3×11	0.494	255
	120	6.3×15	0.351	330
	150	8×11.5	0.260	415
	180	10×12.5	0.156	625
	220	8×15	0.208	495
	330	8×20	0.143	640
	330	10×16	0.109	825
	470	10×20	0.081	1040
	560	10×25	0.068	1260
	820	10×30	0.057	1440
	820	12.5×20	0.060	1340
	1000	12.5×25	0.044	1690
	1500	12.5×30	0.039	1950
	1800	12.5×35	0.035	2200

■Impedance [Max.Value Ω] at 20°C 100kHz  
 ■Ripple Current [Max.Value mA] at 105°C 100kHz

W.V (vdc)	Cap (μF)	φD×L (mm)	Impedance	Ripple	
25	1800	16×25	0.036	2070	
	2200	12.5×40	0.031	2390	
	2700	16×31.5	0.033	2350	
	3300	16×35.5	0.029	2550	
	3900	16×40	0.023	2900	
	3900	18×35.5	0.027	2660	
	4700	18×40	0.022	3010	
	35	27	5×11	0.936	165
		56	6.3×11	0.494	255
		82	6.3×15	0.351	330
		120	8×11.5	0.260	415
		120	10×12.5	0.156	625
		180	8×15	0.208	495
		220	8×20	0.143	640
		220	10×16	0.109	825
		330	10×20	0.081	1040
390		10×25	0.068	1260	
560		10×30	0.057	1440	
560		12.5×20	0.060	1340	
680		12.5×25	0.044	1690	
1000		12.5×30	0.039	1950	
1200		12.5×35	0.035	2200	
1200		16×25	0.036	2070	
1500	12.5×40	0.031	2390		
1800	16×31.5	0.033	2350		
2200	16×35.5	0.029	2550		
2700	16×40	0.023	2900		
2700	18×35.5	0.027	2660		
3300	18×40	0.013	3010		
50	18	5×11	1.430	130	
	39	6.3×11	0.728	220	
	56	6.3×15	0.533	310	
	68	8×11.5	0.377	340	
	82	8×15	0.325	470	
	82	10×12.5	0.208	480	
	120	8×20	0.234	610	
	120	10×16	0.156	755	
	180	10×20	0.114	945	
	220	10×25	0.088	1150	
	330	10×30	0.077	1260	
	330	12.5×20	0.077	1190	
	470	12.5×25	0.059	1490	
	560	12.5×30	0.051	1720	
	680	12.5×35	0.043	1890	
	820	12.5×40	0.038	2030	
820	16×25	0.043	1880		
1000	16×31.5	0.038	2150		
1200	16×35.5	0.033	2320		
1500	16×40	0.027	2540		
1800	18×35.5	0.030	2400		
2200	18×40	0.026	2610		
63	12	5×11	2.470	100	
	27	6.3×11	1.430	160	
	39	6.3×15	0.806	230	
	47	8×11.5	0.637	275	
	56	10×12.5	0.351	420	
	68	8×15	0.442	360	
	68	10×16	0.273	523	
	82	8×20	0.273	500	
	120	10×20	0.208	650	
	150	10×25	0.169	780	
	180	10×30	0.130	960	
	220	12.5×20	0.143	870	
	270	12.5×25	0.096	1150	
	390	12.5×30	0.088	1280	
	470	12.5×35	0.819	1390	
	470	16×25	0.072	1480	
560	12.5×40	0.066	1530		
680	16×31.5	0.060	1720		
820	16×35.5	0.052	1910		
1000	18×35.5	0.052	1970		

・この寸法表にないカスタム品も製造いたしますので、ご相談下さい。  
 Produce custom product too, which are not found in these tables.

●低インピーダンス品

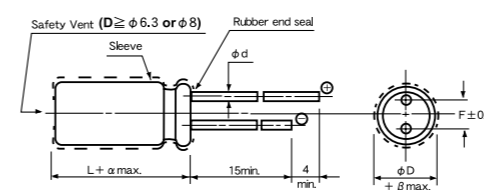
UCWXZシリーズ

JIS C5101  
CE-04  
(耐洗浄品)

■特徴

- ・高周波平滑用として設計した製品です。特に高周波のリプル電流とインピーダンスを更に低く抑えてあります。
- ・寿命特性も105°C 6000時間を保証した高安定化製品です。(但しφ5、φ6.3は3000時間、φ8は4000時間、φ10は5000時間保証)

■寸法図/DIAGRAM OF DIMENSIONS



●LOW-IMPEDANCE TYPE

TYPE UCWXZ

JIS C5101  
CE-04  
(Washable product)

■FEATURES

- ・ This is a product for high-frequency smoothing. Especially, the impedance and the ripple current of high frequency is kept more lower.
- ・ This product is highly stable with the guaranteed service life of 6000 hours at 105°C. (φ5, φ6.3 : 3000hrs, φ8 : 4000hrs, φ10 : 5,000hrs)

Unit : mm

φD	5	6.3	8	10	12.5	16	18
F	2.0	2.5	3.5	5.0	5.0	7.5	7.5
φd	0.5		0.6		0.8		
α	1.0			L < 20 : 1.5		L ≥ 20 : 2	
β	0.5						

■性能/PERFORMANCE SPECIFICATIONS

カテゴリ 温度範囲	CATEGORY TEMPERATURE RANGE	-55°C ~ +105°C							
標準静電容量許容差	STANDARD CAPACITANCE TOLERANCE	-20% ~ +20% (120Hz)							
漏れ電流 (最大値)	LEAKAGE CURRENT (MAX. VALUE)	I=0.01CV OR 3μA WHICHEVER IS THE GREATER (after 2 minutes) C=RATED CAPACITANCE (μF) V=WORKING VOLTAGE (V)							
損失角の正接 (最大値) (tan δ)	DISSIPATION FACTOR (MAX. VALUE)	W. V	6.3	10	16	25	35	50	63
		tan δ	0.22	0.19	0.16	0.14	0.12	0.10	0.09
When the capacitance exceed 1,000μF, the value of tan δ is increased by 0.02 for each increment of 1,000μF or its fraction.									
耐久性 105°C 6000時間 定格使用電圧印加 (φD ≤ 6.3 : 3000時間, φ8 : 4000時間) (φ10 : 5000時間)	ENDURANCE APPLICATION OF RATED OPERATING VOLTAGE, AT 105°C FOR 6000HOURS. (φD ≤ 6.3 : 3000Hr, φ8 : 4000Hr) (φ10 : 5000Hr)	CAPACITANCE CHANGE : LESS THAN 25% OF THE INITIAL MEASURED VALUE. DISSIPATION FACTOR : LESS THAN 200% OF THE INITIAL SPECIFIED VALUE. LEAKAGE CURRENT : LESS THAN THE INITIAL SPECIFIED VALUE.							
その他の特性はJIS C5101-4に準ずる	THE OTHER CHARACTERISTICS	THE OTHER CHARACTERISTICS ARE BASED ON JIS C 5101-4							

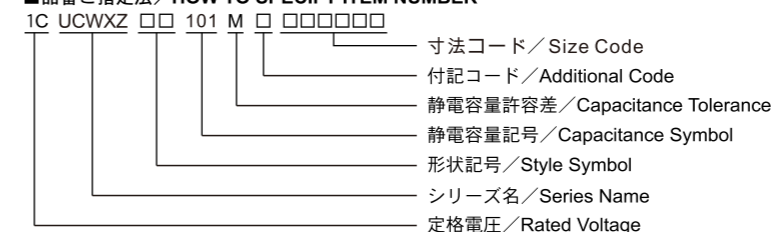
■定格リプル電流補正係数

リプル周波数が標準品一覧表の規定値と異なる場合には、下表の係数を乗じた値以下でご使用下さい。  
 When the ripple frequency differs from the specification shown in the list of standard products, multiply the value with the coefficient shown below, and use the products under the obtained value.

周波数補正係数/FREQUENCY CORRECTION FACTOR

Cap. (μF)	Freq. (Hz)			
	120	1K	10K	100K
6.8 ~ 33	0.42	0.70	0.90	1.0
39 ~ 270	0.50	0.73	0.92	1.0
330 ~ 680	0.55	0.77	0.94	1.0
820 ~ 1800	0.60	0.80	0.96	1.0
2200 ~ 15000	0.70	0.85	0.98	1.0

■品番指定法/HOW TO SPECIFY ITEM NUMBER





■寸法表/CASE SIZE TABLE

W.V (vdc)	Cap (μF)	φD×L (mm)	Impedance	Ripple
6.3	100	5×11	0.780	180
	330	6.3×11	0.325	290
	330	6.3×15	0.299	430
	560	8×11.5	0.152	555
	820	8×15	0.111	730
	1000	10×12.5	0.117	755
	1200	8×20	0.085	955
	1200	10×16	0.088	1050
	1500	10×20	0.068	1220
	2200	10×25	0.059	1440
	2700	10×30	0.046	1815
	3300	12.5×20	0.049	1655
	3900	12.5×25	0.039	1945
	4700	12.5×30	0.033	2310
	5600	12.5×35	0.029	2510
	5600	16×20	0.038	2205
6800	16×25	0.029	2555	
8200	16×31.5	0.023	3010	
10000	18×25	0.026	2740	
12000	18×31.5	0.021	3635	
15000	18×35.5	0.020	3680	
10	100	5×11	0.780	180
	220	6.3×11	0.325	290
	220	6.3×15	0.299	430
	470	8×11.5	0.152	555
	680	8×15	0.111	730
	680	10×12.5	0.117	755
	1000	8×20	0.085	955
	1000	10×16	0.088	1050
	1500	10×20	0.068	1220
	1500	10×25	0.059	1440
	2200	10×30	0.046	1815
	2200	12.5×20	0.049	1655
	3300	12.5×25	0.039	1945
	3300	12.5×30	0.033	2310
	3900	12.5×35	0.029	2510
	3900	16×20	0.038	2205
5600	16×25	0.029	2555	
6800	16×31.5	0.023	3010	
6800	18×25	0.026	2740	
8200	16×35.5	0.021	3150	
8200	18×31.5	0.021	3635	
10000	18×35.5	0.020	3680	
15000	18×40	0.018	3800	
16	56	5×11	0.780	180
	150	6.3×11	0.325	290
	180	6.3×15	0.299	430
	330	8×11.5	0.152	555
	470	8×15	0.111	730
	470	10×12.5	0.117	755
	680	8×20	0.085	955
	680	10×16	0.088	1050
	1000	10×20	0.068	1220
	1200	10×25	0.059	1440
	1500	10×30	0.046	1815
	1500	12.5×20	0.049	1655
	2200	12.5×25	0.039	1945
	2700	12.5×30	0.033	2310
	2700	16×20	0.038	2205
	3300	12.5×35	0.029	2510
3900	16×25	0.029	2555	
4700	16×31.5	0.023	3010	
4700	18×25	0.026	2740	
5600	16×35.5	0.021	3150	
5600	18×31.5	0.021	3635	
8200	18×35.5	0.020	3680	
10000	18×40	0.018	3800	
25	47	5×11	0.780	180
	100	6.3×11	0.325	290
	120	6.3×15	0.299	430
	220	8×11.5	0.152	555
	330	8×15	0.111	730
	330	10×12.5	0.117	755
	470	8×20	0.085	955
	470	10×16	0.088	1050
	680	10×20	0.068	1220
	820	10×25	0.059	1440
	1000	10×30	0.046	1815
	1000	12.5×20	0.049	1655
	1500	12.5×25	0.039	1945
	2200	12.5×30	0.033	2310
	2700	16×20	0.038	2205
	3300	12.5×35	0.029	2510
3900	16×25	0.029	2555	
4700	16×31.5	0.023	3010	
4700	18×25	0.026	2740	
5600	16×35.5	0.021	3150	
5600	18×31.5	0.021	3635	
8200	18×35.5	0.020	3680	
10000	18×40	0.018	3800	
35	47	5×11	0.780	180
	56	6.3×11	0.325	290
	82	6.3×15	0.299	430
	150	8×11.5	0.152	555
	220	8×15	0.111	730
	220	10×12.5	0.117	755
	330	8×20	0.085	955
	330	10×16	0.088	1050
	470	10×20	0.068	1220
	560	10×25	0.059	1440
	680	10×30	0.046	1815
	680	12.5×20	0.049	1655
	1000	12.5×25	0.039	1945
	1200	12.5×30	0.033	2310
	1200	16×20	0.038	2205
	1500	12.5×35	0.029	2510
1800	16×25	0.029	2555	
2200	16×31.5	0.023	3010	
2200	18×25	0.026	2740	
2700	16×35.5	0.021	3150	
2700	18×31.5	0.021	3635	
3300	18×35.5	0.020	3680	
4700	18×40	0.018	3800	
50	22	5×11	1.560	170
	47	6.3×11	0.559	300
	56	6.3×15	0.520	360
	100	8×11.5	0.312	485
	120	8×15	0.208	635
	150	10×12.5	0.208	615
	180	8×20	0.156	860
	220	10×16	0.156	850
	220	10×20	0.117	1030
	270	10×25	0.107	1200
	330	10×30	0.078	1610
	470	12.5×20	0.078	1500
	680	12.5×25	0.065	1832
	680	16×20	0.062	1835
	820	12.5×35	0.044	2285
	1000	16×25	0.044	2235
1200	16×31.5	0.036	2700	
1200	18×25	0.038	2610	
1500	16×35.5	0.033	2790	
1800	18×31.5	0.033	3000	
2200	18×35.5	0.030	3100	
63	12	5×11	2.600	145
	33	6.3×11	0.923	250
	39	6.3×15	0.910	330
	68	8×11.5	0.442	405
	100	8×15	0.299	535
	100	10×12.5	0.325	535
	150	10×16	0.247	660
	220	10×20	0.195	885
	220	10×25	0.169	1050
	330	12.5×20	0.111	1285
	390	12.5×25	0.091	1720
	470	12.5×30	0.072	2090
	470	16×20	0.077	1765
	560	16×25	0.065	2160
	680	12.5×35	0.061	2265
	820	16×31.5	0.056	2670
820	18×25	0.056	2585	
1000	16×35.5	0.047	2770	
1200	18×31.5	0.042	2950	
1500	18×35.5	0.039	3095	
2200	18×40	0.036	3200	

■Impedance [Max.Value Ω] at 20°C 100kHz  
■Ripple Current [Max.Value mA] at 105°C 100kHz

W.V (vdc)	Cap (μF)	φD×L (mm)	Impedance	Ripple	
25	1500	12.5×25	0.039	1945	
	1800	12.5×30	0.033	2310	
	1800	16×20	0.038	2205	
	2200	12.5×35	0.029	2510	
	2700	16×25	0.029	2555	
	3300	16×31.5	0.023	3010	
	3300	18×25	0.026	2740	
	3900	16×35.5	0.021	3150	
	3900	18×31.5	0.021	3635	
	4700	18×35.5	0.020	3680	
	6800	18×40	0.018	3800	
	35	33	5×11	0.780	180
		56	6.3×11	0.325	290
		82	6.3×15	0.299	430
		150	8×11.5	0.152	555
		220	8×15	0.111	730
220		10×12.5	0.117	755	
330		8×20	0.085	955	
330		10×16	0.088	1050	
470		10×20	0.068	1220	
560		10×25	0.059	1440	
680		10×30	0.046	1815	
680		12.5×20	0.049	1655	
1000		12.5×25	0.039	1945	
1200		12.5×30	0.033	2310	
1200		16×20	0.038	2205	
1500		12.5×35	0.029	2510	
1800	16×25	0.029	2555		
2200	16×31.5	0.023	3010		
2200	18×25	0.026	2740		
2700	16×35.5	0.021	3150		
2700	18×31.5	0.021	3635		
3300	18×35.5	0.020	3680		
4700	18×40	0.018	3800		
50	22	5×11	1.560	170	
	47	6.3×11	0.559	300	
	56	6.3×15	0.520	360	
	100	8×11.5	0.312	485	
	120	8×15	0.208	635	
	150	10×12.5	0.208	615	
	180	8×20	0.156	860	
	220	10×16	0.156	850	
	220	10×20	0.117	1030	
	270	10×25	0.107	1200	
	330	10×30	0.078	1610	
	470	12.5×20	0.078	1500	
	680	12.5×25	0.065	1832	
	680	16×20	0.062	1835	
	820	12.5×35	0.044	2285	
	1000	16×25	0.044	2235	
1200	16×31.5	0.036	2700		
1200	18×25	0.038	2610		
1500	16×35.5	0.033	2790		
1800	18×31.5	0.033	3000		
2200	18×35.5	0.030	3100		
63	12	5×11	2.600	145	
	33	6.3×11	0.923	250	
	39	6.3×15	0.910	330	
	68	8×11.5	0.442	405	
	100	8×15	0.299	535	
	100	10×12.5	0.325	535	
	150	10×16	0.247	660	
	220	10×20	0.195	885	
	220	10×25	0.169	1050	
	330	12.5×20	0.111	1285	
	390	12.5×25	0.091	1720	
	470	12.5×30	0.072	2090	
	470	16×20	0.077	1765	
	560	16×25	0.065	2160	
	680	12.5×35	0.061	2265	
	820	16×31.5	0.056	2670	
820	18×25	0.056	2585		
1000	16×35.5	0.047	2770		
1200	18×31.5	0.042	2950		
1500	18×35.5	0.039	3095		
2200	18×40	0.036	3200		

・この寸法表にないカスタム品も製造いたしますので、ご相談下さい。  
Produce custom product too, which are not found in these tables.

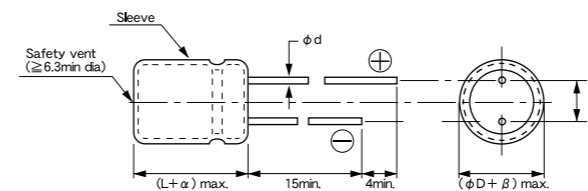
●高リップル・長寿命品(105°C)

UCWYZシリーズ JIS C5101 CE-04

■特徴

- ・低ESRで、スイッチング電源に最適
- ・105°C 4,000~10,000時間を保証
- ・高リップル小形化品

■寸法図/DIAGRAM OF DIMENSIONS



●High Ripple Current & Long Life type(105°C)

TYPE UCWYZ JIS C5101 CE-04

■FEATURES

- ・ Low ESR, For Switchng Power Supply.
- ・ This product is the guaranteed service life of 4,000~10,000 hours at 105°C.
- ・ Smaller size with large permissible ripple current.

φ D	5	6.3	8	10	12.5	16	18
φ d	0.5		0.6			0.8	
F	2.0	2.5	3.5	5.0	5.0	7.5	7.5
α	1.0				L < 20 : 1.5 L ≥ 20 : 2		
β	0.5						

■性能/PERFORMANCE SPECIFICATIONS

カテゴリー温度範囲	CATEGORY TEMPERATURE RANGE	-55°C ~ +105°C																
標準静電容量許容差	STANDARD CAPACITANCE TOLERANCE	-20% ~ +20% (20°C, 120Hz)																
漏れ電流 (最大値)	LEAKAGE CURRENT (MAX. VALUE)	I=0.01CV OR 3μA WHICHEVER IS THE GREATER (after 2 minutes) C=RATED CAPACITANCE (μF) V=WORKING VOLTAGE (V)																
損失角の正接 (最大値) (tan δ)	DISSIPATION FACTOR (MAX. VALUE) (tan δ)	When the capacitance exceed 1,000μF, the value of tan δ is increased by 0.02 for each increment of 1,000μF or its fraction. <table border="1"> <tr> <th>W. V</th> <th>6.3</th> <th>10</th> <th>16</th> <th>25</th> <th>35</th> <th>50</th> <th>63</th> </tr> <tr> <td>tan δ</td> <td>0.22</td> <td>0.19</td> <td>0.16</td> <td>0.14</td> <td>0.12</td> <td>0.10</td> <td>0.09</td> </tr> </table>	W. V	6.3	10	16	25	35	50	63	tan δ	0.22	0.19	0.16	0.14	0.12	0.10	0.09
W. V	6.3	10	16	25	35	50	63											
tan δ	0.22	0.19	0.16	0.14	0.12	0.10	0.09											
耐久性能	ENDURANCE	<table border="1"> <tr> <th>φD=5~6.3mm</th> <th>φD=8~10mm</th> <th>φD≥12.5mm</th> </tr> <tr> <td>6.3~10V</td> <td>4,000 hrs</td> <td>6,000 hrs</td> <td>8,000 hrs</td> </tr> <tr> <td>16~63V</td> <td>5,000 hrs</td> <td>7,000 hrs</td> <td>10,000 hrs</td> </tr> </table> <p>After applying rated voltage at 105°C The capacitors shall meet the following requirements.</p> <table border="1"> <tr> <td>Capacitance Change</td></tr></table>	φD=5~6.3mm	φD=8~10mm	φD≥12.5mm	6.3~10V	4,000 hrs	6,000 hrs	8,000 hrs	16~63V	5,000 hrs	7,000 hrs	10,000 hrs	Capacitance Change				
φD=5~6.3mm	φD=8~10mm	φD≥12.5mm																
6.3~10V	4,000 hrs	6,000 hrs	8,000 hrs															
16~63V	5,000 hrs	7,000 hrs	10,000 hrs															
Capacitance Change																		

■寸法表/CASE SIZE TABLE

W.V (vdc)	Cap (μF)	φD×L (mm)	Impedance	Ripple
6.3	150	5×11	0.754	210
	330	6.3×11	0.286	340
	680	8×11.5	0.169	640
	820	10×12.5	0.104	865
	1000	8×15	0.113	840
	1200	8×20	0.090	1050
	1200	10×16	0.078	1210
	1500	10×20	0.060	1400
	2200	10×25	0.055	1650
	2700	10×30	0.040	1910
	3300	12.5×20	0.046	1900
	3900	12.5×25	0.035	2230
	4700	12.5×30	0.031	2650
	5600	12.5×35	0.026	2880
	5600	16×20	0.035	2530
	6800	16×25	0.027	2930
	8200	16×31.5	0.022	3450
	10000	16×35.5	0.020	3610
10000	18×25	0.025	3410	
12000	18×31.5	0.020	4170	
15000	18×35.5	0.018	4220	
18000	18×40	0.016	4280	
10	100	5×11	0.754	210
	220	6.3×11	0.286	340
	470	8×11.5	0.169	640
	680	8×15	0.113	840
	680	10×12.5	0.104	865
	1000	8×20	0.090	1050
	1000	10×16	0.078	1210
	1200	10×20	0.060	1400
	1500	10×25	0.055	1650
	2200	10×30	0.040	1910
	2200	12.5×20	0.046	1900
	3300	12.5×25	0.035	2230
	3900	12.5×30	0.031	2650
	3900	16×20	0.035	2530
	4700	12.5×35	0.026	2880
	5600	16×25	0.027	2930
	6800	16×31.5	0.022	3450
	8200	16×35.5	0.020	3610
8200	18×31.5	0.020	4170	
10000	18×35.5	0.018	4220	
12000	18×40	0.016	4280	
16	56	5×11	0.754	210
	120	6.3×11	0.286	340
	330	8×11.5	0.169	640
	470	8×15	0.113	840
	470	10×12.5	0.104	865
	680	8×20	0.090	1050
	680	10×16	0.078	1210
	1000	10×20	0.060	1400
	1200	10×25	0.055	1650
	1500	10×30	0.040	1910
	2200	12.5×20	0.046	1900
	2700	12.5×25	0.035	2230
	2700	16×20	0.035	2530
	3300	12.5×35	0.026	2880
	3900	16×25	0.027	2930
	4700	16×31.5	0.022	3450
	4700	18×25	0.025	3140
	5600	16×35.5	0.020	3610
5600	18×31.5	0.020	4170	
8200	18×35.5	0.018	4220	
10000	18×40	0.016	4280	
25	47	5×11	0.754	210
	100	6.3×11	0.286	340
	220	8×11.5	0.169	640
	330	8×15	0.113	840
	330	10×12.5	0.104	865
	470	8×20	0.090	1050
	470	10×16	0.078	1210
	680	10×20	0.060	1400
	820	10×25	0.055	1650
	1000	10×30	0.040	1910
	1000	12.5×20	0.046	1900
	1500	12.5×25	0.035	2230
	1800	12.5×30	0.031	2650
	1800	16×20	0.035	2530
	2200	12.5×35	0.026	2880
	2200	18×25	0.025	3140
	3300	18×31.5	0.020	3610
	3300	22×20	0.022	3450

■Impedance[Max.Value Ω] at 20°C 100kHz  
■Ripple Curent [Max.Value mA] at 105°C 100kHz

W.V (vdc)	Cap (μF)	φD×L (mm)	Impedance	Ripple	
25	2700	16×25	0.027	2930	
	3300	16×31.5	0.022	3450	
	3300	18×25	0.025	3140	
	3900	16×35.5	0.020	3610	
	3900	18×31.5	0.020	4170	
	4700	18×35.5	0.018	4220	
	5600	18×40	0.016	4280	
	35	33	5×11	0.754	210
		56	6.3×11	0.286	340
		150	8×11.5	0.169	640
		220	8×15	0.113	840
		220	10×12.5	0.104	865
		270	8×20	0.090	1050
		330	10×16	0.078	1210
		470	10×20	0.060	1400
		560	10×25	0.055	1650
		680	10×30	0.040	1910
		680	12.5×20	0.046	1900
1000		12.5×25	0.035	2230	
1200		12.5×30	0.031	2650	
1200		16×20	0.035	2530	
1500		12.5×35	0.026	2880	
1800		16×25	0.027	2930	
2200		16×31.5	0.022	3450	
2200		18×25	0.025	3140	
2700	16×35.5	0.020	3610		
3300	18×35.5	0.018	4220		
3900	18×40	0.016	4280		
50	2.2	5×11	3.250	43	
	3.3	5×11	2.860	53	
	4.7	5×11	2.470	88	
	10	5×11	1.950	100	
	22	5×11	0.910	180	
	56	6.3×11	0.390	295	
	100	8×11.5	0.221	555	
	120	8×15	0.156	730	
	150	10×12.5	0.156	760	
	180	8×20	0.118	910	
	220	10×16	0.109	1050	
	270	10×20	0.078	1220	
	330	10×25	0.072	1440	
	470	10×30	0.056	1690	
	470	12.5×20	0.059	1660	
	560	12.5×25	0.044	1950	
	680	12.5×30	0.039	2310	
	820	12.5×35	0.033	2510	
820	16×20	0.044	2210		
1000	16×25	0.033	2555		
1200	16×31.5	0.029	3010		
1200	18×25	0.034	2740		
1500	16×35.5	0.025	3150		
1800	18×31.5	0.027	3635		
2200	18×35.5	0.022	3680		
2700	18×40	0.018	3800		
63	15	5×11	1.144	165	
	33	6.3×11	0.455	265	
	56	8×11.5	0.286	500	
	82	8×15	0.208	665	
	82	10×12.5	0.143	690	
	120	8×20	0.156	820	
	120	10×16	0.099	950	
	180	10×20	0.073	1150	
	220	10×25	0.060	1350	
	270	12.5×20	0.053	1500	
	390	12.5×25	0.040	1900	
	470	12.5×30	0.036	2300	
	470	16×20	0.042	2000	
	560	12.5×35	0.031	2500	
	680	16×25	0.033	2600	
	820	16×31.5	0.027	2850	
	820	18×25	0.031	2800	
	1000	16×35.5	0.025	2900	
1200	18×31.5	0.026	3300		
1500	18×35.5	0.023	3400		
1800	18×40	0.022	3500		

・この寸法表にないカスタム品も製造いたしますので、ご相談下さい。  
Produce custom product too, which are not found in these tables.

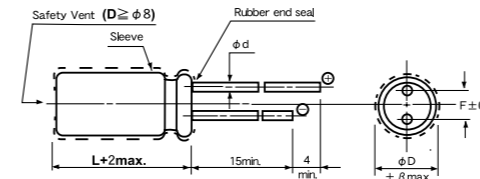
●広使用温度範囲125°C品

**UCWCZシリーズ** JIS C5101 CE-04  
(基板洗浄タイプではありません)

■特徴

- ・UCWCZシリーズは、広温度範囲（-40～+125°C）で極めて安定した性能をもつ製品です。
- ・苛酷な使用条件が要求される自動車電装機器、通信機器、各種産業用機器等に最適です。

■寸法図/DIAGRAM OF DIMENSIONS



●WIDE OPERATING TEMP. RANGE TYPE 125°C USE

**TYPE UCWCZ** JIS C5101 CE-04  
(Unsuitable washing product)

■FEATURES

- ・The UCWCZ series constitutes products which show extraordinary stabilization in performance at a wide temperature range of -40 to +125°C.
- ・This series is most suitable for use in automobile electric devices, communications equipment and various types of industrial machinery and equipment which are subjected to rigorous using conditions.

Unit : mm

φD	8	10	12.5	16
φd	0.6	0.6	0.6	0.8
F	3.5	5.0	5.0	7.5
β	0.5		1.0	

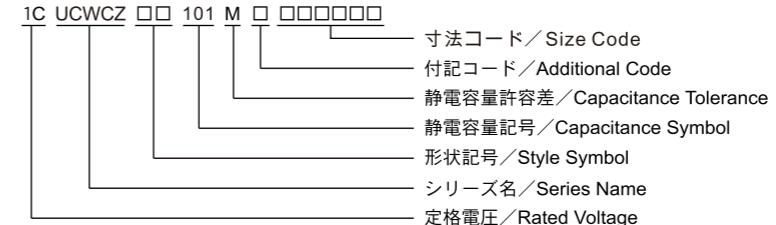
■性能/PERFORMANCE SPECIFICATIONS

カテゴリ 温度範囲	CATEGORY TEMPERATURE RANGE	-40°C～+125°C																								
標準静電容量許容差	STANDARD CAPACITANCE TOLERANCE	-20%～+20% (120Hz)																								
漏れ電流 (最大値)	LEAKAGE CURRENT (MAX. VALUE)	I=0.01CV OR 3μA WHICHEVER IS THE GREATER (after 2 minutes) C=RATED CAPACITANCE (μF) V=WORKING VOLTAGE (V)																								
損失角の正接 (最大値) (tan δ)	DISSIPATION FACTOR (MAX. VALUE)	<table border="1"> <tr> <th>W. V</th> <th>10</th> <th>16</th> <th>25</th> <th>35</th> <th>50</th> <th>63</th> </tr> <tr> <td>tan δ</td> <td>0.20</td> <td>0.16</td> <td>0.14</td> <td>0.12</td> <td>0.10</td> <td>0.10</td> </tr> </table>	W. V	10	16	25	35	50	63	tan δ	0.20	0.16	0.14	0.12	0.10	0.10										
		W. V	10	16	25	35	50	63																		
tan δ	0.20	0.16	0.14	0.12	0.10	0.10																				
When the capacitance exceed 1,000 μF, the value of tan δ is increased by 0.02 for each increment of 1,000 μF or its fraction.																										
耐久性 125°C 2000時間 定格使用電圧印加 (但し、φ8は1000時間)	ENDURANCE APPLICATION OF RATED OPERATING VOLTAGE, AT 125°C FOR 2000HOURS. (φ8=1000hr)	CAPACITANCE CHANGE : LESS THAN 20% OF THE INITIAL MEASURED VALUE. DISSIPATION FACTOR : LESS THAN 200% OF THE INITIAL SPECIFIED VALUE. LEAKAGE CURRENT : LESS THAN THE INITIAL SPECIFIED VALUE.																								
低温特性 (+20°Cにおける120Hzのインピーダンスに対する比) (最大値)	LOW TEMPERATURE STABILITY (RATIO OF IMPEDANCE AT COLD TO) (THAT AT 20°C, 120Hz, MAX. VALUE)	<table border="1"> <tr> <th>W.V</th> <th>-25°C/+20°C</th> <th>-40°C/+20°C</th> <th>W.V</th> <th>-25°C/+20°C</th> <th>-40°C/+20°C</th> </tr> <tr> <td>10</td> <td>3</td> <td>4</td> <td>35</td> <td>2</td> <td>4</td> </tr> <tr> <td>16</td> <td>2</td> <td>4</td> <td>50</td> <td>2</td> <td>4</td> </tr> <tr> <td>25</td> <td>2</td> <td>4</td> <td>63</td> <td>2</td> <td>4</td> </tr> </table>	W.V	-25°C/+20°C	-40°C/+20°C	W.V	-25°C/+20°C	-40°C/+20°C	10	3	4	35	2	4	16	2	4	50	2	4	25	2	4	63	2	4
W.V	-25°C/+20°C	-40°C/+20°C	W.V	-25°C/+20°C	-40°C/+20°C																					
10	3	4	35	2	4																					
16	2	4	50	2	4																					
25	2	4	63	2	4																					
その他の特性はJIS C5101-4に準ずる	THE OTHER CHARACTERISTICS	THE OTHER CHARACTERISTICS ARE BASED ON JIS C 5101-4																								

■寸法表/CASE SIZE TABLE Unit : mm ■Ripple current [Max. Value mA] at 125°C 120Hz.

μF	W.V	10 (1A)		16 (1C)		25 (1E)		35 (1V)		50 (1H)		63 (1J)	
		φD×L	Ripple current	φD×L	Ripple current	φD×L	Ripple current	φD×L	Ripple current	φD×L	Ripple current	φD×L	Ripple current
1.0 (010)										8×11.5	10		
2.2 (2R2)										8×11.5	22		
3.3 (3R3)										8×11.5	27		
4.7 (4R7)										8×11.5	32		
10 (100)										8×11.5	47		
22 (220)										8×11.5	70		
33 (330)										8×11.5	85		
47 (470)										8×11.5	105	10×12.5	120
100 (101)						8×11.5	125	10×12.5	160	10×12.5	180	10×16	200
220 (221)	8×11.5	155	10×12.5	210	10×12.5	220	10×16	260	10×20	320	12.5×20	360	
330 (331)	10×12.5	220	10×12.5	250	10×16	300	10×20	350	12.5×20	430	12.5×25	480	
470 (471)	10×12.5	270	10×16	330	10×20	390	12.5×20	470	12.5×25	570	16×25	650	
1000 (102)	10×20	470	12.5×20	590	12.5×25	700	16×25	850	16×31.5	1030			
2200 (222)	12.5×25	820	16×25	1030	16×31.5	1210							
3300 (332)	16×25	1090	16×31.5	1330									
4700 (472)	16×31.5	1390											

■品番ご指定法/ HOW TO SPECIFY ITEM NUMBER



・この寸法表にないカスタム品も製造いたしますので、ご相談下さい。  
Produce custom product too, which are not found in these tables.



●広使用温度範囲130°C品

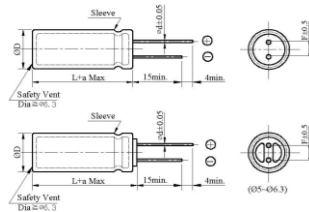
UCWKT シリーズ

JIS C 5101  
CE-04

■特徴

- UCWKT シリーズは、広温度範囲 (-40~+130°C) で極めて安定した性能をもつ製品です。
- 苛酷な使用条件が要求される自動車電装機器、通信機器、各種産業用機器等に最適です。

■寸法図/DIAGRAM OF DIMENSIONS



●WIDE OPERATING TEMP. RANGE TYPE 130°C USE

TYPE UCWKT

JIS C 5101  
CE-04

■FEATURES

- The UCWKT series constitutes products which show extraordinary stabilization in performance at a wide temperature range of -40 to +130°C.
- This series is most suitable for use in automobile electric devices, communications equipment and various types of industrial machinery and equipment which are subjected to rigorous using conditions.

ΦD	6.3	8	10	12.5	16	18
ΦD	ΦD + 0.5Max					
Φd	0.5	0.6	0.6	0.6	0.8	0.8
F	2.5	3.5	5.0	5.0	7.5	7.5
a	L + 1.5Max		≤35 L+1.5Max ≥40 L+2.0Max		L + 1.5Max	

■性能/PERFORMANCE SPECIFICATIONS

カテゴリ温度範囲	CATEGORY TEMPERATURE RANGE	-25~+130°C	-40~+130°C																										
標準静電容量許容差	STANDARD CAPACITANCE TOLERANCE	-20 ~ +20%																											
漏れ電流 (最大値)	LEAKAGE CURRENT (MAX. VALUE)	$I \leq 0.01CV$ or $2\mu A$ whichever is greater (10~100V) $I \leq 0.03CV + 10\mu A$ (200~450V) I: Leakage current (μA) C: Rated capacitance (μF) V: Rated voltage (V) Impresstheratedvoltagefor2minutes																											
損失角の正接 (最大値) (tan δ)	DISSIPATION FACTOR (MAX. VALUE) (tan δ)	<table border="1"> <tr> <th>Rated Voltage (V)</th> <th>10</th> <th>16</th> <th>25</th> <th>35</th> <th>50</th> <th>63</th> <th>100</th> <th>200</th> <th>250</th> <th>400</th> <th>420</th> <th>450</th> </tr> <tr> <td>tan δ (Max)</td> <td>0.20</td> <td>0.16</td> <td>0.14</td> <td>0.12</td> <td>0.10</td> <td>0.10</td> <td>0.09</td> <td>0.20</td> <td>0.20</td> <td>0.24</td> <td>0.24</td> <td>0.24</td> </tr> </table>		Rated Voltage (V)	10	16	25	35	50	63	100	200	250	400	420	450	tan δ (Max)	0.20	0.16	0.14	0.12	0.10	0.10	0.09	0.20	0.20	0.24	0.24	0.24
Rated Voltage (V)	10	16	25	35	50	63	100	200	250	400	420	450																	
tan δ (Max)	0.20	0.16	0.14	0.12	0.10	0.10	0.09	0.20	0.20	0.24	0.24	0.24																	
耐久性 130°C 1000~4000時間 定格使用電圧印加	ENDURANCE APPLICATION OF RATED OPERATING VOLTAGE AT 130°C FOR 1000~4000 HOURS.	The following specifications shall be satisfied when the capacitors are restored to 25°C after subjected to DC voltage with the rated ripple current is applied for 1,000~4,000 hours at 130°C. <table border="1"> <tr> <th>Capacitance change</th> <th>10~100 Vdc</th> <th>200~450 Vdc</th> <th>Case Size</th> <th>Lifetime (hours)</th> </tr> <tr> <td></td> <td>±30% of the initial value</td> <td>±20% of the initial value</td> <td>10~100V</td> <td>200~450</td> </tr> <tr> <td></td> <td></td> <td></td> <td>Φ=6.3</td> <td>1,000</td> </tr> <tr> <td>Dissipation factor (tan δ)</td> <td>±300% of the specified value</td> <td>±200% of the specified value</td> <td>Φ=8, 10</td> <td>2,000</td> </tr> <tr> <td>Leakage current</td> <td>±Specified value</td> <td>±Specified value</td> <td>Φ ≥ 12.5</td> <td>4,000</td> </tr> </table>		Capacitance change	10~100 Vdc	200~450 Vdc	Case Size	Lifetime (hours)		±30% of the initial value	±20% of the initial value	10~100V	200~450				Φ=6.3	1,000	Dissipation factor (tan δ)	±300% of the specified value	±200% of the specified value	Φ=8, 10	2,000	Leakage current	±Specified value	±Specified value	Φ ≥ 12.5	4,000	
Capacitance change	10~100 Vdc	200~450 Vdc	Case Size	Lifetime (hours)																									
	±30% of the initial value	±20% of the initial value	10~100V	200~450																									
			Φ=6.3	1,000																									
Dissipation factor (tan δ)	±300% of the specified value	±200% of the specified value	Φ=8, 10	2,000																									
Leakage current	±Specified value	±Specified value	Φ ≥ 12.5	4,000																									
低温特性 (+20°Cにおける120Hzのインピーダンスに対する比) (最大値)	ENDURANCE APPLICATION OF WITHOUT VOLTAGE FOR 1,000 HOURS.	The following requirements shall be satisfied when the capacitor are restored to 25°C after the rated voltage applied for 1,000 hours at 130°C without voltage applied. After test: UR to be applied for 30 minutes, 24 to 48 hours before measurement. <table border="1"> <tr> <th>Capacitance change</th> <th>10~100 Vdc</th> <th>200~450 Vdc</th> </tr> <tr> <td></td> <td>±30% of the initial value</td> <td>±20% of the initial value</td> </tr> <tr> <td>Dissipation factor (tan δ)</td> <td>±300% of the specified value</td> <td>±200% of the specified value</td> </tr> <tr> <td>Leakage current</td> <td>±Specified value</td> <td>±Specified value</td> </tr> </table>		Capacitance change	10~100 Vdc	200~450 Vdc		±30% of the initial value	±20% of the initial value	Dissipation factor (tan δ)	±300% of the specified value	±200% of the specified value	Leakage current	±Specified value	±Specified value														
Capacitance change	10~100 Vdc	200~450 Vdc																											
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Leakage current	±Specified value	±Specified value																											
その他の特性はJIS C 5101-4に準ずる	THE OTHER CHARACTERISTICS	THE OTHER CHARACTERISTICS ARE BASED ON JIS C 5101-4.																											

■定格リップル電流補正係数

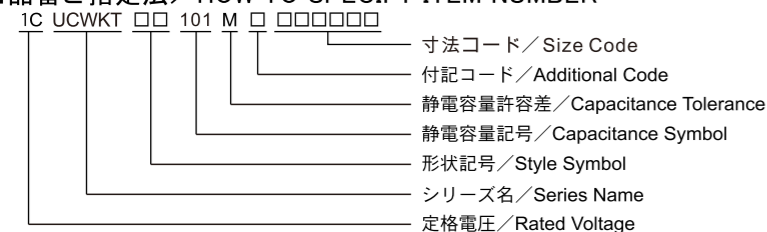
リップル周波数が標準品一覧表の規定値と異なる場合には、下表の係数を乗じた値以下でご使用下さい。  
 When the ripple frequency differs from the spicification shown in the list of standard products, multiply the value with the coefficient shown below, and use the products under the obtained value.

周波数補正係数/FREQUENCY CORRECTION FACTOR

Vdc	Cap (uF)	Frequency (Hz)			
		120K	1K	10K	≥100K
10 ~ 100	<100	0.40	0.75	0.90	1.00
	100 ~ 470	0.50	0.85	0.94	1.00
	>470	0.60	0.87	0.95	1.00

Vdc	Cap (uF)	Frequency (Hz)			
		120	1K	10K	100K
200 ~ 450	3.3~15	0.30	0.60	0.90	1.00
	22~100	0.50	0.80	0.90	1.00

■品番ご指定法/HOW TO SPECIFY ITEM NUMBER



■寸法表/CASE SIZE TABLE

uF	Vdc		10		16		25	
	ΦD × L	RC	ΦD × L	RC	ΦD × L	RC	ΦD × L	RC
220								
330	8×11.5	360	8×11.5	360	10×12.5	620	10×12.5	620
470	10×12.5	620	10×12.5	620	10×16	800	10×16	800
1000	10×20	960	10×20	960	12.5×20	1100	12.5×20	1100
2200	12.5×25	1430	12.5×25	1430	16×31.5	2300	16×31.5	2300
3300	16×25	1900	16×25	1900	16×35.5	2550	16×35.5	2550
4700	16×31.5	2300	16×31.5	2300				

uF	Vdc		35		50		63	
	ΦD × L	RC	ΦD × L	RC	ΦD × L	RC	ΦD × L	RC
4.7			8×11.5	100				
10			8×11.5	200				
22			8×11.5	260				
33			8×11.5	300	8×11.5	250	8×11.5	250
47			8×11.5	300	10×12.5	400	10×12.5	400
100	8×11.5	360	10×12.5	520	10×16	450	10×16	450
220	10×12.5	620	10×20	890	12.5×25	820	12.5×25	820
330	10×16	800	12.5×20	1000	12.5×30	1000	12.5×30	1000
470	10×25	960	12.5×25	1200	16×25	1500	16×25	1500
1000	12.5×30	1430	16×31.5	2180	18×35.5	1850	18×35.5	1850
1500	16×31.5	1800	18×35.5	2450	18×45	2350	18×45	2350
2200	16×35.5	2550	18×40	2800				
3300	18×35.5	2800						

uF	Vdc		100		200		250	
	ΦD × L	RC	ΦD × L	RC	ΦD × L	RC	ΦD × L	RC
4.7			6.3×11	100	8×11.5	115	8×11.5	115
5.6			8×11.5	130	8×11.5	140	8×11.5	140
6.8			8×11.5	130	8×11.5	140	8×11.5	140
10	8×16	200	8×16	200	8×16	220	8×16	220
15	8×16	210	8×16	220	8×20	245	8×20	245
22	8×16	220	8×20	300	10×16	320	10×16	320
33	10×12.5	260	10×20	320	10×25	350	10×25	350
47	10×16	330	10×25	345	12.5×20	375	12.5×20	375
56	10×20	350	10×30	370	12.5×25	400	12.5×25	400
68	10×25	400	12.5×25	450	16×20	480	16×20	480
82	10×30	435	12.5×30	485	16×25	505	16×25	505
100	12.5×25	670	16×25	600				
220	16×25	1100						
330	16×31.5	1300						
470	16×40	1650						

uF	Vdc		400		420		450	
	ΦD × L	RC	ΦD × L	RC	ΦD × L	RC	ΦD × L	RC
3.3	8×16	110	8×16	120	8×20	135	8×20	135
4.7	8×20	120	8×20	130	10×12.5	150	10×12.5	150
5.6	10×16	130	10×16	140	10×16	160	10×16	160
6.8	10×20	150	10×20	155	10×20	170	10×20	170
10	10×25	220	10×25	240	12.5×20	260	12.5×20	260
15	10×30	240	10×30	255	12.5×25	300	12.5×25	300
22	12.5×20	270	12.5×25	300	16×20	345	16×20	345
33	12.5×25	305	12.5×30	340				
47	16×25	400	16×31.5	445				
56	16×31.5	435						
68	16×35.5	480						

■Ripple Current [Max. value mA] at 130°C 100kHz



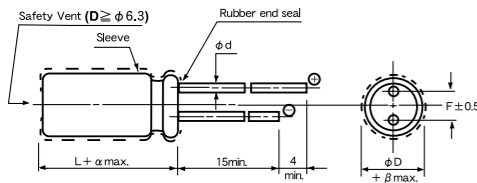
●中高圧105°C品

UCWHMシリーズ JIS C5101 CE-04

■特徴

- ・105°C ラジアルリードタイプの中高圧品です。
- ・小形産業機器用に最適な製品です。

■寸法図/DIAGRAM OF DIMENSIONS



●MEDIUM AND HIGH VOLTAGE PRODUCTS 105°C USE

TYPE UCWHM JIS C5101 CE-04

■FEATURES

- ・Medium and High-Voltage Product of radial-Lead Type to be used at 105°C
- ・For small industrial machineries and apparatus.

Unit : mm

φD	6.3	8	10	12.5	16	18
φd	0.5	0.6	0.6	0.6	0.8	0.8
F	2.5	3.5	5.0	5.0	7.5	7.5
β	0.5		1.0			

L < 20 α = 1.5  
L ≥ 20 α = 2

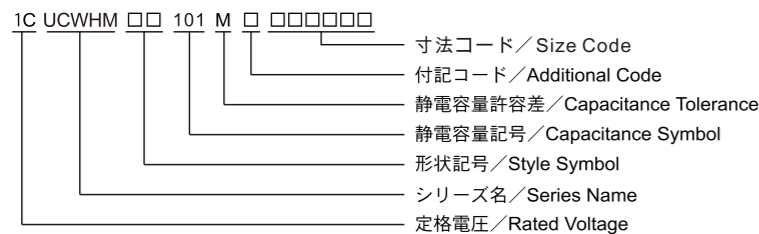
■性能/PERFORMANCE SPECIFICATIONS

カテゴリ温度範囲	CATEGORY TEMPERATURE RANGE	(160V~250V) -40°C~+105°C	(350V~450V) -25°C~+105°C
標準静電容量許容差	STANDARD CAPACITANCE TOLERANCE	-20%~+20% (120Hz)	
漏れ電流 (最大値)	LEAKAGE CURRENT (MAX. VALUE)	I=0.03CV OR 10μA WHICHEVER IS THE GREATER (after 2 minutes) C=RATED CAPACITANCE (μF) V=WORKING VOLTAGE (V)	
損失角の正接 (最大値) (tan δ)	DISSIPATION FACTOR (MAX. VALUE)	W. V	160~250 350~450
		tan δ	0.20 0.25
耐久性 105°C 2000時間 定格使用電圧印加	ENDURANCE APPLICATION OF RATED OPERATING VOLTAGE, AT 105°C FOR 2000HOURS.	CAPACITANCE CHANGE : LESS THAN 20% OF THE INITIAL MEASURED VALUE. DISSIPATION FACTOR : LESS THAN 200% OF THE INITIAL SPECIFIED VALUE. LEAKAGE CURRENT : LESS THAN THE INITIAL SPECIFIED VALUE.	
低温特性 (+20°Cにおける120Hzのインピーダンスに対する比) (最大値)	LOW TEMPERATURE STABILITY (RATIO OF IMPEDANCE AT COLD TO THAT AT 20°C, 120Hz. MAX. VALUE.)	W. V	-25°C/+20°C -40°C/+20°C
		160~250	3 6
		350~400	6
		450	15
その他の特性はJIS C5101-4に準ずる	THE OTHER CHARACTERISTICS	THE OTHER CHARACTERISTICS ARE BASED ON JIS C 5101-4	

■定格リップル電流周波数補正係数

CAP.	60Hz	120Hz	500Hz	1kHz	10kHz ≤
≤47 μF	0.80	1.00	1.20	1.30	1.50
47 μF <	0.80	1.00	1.10	1.15	1.20

■品番ご指定法/ HOW TO SPECIFY ITEM NUMBER



■寸法表/CASE SIZE TABLE

W.V (vdc)	Cap (μF)	φD×L (mm)	Ripple	
160	1.0	6.3 × 11	15	
	2.2	6.3 × 11	21	
	3.3	6.3 × 11	28	
	4.7	6.3 × 11	34	
	10	10 × 12.5	60	
	22	10 × 16	74	
	33	10 × 20	145	
	47	12.5 × 20	195	
	100	16 × 25	290	
	330	18 × 35.5	700	
200	1.0	6.3 × 11	15	
	2.2	6.3 × 11	21	
	3.3	6.3 × 11	28	
	4.7	8 × 11.5	39	
	6.8	8 × 11.5	41	
	10	8 × 11.5	50	
	10	10 × 12.5	60	
	10	10 × 16	74	
	15	10 × 16	82	
	22	10 × 20	120	
	33	10 × 20	160	
	33	12.5 × 20	175	
	47	12.5 × 20	195	
	68	16 × 20	265	
	68	16 × 25	270	
	100	16 × 20	270	
	100	16 × 25	335	
	150	16 × 31.5	420	
220	16 × 31.5	415		
220	16 × 35.5	500		
220	18 × 25	405		
220	18 × 35.5	575		
330	18 × 31.5	500		
330	18 × 40	630		
250	1.0	6.3 × 11	15	
	2.2	6.3 × 11	23	
	3.3	8 × 11.5	32	
	4.7	8 × 11.5	39	
	10	10 × 16	74	
	22	12.5 × 20	130	
	33	12.5 × 20	160	
	47	12.5 × 20	210	
	47	12.5 × 25	230	
	47	16 × 25	250	
	100	16 × 25	335	
	100	16 × 31.5	365	
	150	18 × 25	405	
	220	18 × 35.5	510	
	220	18 × 40	585	
	330	18 × 40	700	
	350	1.0	6.3 × 11	15
		2.2	8 × 11.5	26
3.3		10 × 12.5	38	
4.7		10 × 16	50	
10		10 × 20	80	

■Ripple Current [Max.Value mA] at 105°C 120Hz

W.V (vdc)	Cap (μF)	φD×L (mm)	Ripple	
350	22	12.5 × 20	130	
	33	16 × 25	195	
	47	16 × 25	230	
	100	18 × 31.5	375	
	1.0	6.3 × 11	15	
400	2.2	8 × 11.5	29	
	3.3	8 × 11.5	29	
	3.3	10 × 12.5	40	
	4.7	10 × 12.5	60	
	4.7	10 × 16	70	
	6.8	10 × 12.5	60	
	6.8	10 × 16	80	
	8.2	10 × 16	90	
	10	10 × 16	100	
	10	10 × 20	120	
	15	10 × 20	120	
	22	12.5 × 20	140	
	22	12.5 × 25	180	
	33	12.5 × 25	205	
	33	16 × 20	205	
	33	16 × 25	300	
	39	16 × 20	300	
	47	16 × 25	305	
	47	16 × 31.5	330	
	47	18 × 20	305	
	56	16 × 25	305	
	68	16 × 31.5	450	
	68	18 × 25	440	
	68	18 × 35.5	560	
	82	16 × 31.5	470	
	82	16 × 35.5	540	
	82	18 × 31.5	540	
	100	18 × 31.5	560	
	100	18 × 35.5	580	
	100	18 × 40	600	
	120	18 × 35.5	620	
	120	18 × 40	700	
	150	18 × 40	750	
	450	2.2	10 × 12.5	23
		3.3	10 × 16	31
4.7		10 × 16	35	
4.7		10 × 20	40	
10		12.5 × 20	140	
22		16 × 20	250	
22		16 × 25	260	
33		16 × 31.5	320	
47		16 × 31.5	330	
47		16 × 35.5	350	
68		18 × 31.5	450	
68		18 × 35.5	470	
82		18 × 35.5	530	
82		18 × 40	570	
100		18 × 40	630	
120	18 × 40	650		

・この寸法表にないカスタム品も製造いたしますので、ご相談下さい。  
Produce custom product too, which are not found in these tables.

●中高圧105°C品

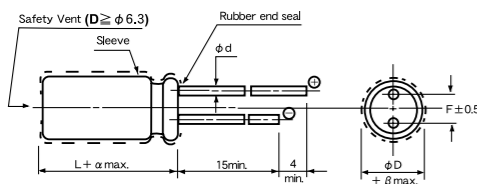
UCWHSシリーズ

JIS C5101  
CE-04

■特徴

- ・105°C ラジアルリードタイプの高圧品です。
- ・急速充電専用製品。

■寸法図/DIAGRAM OF DIMENSIONS



φD	6.3	8	10	12.5	16	18
φd	0.5	0.6	0.6	0.6	0.8	0.8
F	2.5	3.5	5.0	5.0	7.5	7.5
β	0.5		1.0			

L < 20 α = 1.5  
L ≥ 20 α = 2

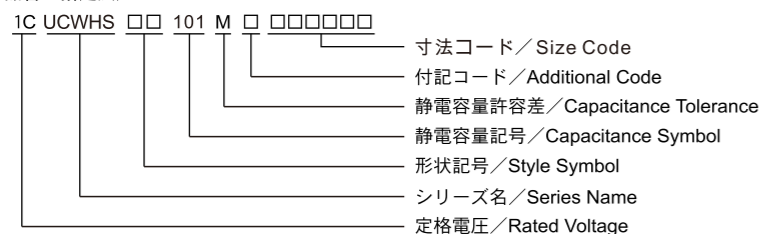
■性能/PERFORMANCE SPECIFICATIONS

カテゴリ温度範囲	CATEGORY TEMPERATURE RANGE	-40°C ~ +105°C			
標準静電容量許容差	STANDARD CAPACITANCE TOLERANCE	-20% ~ +20% (120Hz)			
漏れ電流 (最大値)	LEAKAGE CURRENT (MAX. VALUE)	I=0.03CV OR 10μA WHICHEVER IS THE GREATER (after 2 minutes)		C=RATED CAPACITANCE (μF) V=WORKING VOLTAGE (V)	
損失角の正接 (最大値) (tan δ)	DISSIPATION FACTOR (MAX. VALUE)	W. V	400	450	500
		tan δ	0.15	0.18	0.20
耐久性 105°C 3000時間 定格使用電圧印加 (φD ≤ 6.3 : 2000時間)	ENDURANCE APPLICATION OF RATED OPERATING VOLTAGE, AT 105°C FOR 3000 HOURS	CAPACITANCE CHANGE : LESS THAN 20% OF THE INITIAL MEASURED VALUE. DISSIPATION FACTOR : LESS THAN 200% OF THE INITIAL SPECIFIED VALUE. LEAKAGE CURRENT : LESS THAN THE INITIAL SPECIFIED VALUE.			
低温特性 (+20°Cにおける120Hzのインピーダンスに対する比) (最大値)	LOW TEMPERATURE STABILITY (RATIO OF IMPEDANCE AT COLD TO THAT AT 20°C, 120Hz. MAX. VALUE.)	W. V	400	450	500
		-40°C / +20°C	7	9	9
その他の特性はJIS C5101-4に準ずる	THE OTHER CHARACTERISTICS	THE OTHER CHARACTERISTICS ARE BASED ON JIS C 5101-4			

■定格リップル電流周波数補正係数

Frequency	50	120	1K	10-50K	100K
Coefficient	0.4	0.5	0.8	0.9	1.0

■品番指定法/ HOW TO SPECIFY ITEM NUMBER



■寸法表/CASE SIZE TABLE

■Impedance [Max. Value Ω] at 25°C 100kHz  
■Ripple Current [Max. Value mA] at 105°C 100kHz

W.V (Vdc)	Cap. (μF)	φD × L (mm)	Impedance	Ripple Current
400	4.7	6.3x12	9.60	116
	6.8	6.3x13	8.40	128
	8.2	6.3x15	7.50	171
	10	8x11.5	5.40	190
	12	8x13	4.20	230
	15	8x15	4.00	260
	18	8x17	3.20	295
	22	10x13.5	3.10	314
	22	8x18	3.10	314
	27	10x15	3.00	370
	33	10x18	2.50	440
	47	10x23	2.20	562
	47	13x19	1.98	616
	68	16x20	1.40	1000
	82	18x20	1.08	1180
	100	18x25	0.90	1318
	450	4.7	6.3x16	15.7
4.7		8x10	15.7	111
6.8		10x10	12.8	128
8.2		8x13	9.27	163
10		8x15	8.21	190
10		10x11	8.21	190
12		10x13	6.38	228
15		10x13.5	6.08	251
18		10x15	5.78	295
22		10x17	5.48	314
27		10x20	4.56	370
33		10x35	3.26	440
47		10x45	2.71	616
68	10x50	1.64	1000	
82	16x25	1.37	1178	
100	18x25	1.08	1226	

W.V (Vdc)	Cap. (μF)	φD × L (mm)	Impedance	Ripple Current
500	4.7	6.3x16	17.5	80
	4.7	8x10	17.5	80
	6.8	10x10	15.3	88
	8.2	10x10	11.13	110
	10	10x13	9.85	145
	12	10x13.5	7.66	206
	15	10x15	7.30	220
	18	10x17	6.78	240
	22	12.5x17	5.65	312
	27	10x23	5.47	348
	33	12.5x20	4.28	400
	47	16x20	3.25	560
	68	18x20	2.30	800
82	18x25	1.97	968	

●高リップル・長寿命品(105°C)

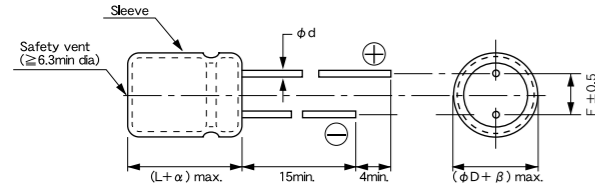
UCWVシリーズ

JIS C5101  
CE-04

■特徴

- ・電子バラスト、電源入力平滑用などに最適
- ・105°C 5,000時間を保証。
- ・基板洗浄タイプではありません。

■寸法図/DIAGRAM OF DIMENSIONS



φD	10	12.5	16	18
φd	0.6	0.6	0.8	0.8
F	5.0	5.0	7.5	7.5
α	L<20 : α=1.5, L≥20 : α=2			
β	0.5	1.0	1.0	1.0

■性能/PERFORMANCE SPECIFICATIONS

カテゴリ温度範囲	CATEGORY TEMPERATURE RANGE	-25°C~+105°C
標準静電容量許容差	STANDARD CAPACITANCE TOLERANCE	-20%~+20% (20°C, 120Hz)
漏れ電流(最大値)	LEAKAGE CURRENT (MAX. VALUE)	I=0.02CV or 10μA WHICHEVER IS THE GREATER (after 2 minutes) C=RATED CAPACITANCE (μF) V=WORKING VOLTAGE (V)
損失角の正接(最大値)(tan δ)	DISSIPATION FACTOR (MAX. VALUE) (tan δ)	W.V 200~250V 350~450V tan δ 0.20 0.25 (20°C, 120Hz)
耐久性 105°C 5000時間	ENDURANCE	After applying rated voltage at 105°C for 5000 hours. The capacitors shall meet the following requirements. Capacitance Change Within ±20% of the initial value Dissipation Factor Less than 200% of the initial specified value Leakage Current Less than the initial specified value
低温特性 (+20°Cにおける120Hzのインピーダンスに対する比(最大値))	LOW TEMPERATURE STABILITY (RATIO OF IMPEDANCE AT COLD TO THAT AT 20°C, 120Hz. MAX. VALUE.)	インピーダンス比/Impedance ratio (at 120Hz) W.V. 200 250 350 400 450 Z(-25°C)/Z(+20°C) 3 3 6 6 6
その他の特性はJIS C5101-4に準ずる	THE OTHER CHARACTERISTICS	The other characteristics are based on JIS C 5101-4.

■定格リップル電流補正係数

リップル周波数が標準品一覧表の規定値と異なる場合には、下表の係数を乗じた値以下でご使用下さい。  
When the ripple frequency differs from the specification shown in the list of standard products, multiply the value with the coefficient shown below, and use the products under the obtained value.

周波数補正係数/FREQUENCY CORRECTION FACTOR

	Frequency(Hz)					
	50	120	300	1k	10k	100k
Frequency Coefficient	0.60	1.00	1.20	1.60	1.80	2.00

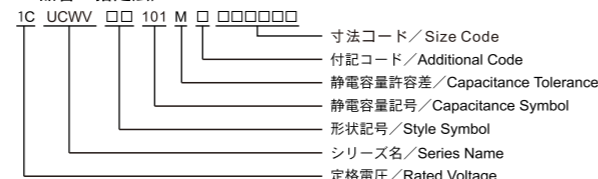
■寸法表 / CASE SIZE TABLE

W.V. μF	ITEM NUMBER	200 (2D)		250 (2E)			
		φD×L (mm)	Ripple current (mA)	ITEM NUMBER	φD×L (mm)	Ripple current (mA)	
10(100)	-	-	-	2EUTWV100M□G16	10×16	130	260
22(220)	2DUTWV220M□G16	10×16	140 280	2EUTWV220M□G20	10×20	220	440
33(330)	2DUTWV330M□G20	10×20	230 460	2EUTWV330M□H20	12.5×20	270	540
47(470)	2DUTWV470M□H20	12.5×20	300 600	2EUTWV470M□H25	12.5×25	320	640
68(680)	2DUTWV680M□H25	12.5×25	340 680	2EUTWV680M□K25	16×25	410	820
100(101)	2DUTWV101M□K25	16×25	430 860	2EUTWV101M□M25	18×25	500	1000

W.V. μF	ITEM NUMBER	350 (2V)		400 (2G)			
		φD×L (mm)	Ripple current (mA)	ITEM NUMBER	φD×L (mm)	Ripple current (mA)	
3.3(3R3)	2VUTWV3R3M□G16	10×16	90 180	2GUTWV3R3M□G16	10×16	90	180
4.7(4R7)	2VUTWV4R7M□G16	10×16	110 220	2GUTWV4R7M□G16	10×16	110	220
6.8(6R8)	2VUTWV6R8M□G16	10×16	110 220	2GUTWV6R8M□G16	10×16	110	220
10(100)	2VUTWV100M□G20	10×20	140 280	2GUTWV100M□G20	10×20	140	280
22(220)	2VUTWV220M□H20	12.5×20	175 350	2GUTWV220M□H25	12.5×25	215	430
33(330)	2VUTWV330M□H25	12.5×25	215 430	2GUTWV330M□K25	16×25	320	640
47(470)	2VUTWV470M□K25	16×25	330 660	2GUTWV470M□M25	18×25	420	840
68(680)	2VUTWV680M□M25	18×25	425 850	-	-	-	-

W.V. μF	ITEM NUMBER	450 (2W)	
		φD×L (mm)	Ripple current (mA)
6.8(6R8)	2WUTWV6R8M□G20	10×20	75 150
10(100)	2WUTWV100M□H20	12.5×20	150 300
22(220)	2WUTWV220M□K25	16×25	275 550
33(330)	2WUTWV330M□M25	18×25	350 700

■品番ご指定法/ HOW TO SPECIFY ITEM NUMBER



・この寸法表にないカスタム品も製造いたしますので、ご相談下さい。  
Produce custom product too, which are not found in these tables.

●高リップル・長寿命品 (105°C)

UCWBXシリーズ

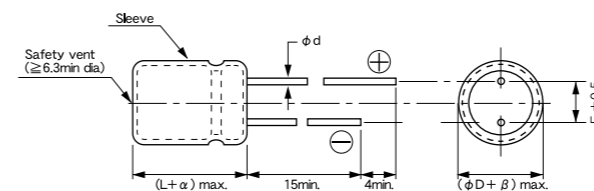
JIS C5101  
CE-04

(基板洗浄タイプではありません)

■特徴

- ・電子バラスト、電源入力平滑用などに最適
- ・105°C 10,000時間を保証。

■寸法図/DIAGRAM OF DIMENSIONS



φD	10	12.5	16	18
φd	0.6	0.6	0.8	0.8
F	5.0	5.0	7.5	7.5
α	L<20 : α=1.5, L≥20 : α=2			
β	0.5	1.0	1.0	1.0

■性能/PERFORMANCE SPECIFICATIONS

カテゴリ温度範囲	CATEGORY TEMPERATURE RANGE	200~400V:-40°C~+105°C, 450V:-25°C~+105°C
標準静電容量許容差	STANDARD CAPACITANCE TOLERANCE	-20%~+20% (20°C, 120Hz)
漏れ電流(最大値)	LEAKAGE CURRENT (MAX. VALUE)	I=0.02CV OR 10μA WHICHEVER IS THE GREATER (after 2 minutes) I : IEAKAGE CURRENT (μA). C : RATED CAPACITANCE (μF), V : RATED VOLTAGE (V)
損失角の正接(最大値)(tan δ)	DISSIPATION FACTOR (MAX. VALUE) (tan δ)	W.V 200~250V 400~450V tan δ 0.20 0.25 (20°C, 120Hz)
耐久性	ENDURANCE	After applying rated voltage with rated ripple current for 10,000 hrs (φ10 : 8,000 hrs) at 105°C, the capacitors shall meet the following requirements. Capacitance Change Within ±20% of the initial value Dissipation Factor Less than 200% of the initial specified value Leakage Current Less than the initial specified value
低温特性 (+20°Cにおける120Hzのインピーダンスに対する比(最大値))	LOW TEMPERATURE STABILITY (RATIO OF IMPEDANCE AT COLD TO THAT AT 20°C, 120Hz. MAX. VALUE)	インピーダンス比/Impedance ratio (at 120Hz) W.V 200 250 400 450 Z(-25°C)/Z(+20°C) 3 3 6 6
その他の特性はJIS C5101-4に準ずる	THE OTHER CHARACTERISTICS	The other characteristics are based on JIS C 5101-4.

■定格リップル電流補正係数

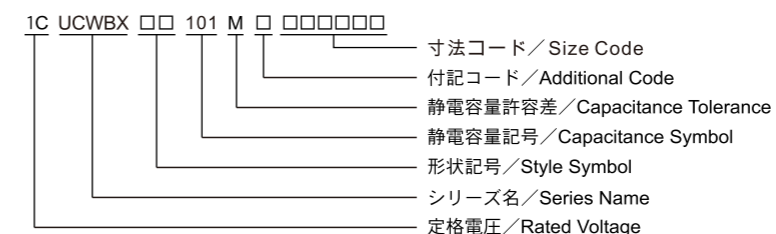
リップル周波数が標準品一覧表の規定値と異なる場合には、下表の係数を乗じた値以下でご使用下さい。

When the ripple frequency differs from the specification shown in the list of standard products, multiply the value with the coefficient shown below, and use the products under the obtained value.

周波数補正係数/FREQUENCY CORRECTION FACTOR

	Frequency (Hz)					
	50	120	300	1k	10k	100k
Frequency Coefficient	0.60	1.00	1.20	1.60	1.80	2.00

■品番ご指定法/ HOW TO SPECIFY ITEM NUMBER





■寸法表/CASE SIZE TABLE

■Ripple Current [Max.Value mA] at 105°C 120Hz

W.V (vdc)	Cap (μF)	(μF) ΦD×L (mm)	Ripple
200	22	10 × 20	200
	27	10 × 16	245
	33	10 × 20	260
	39	10 × 20	320
	47	12.5 × 20	390
	56	10 × 25	410
	68	10 × 30	470
	68	12.5 × 20	470
	82	10 × 35	540
	82	12.5 × 25	540
	82	16 × 20	550
	100	10 × 40	620
	100	16 × 20	630
	120	10 × 45	710
	120	12.5 × 30	700
	120	16 × 20	690
	150	12.5 × 35	840
	150	16 × 25	840
	150	18 × 20	830
	180	12.5 × 40	950
220	12.5 × 50	1090	
220	16 × 31.5	1080	
220	18 × 25	1050	
220	18 × 31.5	1050	
270	16 × 35.5	1250	
270	18 × 31.5	1230	
330	18 × 35.5	1430	
390	18 × 40	1600	
250	22	10 × 16	140
	22	10 × 20	200
	27	10 × 20	220
	33	12.5 × 20	320
	39	10 × 25	300
	47	10 × 30	350
	47	12.5 × 20	390
	56	10 × 35	420
	68	10 × 40	480
	68	12.5 × 25	470
	68	16 × 20	520
	82	10 × 45	510
	82	12.5 × 30	510
	82	16 × 20	550
	100	12.5 × 35	680
	100	16 × 25	600
	100	18 × 20	650
	120	12.5 × 40	730
	120	16 × 25	720
	150	12.5 × 50	860
150	16 × 31.5	860	
150	18 × 25	860	
180	16 × 35.5	1000	
180	18 × 31.5	950	
220	18 × 35.5	1130	
270	18 × 40	1350	
400	10	10 × 16	110
	10	10 × 20	140
	15	10 × 20	150
	15	12.5 × 20	220
	18	10 × 25	170
	22	10 × 30	200
	22	12.5 × 20	260
	27	10 × 35	250

W.V (vdc)	Cap (μF)	(μF) ΦD×L (mm)	Ripple
400	27	12.5 × 20	240
	33	10 × 40	300
	33	12.5 × 25	290
	33	16 × 20	360
	39	10 × 45	340
	39	12.5 × 30	330
	39	16 × 20	330
	47	10 × 50	390
	47	12.5 × 35	400
	47	16 × 25	470
	47	18 × 20	450
	56	12.5 × 40	500
	56	16 × 25	470
	56	18 × 20	450
	68	12.5 × 45	560
	68	16 × 31.5	540
	68	18 × 25	585
	82	12.5 × 50	630
	82	18 × 25	585
	82	18 × 31.5	610
100	16 × 35.5	760	
100	18 × 31.5	765	
120	18 × 31.5	765	
120	18 × 35.5	865	
150	18 × 40	950	
6.8	10 × 16	90	
6.8	10 × 20	110	
10	12.5 × 20	180	
12	10 × 20	130	
15	10 × 25	150	
15	12.5 × 25	240	
18	10 × 30	190	
22	10 × 35	230	
22	12.5 × 20	230	
22	16 × 20	290	
27	10 × 40	280	
27	12.5 × 25	270	
33	10 × 45	320	
33	12.5 × 30	320	
33	16 × 20	310	
33	16 × 25	390	
33	18 × 20	380	
39	10 × 50	370	
39	12.5 × 35	370	
47	12.5 × 40	400	
47	16 × 25	390	
47	18 × 20	380	
47	18 × 25	480	
56	12.5 × 45	500	
56	16 × 31.5	500	
68	12.5 × 50	600	
68	16 × 35.5	600	
68	18 × 25	480	
68	18 × 31.5	630	
82	18 × 31.5	650	
82	18 × 35.5	715	
100	18 × 35.5	715	
100	18 × 40	800	
120	18 × 40	880	

・この寸法表にないカスタム品も製造いたしますので、ご相談下さい。  
Produce custom product too, which are not found in these tables.

●高リップル・長寿命品 (105°C)

●HIGH RIPPLE CURRENT & LONG LIFE TYPE (105°C)

**UCWBAシリーズ** JIS C5101 CE-04  
(基板洗浄タイプではありません)

**TYPE UCWBA** JIS C5101 CE-04  
(Unsuitable washing product)

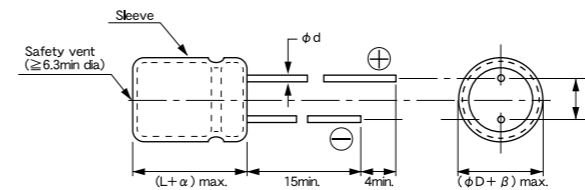
■特徴

- ・電子バラスト、電源入力平滑用などに最適
- ・105°C 12,000時間を保証。

■FEATURES

- ・ For Electronic Ballast, Power Supply etc.
- ・ This product is the guaranteed service life of 12,000 hours at 105°C.

■寸法図/DIAGRAM OF DIMENSIONS



Unit: mm

ΦD	10	12.5	16	18
φd	0.6	0.6	0.8	0.8
F	5.0	5	7.5	7.5
α	L<20 : α=1.5, L≥20 : α=2			
β	0.5	1.0	1.0	1.0

■性能/PERFORMANCE SPECIFICATIONS

カテゴリ温度範囲	CATEGORY TEMPERATURE RANGE	160~400V : -40°C~+105°C, 420~450V : -25°C ~ +105°C					
標準静電容量許容差	STANDARD CAPACITANCE TOLERANCE	-20 ~ +20% (20°C, 120Hz)					
漏れ電流 (最大値)	LEAKAGE CURRENT (MAX. VALUE)	I=0.02CV or 10μA Whichever is the greater (After 2 minutes) I: leakage Current(μA), C:Rated Capacitance(μF), V: Rated Voltage(V)					
損失角の正接 (最大値) (tan δ)	DISSIPATION FACTOR (MAX.VALUE) (tan δ)	W.V	160~250V	350~450V	(20°C, 120Hz)		
耐久性	ENDURANCE	After applying rated voltage for 12,000 hrs (≦20L 10,000hrs) at 105°C, the capacitors shall meet the following requirements.					
		Capacitance Change	Within ±20% of the initial value				
		Dissipation Factor	Less than 200% of the initial specified value				
		Leakage Current	Less than the initial specified value				
低温特性 (+20°Cにおける120Hzのインピーダンスに対する比) (最大値)	LOW TEMPERATURE STABILITY (RATIO OF IMPEDANCE AT COLD TO THAT) (AT 20°C, 120Hz. MAX.VALUE.)	W.V	200	250	350	400	400
その他の特性はJIS C5101-4に準ずる	THE OTHER CHARACTERISTICS	Z(-25°C)/Z(+20°C)	3	3	5	5	6
		The other characteristics are based on JIS C 5101-4.					

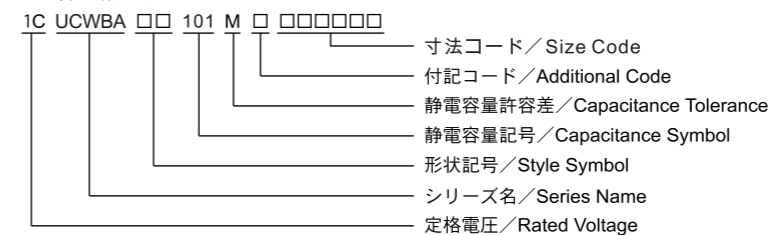
■定格リップル電流補正係数

リップル周波数が標準品一覧表の規定値と異なる場合には、下表の係数を乗じた値以下でご使用下さい。  
When the ripple frequency differs from the spicification shown in the list of standard products, multiply the value with the coefficient shown below, and use the products under the obtained value.

周波数補正係数/ FREQUENCY CORRECTION FACTOR

Frequency Coefficient	Frequency (Hz)					
	50	120	300	1k	10k	100k
	0.60	1.00	1.20	1.60	1.60	2.00

■品番指定法/ HOW TO SPECIFY ITEM NUMBER



■寸法表/CASE SIZE TABLE

W.V. (VDC)	Cap. ( $\mu$ F)	$\phi$ D×L (mm)	Ripple (mA)
200	27	10×16	195
	39	10×20	250
	56	10×25	330
	68	10×30	390
	68	12.5×20	385
	100	10×35	500
	100	12.5×25	550
	120	10×40	570
	120	10×45	590
	120	12.5×30	600
	120	16×20	610
	150	10×50	690
	150	12.5×35	700
	180	12.5×40	800
	180	16×25	820
	180	18×20	820
	220	12.5×45	1000
	220	16×31.5	950
	220	18×25	950
	270	16×35.5	1100
330	16×40	1300	
330	18×31.5	1300	
390	16×45	1400	
390	18×35.5	1400	
470	16×50	1600	
470	18×40	1600	
560	18×50	1750	
250	22	10×16	185
	33	10×20	240
	47	10×25	315
	56	12.5×20	430
	68	10×35	430
	82	10×40	495
	82	12.5×25	500
	82	16×20	600
	100	10×50	585
	100	12.5×35	600
	120	12.5×40	700
	120	16×25	755
	120	18×20	730
	150	12.5×45	900
	150	16×31.5	900
	180	12.5×50	1000
	180	18×25	900
	220	16×35.5	1050
	220	18×31.5	1100
	270	16×45	1310
270	18×35.5	1300	
330	16×50	1475	
330	18×40	1460	
390	18×50	1600	

■Ripple Current [Max.Value mA] at 105°C 120Hz

W.V. (VDC)	Cap. ( $\mu$ F)	$\phi$ D×L (mm)	Ripple (mA)
400	10	10×16	125
	15	10×20	170
	22	10×25	215
	27	10×30	255
	27	12.5×20	280
	33	10×35	300
	39	10×40	340
	39	12.5×25	350
	47	12.5×30	455
	47	16×20	435
	56	10×50	440
	56	12.5×35	480
	56	18×20	480
	68	12.5×40	600
	68	16×25	570
	82	12.5×45	680
	82	16×31.5	670
	82	18×25	640
	100	16×35.5	760
	120	16×40	860
120	18×31.5	840	
150	16×50	990	
150	18×40	985	
180	18×45	1090	
220	18×50	1200	
450	6.8	10×16	105
	12	10×20	150
	15	10×25	185
	18	10×30	215
	22	10×35	250
	22	12.5×20	230
	27	10×40	290
	27	12.5×25	300
	33	10×45	320
	33	12.5×30	320
	33	16×20	320
	39	10×50	375
	39	12.5×35	400
	47	12.5×40	525
	47	16×25	500
	47	18×20	380
	56	12.5×45	590
	56	16×31.5	585
	68	12.5×50	670
	68	16×35.5	660
68	18×25	480	
82	16×40	750	
82	18×31.5	730	
100	16×50	855	
100	18×35.5	835	
120	18×40	930	
150	18×50	1050	

・この寸法表にないカスタム品も製造いたしますので、ご相談下さい。  
Produce custom product too, which are not found in these table.

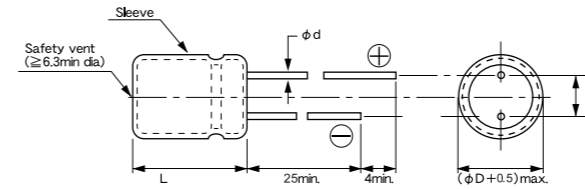
●高リップル・長寿命品 (105°C)

**UCWHFシリーズ** JIS C5101 CE-04  
(基板洗浄タイプではありません)

■特徴

・高周波低抵抗2000~5000H

■寸法図/DIAGRAM OF DIMENSIONS



●HIGH RIPPLE CURRENT & LONG LIFE TYPE (105°C)

**TYPE UCWHF** JIS C5101 CE-04  
(Unsuitable washing product)

■FEATURES

・ High frequency low impedance 2000~5000H

Unit: mm

$\phi$ D	10	12.5	16	18
$\phi$ d	0.6	0.6	0.8	0.8
F	5.0	5	7.5	7.5
$\alpha$	L<20 : $\alpha=1.5$ , L $\geq$ 20 : $\alpha=2$			
$\beta$	0.5	1.0	1.0	1.0

■性能/PERFORMANCE SPECIFICATIONS

カテゴリ温度範囲	CATEGORY TEMPERATURE RANGE	160~400V : -40°C~+105°C, 420~450V : -25°C ~ +105°C					
標準静電容量許容差	STANDARD CAPACITANCE TOLERANCE	-20 ~ +20% (20°C, 120Hz)					
漏れ電流 (最大値)	LEAKAGE CURRENT (MAX. VALUE)	I=0.02CV or 10 $\mu$ A Whichever is the greater (After 2 minutes) I: leakage Current( $\mu$ A), C:Rated Capacitance( $\mu$ F), V: Rated Voltage(V)					
損失角の正接 (最大値) (tan $\delta$ )	DISSIPATION FACTOR (MAX.VALUE) (tan $\delta$ )	W.V	160~250V	350~450V	(20°C, 120Hz)		
耐 久 性	ENDURANCE	After applying rated voltage for 5000Hr.( $\phi$ 6.3~8 2000Hr; $\phi$ 10 3000Hr) at 105°C, the capacitors shall meet the following requirements.					
		Capacitance Change	Within $\pm$ 20% of the initial value				
		Dissipation Factor	Less than 200% of the initial specified value				
		Leakage Current	Less than the initial specified value				
低温特性 (+20°Cにおける120Hzのインピーダンスに対する比) (最大値)	LOW TEMPERATURE STABILITY (RATIO OF IMPEDANCE AT COLD TO THAT) (AT 20°C, 120Hz. MAX.VALUE.)	W.V	200	250	350	400	450
		Z(-25°C)/Z(+20°C)	3	3	5	5	8
その他の特性はJIS C5101-4に準ずる	THE OTHER CHARACTERISTICS	The other characteristics are based on JIS C 5101-4.					

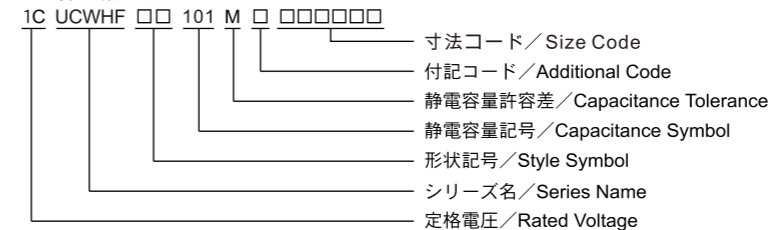
■定格リップル電流補正係数

リップル周波数が標準品一覧表の規定値と異なる場合には、下表の係数を乗じた値以下でご使用下さい。  
When the ripple frequency differs from the spicification shown in the list of standard products, multiply the value with the coefficient shown below, and use the products under the obtained value.

周波数補正係数/ FREQUENCY CORRECTION FACTOR

Frequency Coefficient	Frequency (Hz)					
	50	120	300	1k	10k	100k
	0.60	1.00	1.20	1.60	1.60	2.00

■品番指定法/ HOW TO SPECIFY ITEM NUMBER



■寸法表/CASE SIZE TABLE

■Ripple Current [Max.Value mA] at 105°C 120Hz

Vdc μF	160V		200/220V		250V		350V		400V/420V		450V		500V	
	D*L	Ripple	D*L	Ripple	D*L	Ripple	D*L	Ripple	D*L	Ripple	D*L	Ripple	D*L	Ripple
0.47	5*11	12	5*11	10	5*11	11	5*11	12	5*11	12	5*11	11	6.3*11	10
1	5*11	17	5*11	15	5*11	16	5*11	17	6.3/8*11	20/23	6.3/8*12	19/22	6.3/8*12	18/20
2.2	5/6.3*11	21/33	5/6.3*11	22/25	6.3*11	27	6.3*11	29	6.3/8*12	30/35	6.3/8*12	28/32	8*12	30
3.3	6.3*11/8*12	35/36	6.3*11	31	6.3*11	34	6.3*12	36	6.3*11/12	37	8*12	40	8/10*12	37/41
4.7	6.3/8*12	36/48	6.3/8*12	38/44	6.3/8*12	42/48	6.3/8*12	43/49	6.3*12~15	45/50	8/10*12	47/53	10*12	49
5.6	6.3/8*12	39/45	6.3/8*12	42/48	8*12	51	8*12	54	8/10*12	56/64	8*16	58	10*14	57
6.8	6.3/8*12	43/49	6.3/8*12	46/53	8*12	57	8*14	64	8*12~16	62/66	10*14	68	10*16	67
8.2	8*12	54	8*12	58	8*12	62	8*14	70	8*13~16	73/77	10*16	80	10*20	81
10	8/10*12	83/67	8/10*12	64/72	8*14	73	10*12	81	8*13~16	78~85	10*16/20	88/97	10*25	99
12	8/10*12	65/74	8/10*12	70/79	10*12/16	78/88	8*16	89	10*12~20	85~106	13*16	101	13*20	102
15	8*14	78	8*14	83	8*20	105	8*20	110	10*16~20	105~116	10*20	106	13*20	112
22	10*12/16	100/113	8*20	118	10*16/20	130/143	10*25	165	10*15~20	114~130	13*20	135	13*20	125
33	10*12/16	100/113	10*16/20	147/162	13*16	149	13*20	171	13*20~25	159~184	16*20	183	13*25	167
47	10*20	181	10*20/25	194/214	13*20	201	13*20	210	13*20~25	220~243	13*25/30	222~240	13*35	239
56	10*25	219	10/13*25	234/267	13*20	242	13*25	289	16*19~25	240~269	16*20~25	224~246	16*25	228
68	13*20	250	13*20	267	13*30	345	16*25	369	13*30	314	16*25~30	293~318	16*30	294
82	13*25	275	13*25	294	16*25	353	16*25	369	16*25	321	18*18	271	18*25	340
100	13*30	334/362	13*30	357/387	16*25/30	428/463	16*35	518	18*20~22	310~323	16*35	411	16*35	440
120	16*20/25	337/371	16*20/25	360/396	18*25	453	18*30	512	16*35	411	16*35	411	16*35	440
150	16*25/30	454/492	16*25/30	485/526	18*30	608	18*36	680	16*35	460~393	16*36	455	18*36	445
180	18*25/30	497/539	16*30	576	18*36	713	18*40	780	18*30	512	22*25~30	547~590	22*30	538
220	18*25/30	527/570	18*30/36	609/660	18*40	747	22*35	806	18*30	512	22*30	538	22*35	532
270	18*30	685	18*36	808	18*40	915	22*40	1046	16*35	605	18*31~40	545~610	18*45	544
330	18*30	771	18*36	893	18*40	945	22*40	1046	18*30	668	22*30	590	22*40	628
390	18*32	793	22*30/35	905/967	18*45	1067	22*45	1218	18*30	668	22*30	590	22*40	628
470	18*36	908	18*40	1018	22*35	1045	22*45	1218	18*30	668	22*30	590	22*40	628
560	18*40	1045	22*35	1117	22*40	1204	22*50	1388	18*30	668	22*30	590	22*40	628
680	18*45	1203	18*50	1350	22*40	1268	22*45	1268	18*30	668	22*30	590	22*40	628
820	22*35	1178	22*40	1335	22*40	1321	25*50	1618	18*30	668	22*30	590	22*40	628
1000	22*45	1592	22*50	1785	22*40	1392	25*50	1618	18*30	668	22*30	590	22*40	628

Maximum Ripple Current: Unit mA.rms,105°C 120Hz Size Dφ x L (mm)

●高さ7mm標準品

**UCMシリーズ** JIS C5101  
**UCMSシリーズ** CE-04 (耐洗浄品)

■特徴

・高さ寸法を7mmに統一し外径φ4のものからあります。このため機器の実装密度が高くできてセットの小形化に役立ちます。

■性能/PERFORMANCE SPECIFICATIONS

カテゴリ温度範囲	CATEGORY TEMPERATURE RANGE	-40°C~+85°C
標準静電容量許容差	STANDARD CAPACITANCE TOLERANCE	-20%~+20% (120Hz)
漏れ電流 (最大値)	LEAKAGE CURRENT (MAX. VALUE)	I=0.01CV OR 3μA WHICHEVER IS THE GREATER (after 2 minutes) C=RATED CAPACITANCE (μF) V=WORKING VOLTAGE (V)
損失角の正接 (最大値) (tan δ)	DISSIPATION FACTOR (MAX. VALUE)	W.V 4 6.3 10 16 25 35 50 tan δ 0.35 0.25 0.20 0.17 0.15 0.13 0.10
耐久性 85°C 1000時間 定格使用電圧印加	ENDURANCE APPLICATION OF RATED OPERATING VOLTAGE, AT 85°C FOR 1000HOURS.	CAPACITANCE CHANGE : LESS THAN 20% OF THE INITIAL MEASURED VALUE. DISSIPATION FACTOR : LESS THAN 200% OF THE INITIAL SPECIFIED VALUE. LEAKAGE CURRENT : LESS THAN THE INITIAL SPECIFIED VALUE.
低温特性 (+20°Cにおける120Hzのインピーダンスに対する比) (最大値)	LOW TEMPERATURE STABILITY (RATIO OF IMPEDANCE AT COLD TO THAT AT 20°C, 120Hz. MAX. VALUE.)	W.V -25°C/+20°C -40°C/+20°C W.V -25°C/+20°C -40°C/+20°C 4 7 15 25 2 4 6.3 4 10 35 2 4 10 3 8 50 2 3 16 2 6
その他の特性はJIS C5101-4に準ずる	THE OTHER CHARACTERISTICS	THE OTHER CHARACTERISTICS ARE BASED ON JIS C 5101-4

●7mm HEIGHT STANDARDIZED TYPE

**TYPE UCM** JIS C5101  
**TYPE UCMS** CE-04 (Washable product)

■FEATURES

・Height dimension is standardized to 7mm, and products of an outside diameter from 4φ are available. This small height enables dense actual mounting of capacitors on equipment and are useful to make the equipment more smaller or thinner.

●高さ5mm超小形製品

**UCXシリーズ** JIS C5101  
CE-04 (耐洗浄品)

■特徴

・公称高さ寸法を5mmに統一した超小形の電解コンデンサで超小形機器、薄型機器へのご使用には最適なシリーズです。

■性能/PERFORMANCE SPECIFICATIONS

カテゴリ温度範囲	CATEGORY TEMPERATURE RANGE	-40°C~+85°C
標準静電容量許容差	STANDARD CAPACITANCE TOLERANCE	-20%~+20% (120Hz)
漏れ電流 (最大値)	LEAKAGE CURRENT (MAX. VALUE)	I=0.01CV OR 3μA WHICHEVER IS THE GREATER (after 2 minutes) C=RATED CAPACITANCE (μF) V=WORKING VOLTAGE (V)
損失角の正接 (最大値) (tan δ)	DISSIPATION FACTOR (MAX. VALUE)	W.V 4 6.3 10 16 25 35 50 tan δ 0.35 0.25 0.20 0.17 0.15 0.13 0.10
耐久性 85°C 1000時間 定格使用電圧印加	ENDURANCE APPLICATION OF RATED OPERATING VOLTAGE, AT 85°C FOR 1000HOURS.	CAPACITANCE CHANGE : LESS THAN 25% OF THE INITIAL MEASURED VALUE. (4WV : LESS THAN 30%) DISSIPATION FACTOR : LESS THAN 200% OF THE INITIAL SPECIFIED VALUE. LEAKAGE CURRENT : LESS THAN THE INITIAL SPECIFIED VALUE.
低温特性 (+20°Cにおける120Hzのインピーダンスに対する比) (最大値)	LOW TEMPERATURE STABILITY (RATIO OF IMPEDANCE AT COLD TO THAT AT 20°C, 120Hz. MAX. VALUE.)	W.V -25°C/+20°C -40°C/+20°C W.V -25°C/+20°C -40°C/+20°C 4 7 15 25 2 4 6.3 4 10 35 2 4 10 3 8 50 2 3 16 2 6
その他の特性はJIS C5101-4に準ずる	THE OTHER CHARACTERISTICS	THE OTHER CHARACTERISTICS ARE BASED ON JIS C 5101-4

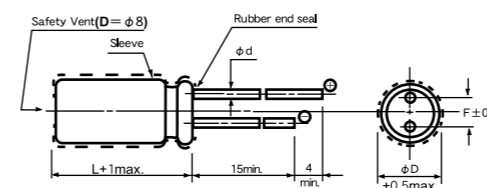
●5mm HEIGHT SUBMINIATURIZED TYPE

**TYPE UCX** JIS C5101  
CE-04 (Washable product)

■FEATURES

・This is a series of extra small sized electrolytic capacitors nominal height of which is standardized to 5 mm, and consequently this series is most suitable for application to electronic apparatus of extra miniature size and of thin shape.

■寸法図/DIAGRAM OF DIMENSIONS



Unit : mm

φD	4	5	6.3	8
φd	0.45	0.45	0.45	0.45
F	1.5	2.0	2.5	2.5



●低漏れ電流標準品

UCLSシリーズ

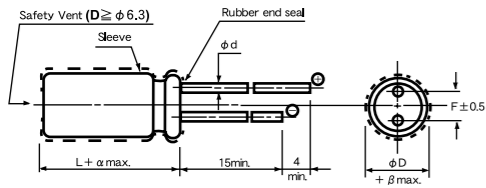
JIS C5101  
CE-04

(耐洗浄品)

■特徴

- 漏れ電流を極めて低く抑えた製品で、高級音響機器のイコライザ回路のカップリングコンデンサ及びバイパスコンデンサの残留ノイズ、ソース切換時のクリック音、可変抵抗まわりのノイズの防止用に最適です。
- 静電容量許容差が±10%の製品も取り揃えており時定数回路にもご使用頂けます。
- 自動挿入機用のテーピング製品(φ12.5X25以下)及び自立形フォーミング製品も取り揃えております。

■寸法図/DIAGRAM OF DIMENSIONS



Unit : mm

φD	5	6.3	8	10	12.5	16
φd	0.5	0.5	0.6	0.6	0.6	0.8
F	2.0	2.5	3.5	5.0	5.0	7.5
β	0.5			1.0		
L < 20	α = 1.5					
L ≥ 20	α = 2					

■性能/PERFORMANCE SPECIFICATIONS

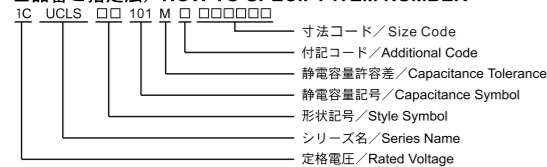
カテゴリ温度範囲	CATEGORY TEMPERATURE RANGE	-40°C ~ +85°C																														
標準静電容量許容差	STANDARD CAPACITANCE TOLERANCE	-20 ~ +20% (120Hz)																														
漏れ電流 (最大値)	LEAKAGE CURRENT (MAX. VALUE)	I=0.002CV OR 0.3 μA WHICHEVER IS THE GREATER (after 2 minutes) C=RATED CAPACITANCE (μF) V=WORKING VOLTAGE (V)																														
損失角の正接 (最大値) (tan δ)	DISSIPATION FACTOR (MAX. VALUE)	<table border="1"> <tr> <td>W.V</td> <td>6.3</td> <td>10</td> <td>16</td> <td>25</td> <td>35</td> <td>50</td> <td>63</td> </tr> <tr> <td>tan δ</td> <td>0.25</td> <td>0.20</td> <td>0.17</td> <td>0.15</td> <td>0.13</td> <td>0.10</td> <td>0.10</td> </tr> </table> <p>When the capacitance exceed 1,000 μF, the value of tan δ is increased by 0.02 for each increment of 1,000 μF or its fraction.</p>	W.V	6.3	10	16	25	35	50	63	tan δ	0.25	0.20	0.17	0.15	0.13	0.10	0.10														
W.V	6.3	10	16	25	35	50	63																									
tan δ	0.25	0.20	0.17	0.15	0.13	0.10	0.10																									
耐久性 85°C 2000時間 定格使用電圧印加	ENDURANCE APPLICATION OF RATED OPERATING VOLTAGE, AT 85°C FOR 2000HOURS.	CAPACITANCE CHANGE : LESS THAN 20% OF THE INITIAL MEASURED VALUE. DISSIPATION FACTOR : LESS THAN 200% OF THE INITIAL SPECIFIED VALUE. LEAKAGE CURRENT : LESS THAN THE INITIAL SPECIFIED VALUE.																														
低温特性 (+20°Cにおける120Hzのインピーダンスに対する比) (最大値)	LOW TEMPERATURE STABILITY (RATIO OF IMPEDANCE AT COLD TO THAT AT 20°C, 120Hz. MAX. VALUE.)	<table border="1"> <tr> <td>W.V</td> <td>-25°C/+20°C</td> <td>-40°C/+20°C</td> <td>W.V</td> <td>-25°C/+20°C</td> <td>-40°C/+20°C</td> </tr> <tr> <td>6.3</td> <td>4</td> <td>10</td> <td>35</td> <td>2</td> <td>4</td> </tr> <tr> <td>10</td> <td>3</td> <td>8</td> <td>50</td> <td>2</td> <td>3</td> </tr> <tr> <td>16</td> <td>2</td> <td>6</td> <td>63</td> <td>2</td> <td>3</td> </tr> <tr> <td>25</td> <td>2</td> <td>4</td> <td></td> <td></td> <td></td> </tr> </table>	W.V	-25°C/+20°C	-40°C/+20°C	W.V	-25°C/+20°C	-40°C/+20°C	6.3	4	10	35	2	4	10	3	8	50	2	3	16	2	6	63	2	3	25	2	4			
W.V	-25°C/+20°C	-40°C/+20°C	W.V	-25°C/+20°C	-40°C/+20°C																											
6.3	4	10	35	2	4																											
10	3	8	50	2	3																											
16	2	6	63	2	3																											
25	2	4																														
その他の特性はJIS C5101-4に準ずる	THE OTHER CHARACTERISTICS	THE OTHER CHARACTERISTICS ARE BASED ON JIS C 5101-4																														

■寸法表/CASE SIZE TABLE Unit : mm

■Ripple current [Max. Value mA r.m.s] at 85°C 120Hz.

μF	6.3 (0J)		10 (1A)		16 (1C)		25 (1E)		35 (1V)		50 (1H)		63 (1J)	
	φD×L	Ripple current	φD×L	Ripple current	φD×L	Ripple current	φD×L	Ripple current	φD×L	Ripple current	φD×L	Ripple current	φD×L	Ripple current
1.0 (010)											5×11	10	5×11	13
2.2 (2R2)											5×11	23	5×11	25
3.3 (3R3)											5×11	25	5×11	30
4.7 (4R7)											5×11	35	5×11	38
10 (100)					5×11	25	5×11	39	5×11	55	5×11	60	5×11	60
22 (220)			5×11	35	5×11	55	5×11	87	6.3×11	110	6.3×11	110	8×11.5	115
33 (330)			5×11	52	5×11	80	6.3×11	120	6.3×11	120	8×11.5	160	8×11.5	160
47 (470)			5×11	75	6.3×11	130	6.3×11	130	8×11.5	190	8×11.5	190	10×12.5	200
100 (101)			6.3×11	150	8×11.5	210	8×11.5	210	10×12.5	320	10×16	320	10×20	330
220 (221)			8×11.5	280	10×12.5	340	10×16	400	10×20	490	12.5×20	490	12.5×20	550
330 (331)			10×12.5	400	10×16	420	10×20	490	12.5×20	600	12.5×20	600	12.5×25	710
470 (471)	10×12.5	390	10×16	500	10×20	550	12.5×20	660	12.5×25	760	16×25	760	16×25	850
1000 (102)	10×20	650	12.5×20	810	12.5×20	810	16×25	1010	16×25	1140				
2200 (222)	12.5×25	1060	16×25	1200	16×25	1300	16×31.5	1350						
3300 (332)	16×25	1270	16×25	1270										
4700 (472)	16×31.5	1500												

■品番ご指定法/ HOW TO SPECIFY ITEM NUMBER



●低漏れ電流105°C品

UCWLシリーズ

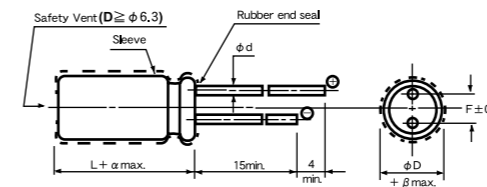
JIS C5101  
CE-04

(耐洗浄品)

■特徴

- 使用温度範囲を-40~+105°Cと広くした低漏れ電流品で、更に寿命特性も105°C 2,000時間を保証した高安定化アルミ電解コンデンサです。
- 従来品より小形化され、通信機器・工業用計測器・自動車電装品等高信頼性を要求される用途に最適です。
- 自動挿入機用テーピング製品(φ12.5X25以下)及び自立形フォーミング製品も取り揃えております。

■寸法図/DIAGRAM OF DIMENSIONS



Unit : mm

φD	5	6.3	8	10	12.5	16
φd	0.5	0.5	0.6	0.6	0.6	0.8
F	2.0	2.5	3.5	5.0	5.0	7.5
β	0.5			1.0		
L < 20	α = 1.5					
L ≥ 20	α = 2					

■性能/PERFORMANCE SPECIFICATIONS

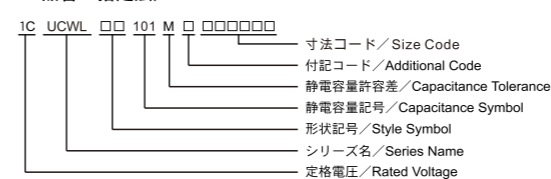
カテゴリ温度範囲	CATEGORY TEMPERATURE RANGE	-40°C ~ +105°C																								
標準静電容量許容差	STANDARD CAPACITANCE TOLERANCE	-20 ~ +20% (120Hz)																								
漏れ電流 (最大値)	LEAKAGE CURRENT (MAX. VALUE)	I=0.002CV OR 0.3 μA WHICHEVER IS THE GREATER (after 2 minutes) C=RATED CAPACITANCE (μF) V=WORKING VOLTAGE (V)																								
損失角の正接 (最大値) (tan δ)	DISSIPATION FACTOR (MAX. VALUE)	<table border="1"> <tr> <td>W.V</td> <td>6.3</td> <td>10</td> <td>16</td> <td>25</td> <td>35</td> <td>50</td> </tr> <tr> <td>tan δ</td> <td>0.25</td> <td>0.20</td> <td>0.17</td> <td>0.15</td> <td>0.13</td> <td>0.10</td> </tr> </table> <p>When the capacitance exceed 1,000 μF, the value of tan δ is increased by 0.02 for each increment of 1,000 μF or its fraction.</p>	W.V	6.3	10	16	25	35	50	tan δ	0.25	0.20	0.17	0.15	0.13	0.10										
W.V	6.3	10	16	25	35	50																				
tan δ	0.25	0.20	0.17	0.15	0.13	0.10																				
耐久性 105°C 2000時間 定格使用電圧印加 (但しφ8以下は1000時間保証)	ENDURANCE APPLICATION OF RATED OPERATING VOLTAGE, AT 105°C FOR 2000HOURS. (φD ≤ 8 : 1000Hr)	CAPACITANCE CHANGE : LESS THAN 20% OF THE INITIAL MEASURED VALUE. DISSIPATION FACTOR : LESS THAN 200% OF THE INITIAL SPECIFIED VALUE. LEAKAGE CURRENT : LESS THAN THE INITIAL SPECIFIED VALUE.																								
低温特性 (+20°Cにおける120Hzのインピーダンスに対する比) (最大値)	LOW TEMPERATURE STABILITY (RATIO OF IMPEDANCE AT COLD TO THAT AT 20°C, 120Hz. MAX. VALUE.)	<table border="1"> <tr> <td>W.V</td> <td>-25°C/+20°C</td> <td>-40°C/+20°C</td> <td>W.V</td> <td>-25°C/+20°C</td> <td>-40°C/+20°C</td> </tr> <tr> <td>6.3</td> <td>4</td> <td>10</td> <td>25</td> <td>2</td> <td>5</td> </tr> <tr> <td>10</td> <td>3</td> <td>8</td> <td>35</td> <td>2</td> <td>3</td> </tr> <tr> <td>16</td> <td>2</td> <td>6</td> <td>50</td> <td>2</td> <td>3</td> </tr> </table>	W.V	-25°C/+20°C	-40°C/+20°C	W.V	-25°C/+20°C	-40°C/+20°C	6.3	4	10	25	2	5	10	3	8	35	2	3	16	2	6	50	2	3
W.V	-25°C/+20°C	-40°C/+20°C	W.V	-25°C/+20°C	-40°C/+20°C																					
6.3	4	10	25	2	5																					
10	3	8	35	2	3																					
16	2	6	50	2	3																					
その他の特性はJIS C5101-4に準ずる	THE OTHER CHARACTERISTICS	THE OTHER CHARACTERISTICS ARE BASED ON JIS C 5101-4																								

■寸法表/CASE SIZE TABLE Unit : mm

■Ripple current [Max. Value mA r.m.s] at 105°C 120Hz.

μF	6.3 (0J)		10 (1A)		16 (1C)		25 (1E)		35 (1V)		50 (1H)	
	φD×L	Ripple current	φD×L	Ripple current	φD×L	Ripple current	φD×L	Ripple current	φD×L	Ripple current	φD×L	Ripple current
1.0											5×11	10
2.2											5×11	17
3.3											5×11	21
4.7											5×11	25
10							5×11	20	5×11	23	5×11	25
22					5×11	40	5×11	45	5×11	50	6.3×11	59
33					5×11	50	5×11	56	6.3×11	68	6.3×11	86
47					5×11	60	6.3×11	75	6.3×11	80	8×11.5	100
100			6.3×11	91	6.3×11	98	8×11.5	128	8×11.5	138	10×12.5	186
220			8×11.5	155	8×11.5	172	10×12.5	220	10×16	260	10×20	333
330			10×12.5	220	10×12.5	243	10×16	299	10×20	349	12.5×20	477
470			10×12.5	263	10×16	317	10×20	386	12.5×20	470	12.5×25	636
1000			10×20	455	12.5×20	580	12.5×20	675	16×25	800	16×25	870
2200			12.5×25	780	16×25	850	16×25	1000	16×31.5	1200		

■品番ご指定法/ HOW TO SPECIFY ITEM NUMBER



●両極性標準品

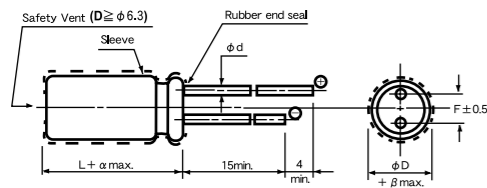
**BPCEシリーズ**

JIS C5101  
CE-04  
(耐洗浄品)

■特徴

- ・両極性構造の電解コンデンサです。
- ・極性が反転したり、また直流回路であるが短時間の交流電圧が印加されるような極性の一定しない回路にご使用頂けます。
- ・従来品より小形化されましたので機器の小形化ができます。
- ・自動挿入機用テーピング製品 (φ12.5X25以下) 及び自立形フォーミング製品も取り揃えてあります。

■寸法図/DIAGRAM OF DIMENSIONS



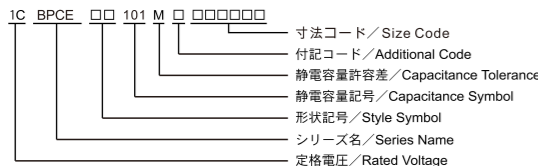
■性能/PERFORMANCE SPECIFICATIONS

カテゴリ温度範囲	CATEGORY TEMPERATURE RANGE	-40°C ~ +85°C																
標準静電容量許容差	STANDARD CAPACITANCE TOLERANCE	-20% ~ +20% (120Hz)																
漏れ電流 (最大値)	LEAKAGE CURRENT (MAX. VALUE)	I=0.06CV OR 10 μA WHICHEVER IS THE GREATER (after 2 minutes) C=RATED CAPACITANCE (μF) V=WORKING VOLTAGE (V)																
損失角の正接 (最大値) (tan δ)	DISSIPATION FACTOR (MAX. VALUE)	<table border="1"> <tr> <td>W.V</td> <td>6.3</td> <td>10</td> <td>16</td> <td>25</td> <td>35</td> <td>50</td> <td>63</td> </tr> <tr> <td>tan δ</td> <td>0.30</td> <td>0.25</td> <td>0.22</td> <td>0.20</td> <td>0.15</td> <td>0.15</td> <td>0.13</td> </tr> </table> <p>When the capacitance exceed 1,000 μF, the value of tan δ is increased by 0.02 for each increment of 1,000 μF or its fraction.</p>	W.V	6.3	10	16	25	35	50	63	tan δ	0.30	0.25	0.22	0.20	0.15	0.15	0.13
W.V	6.3	10	16	25	35	50	63											
tan δ	0.30	0.25	0.22	0.20	0.15	0.15	0.13											
耐久性 85°C 2000時間 定格使用電圧印加	ENDURANCE APPLICATION OF RATED OPERATING VOLTAGE, AT 85°C FOR 2000HOURS.	<p>CAPACITANCE CHANGE : LESS THAN 20% OF THE INITIAL MEASURED VALUE.</p> <p>DISSIPATION FACTOR : LESS THAN 200% OF THE INITIAL SPECIFIED VALUE.</p> <p>LEAKAGE CURRENT : LESS THAN THE INITIAL SPECIFIED VALUE.</p>																
その他の特性はJIS C5101-4に準ずる	THE OTHER CHARACTERISTICS	THE OTHER CHARACTERISTICS ARE BASED ON JIS C 5101-4																

■寸法表/CASE SIZE TABLE

	W.V	6.3 (0J)	10 (1A)	16 (1C)	25 (1E)	35 (1V)	50 (1H)	63 (1J)
μF		φD×L	φD×L	φD×L	φD×L	φD×L	φD×L	φD×L
2.2 (2R2)							5×11	-
3.3 (3R3)							5×11	5×11
4.7 (4R7)					5×11	5×11	5×11	6.3×11
10 (100)				5×11	5×11	5×11	6.3×11	6.3×11
22 (220)			5×11	5×11	6.3×11	6.3×11	8×11.5	8×11.5
33 (330)			5×11	5×11	6.3×11	8×11.5	8×11.5	10×12.5
47 (470)	5×11	5×11	6.3×11	6.3×11	8×11.5	10×12.5	10×16	
100 (101)	6.3×11	6.3×11	8×11.5	8×11.5	10×16	10×20	12.5×20	
220 (221)	8×11.5	8×11.5	10×12.5	10×16	12.5×20	12.5×25	16×25	
330 (331)	8×11.5	10×16	10×16	12.5×20	12.5×20	16×25	16×31.5	
470 (471)	10×12.5	10×16	10×20	12.5×20	12.5×25	16×31.5		
1000 (102)	10×20	12.5×20	12.5×25	16×25	16×31.5			
2200 (222)	12.5×25	16×25	16×31.5					

■品番ご指定法/HOW TO SPECIFY ITEM NUMBER



●BIPOLARIZED STANDARD TYPE

**TYPE BPCE**

JIS C5101  
CE-04  
(Washable product)

■FEATURES

- ・ These capacitors are bipolarized electrolytic capacitors.
- ・ This can be used in such circuit in which the polarity is not certain as the polarity is reversed or the applied voltage to the capacitor is principally D.C. but sometimes A.C. voltage is superposed there on for a short time.
- ・ This type capacitors can contribute to make electronic equipment smaller since these products have smaller dimensions as compared with the traditional ones.
- ・ A series of products with taped leads for automatic insertion (φ12.5X25 or less) and self-standing products with formed leads are included.

φD	5	6.3	8	10	12.5	16
φd	0.5	0.5	0.6	0.6	0.6	0.8
F	2.0	2.5	3.5	5.0	5.0	7.5
β	0.5					1.0

L<20 α=1.5  
L≥20 α=2

●基板自立形標準品

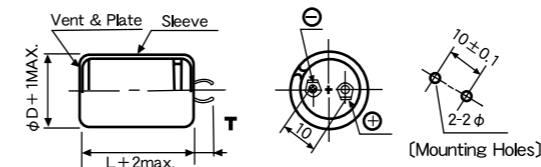
**LCEシリーズ**

JIS C5101  
CE-69

■特徴

- ・ プリント基板自立形端子構造の低圧から高圧の大電容量電解コンデンサで、ラグ端子形に比べマウントの省力化、セットの小形化が可能になります。
- ・ 一般電子機器及び産業用機器の電源回路、出力回路等にご使用頂くのに最適の製品です。

■寸法図/DIAGRAM OF DIMENSIONS



φD	22~35
T	6.3±1.0
	4.0±1.0

■性能/PERFORMANCE SPECIFICATIONS

カテゴリ温度範囲	CATEGORY TEMPERATURE RANGE	-40°C ~ +85°C (16~100VDC), -25°C ~ +85°C (160~450VDC)																
標準静電容量許容差	STANDARD CAPACITANCE TOLERANCE	-20% ~ +20% (25°C, 120Hz)																
漏れ電流 (最大値)	LEAKAGE CURRENT (MAX. VALUE)	I=0.02CV OR 3mA WHICHEVER IS THE SMALLER (at 25°C, after 5 minutes) C=RATED CAPACITANCE (μF) V=WORKING VOLTAGE (V)																
損失角の正接 (最大値) (25°C, 120Hz)	DISSIPATION FACTOR (MAX. VALUE) (25°C, 120Hz)	<table border="1"> <tr> <td>W.V</td> <td>16</td> <td>25</td> <td>35</td> <td>50</td> <td>63</td> <td>100</td> <td>160~450</td> </tr> <tr> <td>tan δ</td> <td>0.50</td> <td>0.40</td> <td>0.35</td> <td>0.30</td> <td>0.25</td> <td>0.20</td> <td>0.15</td> </tr> </table>	W.V	16	25	35	50	63	100	160~450	tan δ	0.50	0.40	0.35	0.30	0.25	0.20	0.15
W.V	16	25	35	50	63	100	160~450											
tan δ	0.50	0.40	0.35	0.30	0.25	0.20	0.15											
耐久性 85°C 2000時間 定格使用電圧印加	ENDURANCE APPLICATION OF RATED OPERATING VOLTAGE, AT 85°C FOR 2000HOURS.	<p>CAPACITANCE CHANGE : LESS THAN 20% OF THE INITIAL MEASURED VALUE.</p> <p>DISSIPATION FACTOR : LESS THAN 200% OF THE INITIAL SPECIFIED VALUE.</p> <p>LEAKAGE CURRENT : LESS THAN THE INITIAL SPECIFIED VALUE.</p>																
低温特性 (+20°Cにおける120Hzのインピーダンスに対する比) (最大値)	LOW TEMPERATURE STABILITY (RATIO OF IMPEDANCE AT COLD TO THAT AT 20°C, 120Hz. MAX. VALUE.)	<table border="1"> <tr> <td>W.V</td> <td>16~35</td> <td>50~100</td> <td>160~400</td> <td>420~450</td> </tr> <tr> <td>Z -25°C/Z +20°C</td> <td>4</td> <td>3</td> <td>4</td> <td>8</td> </tr> <tr> <td>Z -40°C/Z +20°C</td> <td>15</td> <td>10</td> <td>-</td> <td>-</td> </tr> </table>	W.V	16~35	50~100	160~400	420~450	Z -25°C/Z +20°C	4	3	4	8	Z -40°C/Z +20°C	15	10	-	-	
W.V	16~35	50~100	160~400	420~450														
Z -25°C/Z +20°C	4	3	4	8														
Z -40°C/Z +20°C	15	10	-	-														
その他の特性はJIS C5101-4に準ずる	THE OTHER CHARACTERISTICS	THE OTHER CHARACTERISTICS ARE BASED ON JIS C 5101-4																

■定格リプル電流補正係数

リプル周波数が標準品一覧表の規定値と異なる場合には、下表の係数を乗じた値以下でご使用下さい。

When the ripple frequency differs from the specification shown in the list of standard products, multiply the value with the coefficient shown below, and use the products under the obtained value.

周波数補正係数/FREQUENCY CORRECTION FACTOR

W.V	f (Hz)	50	120	1K	10K	50K
16 ~ 100		0.95	1.0	1.10	1.15	1.20
160 ~ 250		0.81	1.0	1.32	1.45	1.50
350 ~ 450		0.77	1.0	1.30	1.41	1.43

■品番ご指定法/HOW TO SPECIFY ITEM NUMBER FOR TYPE LCE

例/Example

35W.V	LCE series	6800 μF	±20%	4.0mm	25×30L
<b>1V</b>	<b>LCE</b>	<b>682</b>	<b>M</b>	<b>F</b>	<b>250300</b>
定格電圧 Rated Voltage	シリーズ名 Series Name	静電容量記号 Capacitance Symbol	容量許容差 Capacitance tolerance	端子長さ(T) Terminal length	寸法 Size
例/Example	例/Example		±20%=M	長さ length	記号 Symbol
W.V	SYMBOL	静電容量 RATED CAP. μF	記号 SYM-BOL	4.0mm	250300
80	1K	68	680	30×40	300400
100	2A	82	820	35×50	350500
160	2C	180	181		
180	2P	270	271		
200	2D		12000		123



■寸法表/CASE SIZE TABLE

■Ripple current [Max. Value A] at 85°C 120Hz.

φD×L (mm)	16V (1C)		25V (1E)		35V (1V)		50V (1H)		63V (1J)		100V (2A)		160V (2C)	
	Cap	Ripple	Cap	Ripple	Cap	Ripple	Cap	Ripple	Cap	Ripple	Cap	Ripple	Cap	Ripple
	μF	A,rms	μF	A,rms	μF	A,rms	μF	A,rms	μF	A,rms	μF	A,rms	μF	A,rms
22×25	6800	1.78	4700	1.48	3300	1.38	2200	1.13	1500	1.08	—	—	390	1.55
22×30	10000	1.94	6800	1.89	4700	1.57	3300	1.47	2200	1.20	1000	0.94	470	1.76
22×35	—	—	10000	2.06	6800	2.01	4700	1.67	3300	1.56	1500	1.22	560	2.03
22×40	15000	2.65	—	—	—	—	—	—	—	—	—	—	680	2.36
22×45	—	—	15000	2.78	10000	2.27	—	—	4700	1.84	—	—	820	2.72
22×50	—	—	—	—	—	—	6800	2.31	—	—	2200	1.47	1000	3.13
25×25	10000	1.92	6800	1.87	4700	1.56	3300	1.46	2200	1.19	1000	0.93	470	1.74
25×30	15000	2.52	10000	2.06	6800	2.01	4700	1.67	3300	1.56	1500	1.22	680	2.24
25×35	—	—	15000	2.67	10000	2.18	—	—	4700	1.77	—	—	820	2.61
25×40	—	—	—	—	—	—	6800	2.21	—	—	2200	1.41	1000	3.00
25×45	22000	3.52	22000	3.52	—	—	—	—	—	—	—	—	1200	3.44
25×50	—	—	—	—	15000	3.03	10000	2.48	6800	2.42	3300	1.88	—	—
30×25	15000	2.52	10000	2.06	6800	2.01	4700	1.67	3300	1.56	1500	1.22	680	2.24
30×30	22000	3.23	15000	2.67	10000	2.18	6800	2.13	4700	1.77	2200	1.35	1000	2.88
30×35	—	—	22000	3.41	15000	2.82	10000	2.30	6800	2.25	—	—	1200	3.34
30×40	—	—	—	—	—	—	—	—	—	—	3300	1.83	1500	3.91
30×45	33000	4.28	—	—	22000	3.73	—	—	10000	2.52	—	—	1800	4.47
30×50	—	—	33000	4.45	—	—	15000	3.21	—	—	4700	2.12	—	—
35×25	22000	3.23	15000	2.67	10000	2.18	6800	2.13	4700	1.77	2200	1.35	1000	2.88
35×30	—	—	22000	3.41	15000	2.82	10000	2.30	6800	2.25	3300	1.75	1200	3.34
35×35	33000	4.12	—	—	—	—	—	—	—	—	—	—	1800	4.34
35×40	—	—	33000	4.31	22000	3.76	15000	3.10	10000	2.53	4700	2.05	—	—
35×45	—	—	—	—	—	—	—	—	—	—	—	—	—	—
35×50	—	—	—	—	33000	4.67	—	—	15000	3.36	—	—	—	—

φD×L (mm)	180V (2P)		200V (2D)		250V (2E)		350V (2V)		400V (2G)		420V (2Q)		450V (2W)	
	Cap	Ripple	Cap	Ripple	Cap	Ripple	Cap	Ripple	Cap	Ripple	Cap	Ripple	Cap	Ripple
	μF	A,rms	μF	A,rms	μF	A,rms	μF	A,rms	μF	A,rms	μF	A,rms	μF	A,rms
22×25	330	1.38	270	1.38	220	1.36	100	0.76	120	1.00	100	0.92	82	0.83
22×30	470	1.76	390	1.76	270	1.60	150	0.99	150	1.20	120	1.07	120	1.07
22×35	560	2.06	470	2.03	390	2.04	180	1.15	180	1.38	150	1.26	150	1.26
22×40	680	2.36	560	2.36	470	2.35	220	1.34	220	1.62	180	1.46	180	1.46
22×45	820	2.72	680	2.72	—	—	—	—	270	1.88	220	1.70	—	—
22×50	—	—	—	—	560	2.81	270	1.63	—	—	270	1.96	220	1.77
25×25	470	1.74	390	1.74	270	1.58	150	0.98	150	1.18	120	1.06	120	1.06
25×30	560	2.03	470	2.03	390	2.04	180	1.15	180	1.38	180	1.38	150	1.26
25×35	680	2.35	680	2.35	470	2.35	220	1.34	220	1.62	220	1.61	180	1.46
25×40	820	2.72	820	2.72	560	2.69	270	1.56	270	1.88	270	1.87	220	1.70
25×45	1000	3.14	—	—	680	3.11	330	1.80	330	2.17	330	2.17	270	1.96
25×50	1200	3.59	1000	3.59	820	3.55	390	2.04	390	2.46	—	—	330	2.26
30×25	680	2.24	560	2.24	470	2.24	220	1.28	220	1.52	180	1.38	180	1.38
30×30	820	2.61	820	2.61	560	2.59	270	1.50	270	1.79	220	1.62	220	1.62
30×35	1000	3.04	1000	3.04	680	3.01	330	1.75	330	2.08	330	2.08	270	1.90
30×40	1200	3.49	1200	3.49	820	3.47	470	2.19	390	2.38	390	2.38	330	2.19
30×45	1500	4.08	—	—	1000	4.00	—	—	470	2.73	470	2.73	390	2.48
30×50	—	—	—	—	1200	4.55	560	2.59	560	3.10	—	—	470	2.84
35×25	1000	2.88	820	2.88	560	2.59	270	1.50	270	1.79	220	1.62	220	1.62
35×30	1200	3.34	1000	3.34	820	3.3	390	1.90	330	2.10	330	2.10	270	1.90
35×35	1500	3.96	1200	3.96	1000	3.88	470	2.22	470	2.63	390	2.40	390	2.40
35×40	1800	4.50	1500	4.50	1200	4.40	560	2.54	560	3.01	470	2.75	470	2.75
35×45	—	—	—	—	—	—	680	2.88	680	3.45	560	3.13	560	3.13
35×50	—	—	1800	5.34	1500	5.34	—	—	—	—	680	3.59	—	—

●この寸法表にないカスタム製品も製造いたしますので、御相談下さい。  
●Produce custom products too, which are not found in these tables.

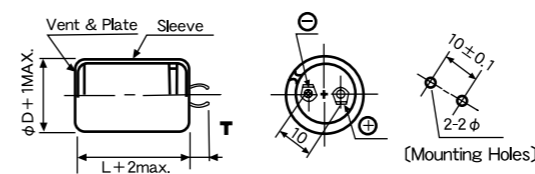
●基板自立形105°C品

LCWシリーズ JIS C5101 CE-69

■特徴

プリント基板自立形端子構造の大容量電解コンデンサで、最高使用温度を105°Cとした製品です。  
●一般電子機器及び産業用機器の電源回路、出力回路等にご使用頂くのに最適の製品です。

■寸法図/DIAGRAM OF DIMENSIONS



Unit: mm

φD	22~35
T	6.3±1.0
	4.0±1.0

■性能/PERFORMANCE SPECIFICATIONS

カテゴリー温度範囲	CATEGORY TEMPERATURE RANGE	-40°C~+105°C (16~100VDC), -25°C~+105°C (160~500VDC)																		
標準静電容量許容差	STANDARD CAPACITANCE TOLERANCE	-20%~+20% (25°C, 120Hz)																		
漏れ電流 (最大値)	LEAKAGE CURRENT (MAX. VALUE)	I=0.02CV OR 3mA WHICHEVER IS THE SMALLER (at 25°C, after 5 minutes) C=RATED CAPACITANCE (μF) V=WORKING VOLTAGE (V)																		
損失角の正接 (最大値) (25°C, 120Hz)	DISSIPATION FACTOR (MAX. VALUE) (25°C, 120Hz)	<table border="1"> <tr><th>W.V</th><td>16</td><td>25</td><td>35</td><td>50</td><td>63</td><td>100</td><td>160~450</td><td>500</td></tr> <tr><th>tan δ</th><td>0.50</td><td>0.40</td><td>0.35</td><td>0.35</td><td>0.30</td><td>0.25</td><td>0.15</td><td>0.20</td></tr> </table>	W.V	16	25	35	50	63	100	160~450	500	tan δ	0.50	0.40	0.35	0.35	0.30	0.25	0.15	0.20
W.V	16	25	35	50	63	100	160~450	500												
tan δ	0.50	0.40	0.35	0.35	0.30	0.25	0.15	0.20												
耐久性 105°C 2000時間 定格使用電圧印加	ENDURANCE APPLICATION OF RATED OPERATING VOLTAGE, AT 105°C FOR 2000HOURS.	CAPACITANCE CHANGE: LESS THAN 20% OF THE INITIAL MEASURED VALUE. DISSIPATION FACTOR: LESS THAN 200% OF THE INITIAL SPECIFIED VALUE. LEAKAGE CURRENT: LESS THAN THE INITIAL SPECIFIED VALUE.																		
低温特性 (+20°Cにおける120Hzのインピーダンスに対する比) (最大値)	LOW TEMPERATURE STABILITY (RATIO OF IMPEDANCE AT COLD TO THAT AT 20°C, 120Hz, MAX. VALUE.)	<table border="1"> <tr><th>W.V</th><td>16~35</td><td>50~100</td><td>160~400</td><td>420~500</td></tr> <tr><th>Z -25°C/Z +20°C</th><td>4</td><td>3</td><td>4</td><td>8</td></tr> <tr><th>Z -40°C/Z +20°C</th><td>15</td><td>10</td><td>—</td><td>—</td></tr> </table>	W.V	16~35	50~100	160~400	420~500	Z -25°C/Z +20°C	4	3	4	8	Z -40°C/Z +20°C	15	10	—	—			
W.V	16~35	50~100	160~400	420~500																
Z -25°C/Z +20°C	4	3	4	8																
Z -40°C/Z +20°C	15	10	—	—																
その他の特性はJIS C5101-4に準ずる	THE OTHER CHARACTERISTICS	THE OTHER CHARACTERISTICS ARE BASED ON JIS C 5101-4																		

■定格リップル電流補正係数

リップル周波数が標準品一覧表の規定値と異なる場合には、下表の係数を乗じた値以下でご使用下さい。

When the ripple frequency differs from the specification shown in the list of standard products, multiply the value with the coefficient shown below, and use the products under the obtained value.

周波数補正係数/FREQUENCY CORRECTION FACTOR

W.V	f (Hz)	50	120	1K	10K	50K
16 ~ 100		0.95	1.0	1.10	1.15	1.20
160 ~ 250		0.81	1.0	1.32	1.45	1.50
350 ~ 500		0.77	1.0	1.30	1.41	1.43

■品番ご指定法/HOW TO SPECIFY ITEM NUMBER FOR TYPE LCW

例/Example

80W.V      LCW series      1800μF      ±20%      4.0mm      25×30L

**1K**      **LCW**      **182**      **M**      **F**      **250300**

定格電圧      シリーズ名      静電容量記号      容量許容差      端子長さ(T)      寸法      記号

Rated Voltage      Series Name      Capacitance Symbol      Capacitance tolerance      Terminal length      Size      Symbol

例/Example      例/Example

W.V	SYMBOL	静電容量 RATED Cap. μF	記号 SYM-BOL	静電容量 RATED Cap. μF	記号 SYM-BOL
80	1K	68	680	1200	122
100	2A	82	820	1500	152
160	2C	180	181	3300	332
180	2P	270	271	12000	123
200	2D				

長さ length	記号 Symbol
4.0mm	F
6.3mm	S

寸法 Size	記号 Symbol
25×30	250300
30×40	300400
35×50	350500



■寸法表/CASE SIZE TABLE

■Ripple current [Max. Value A] at 105°C 120Hz.

φD×L (mm)	16V (1C)		25V (1E)		35V (1V)		50V (1H)		63V (1J)		100V (2A)		160V (2C)		
	Cap	Ripple	Cap	Ripple	Cap	Ripple	Cap	Ripple	Cap	Ripple	Cap	Ripple	Cap	Ripple	
	μF	A,rms	μF	A,rms	μF	A,rms	μF	A,rms	μF	A,rms	μF	A,rms	μF	A,rms	
22×25	4700	0.93	3300	0.87	2200	0.71	1500	0.68	1000	0.56	—	—	330	0.98	
22×30	—	—	4700	1.00	3300	0.93	2200	0.76	1500	0.73	1000	0.59	470	1.21	
22×35	6800	1.27	6800	1.27	4700	1.05	3300	0.99	2200	0.81	—	—	560	1.40	
22×40	—	—	—	—	—	—	—	—	—	—	—	1500	0.81	680	1.62
22×45	10000	1.43	10000	1.43	—	—	4700	1.16	3300	1.09	—	—	820	1.86	
22×50	—	—	—	—	6800	1.46	—	—	—	—	—	—	—	—	—
25×25	—	—	4700	0.98	3300	0.92	2200	0.75	1500	0.72	1000	0.59	470	1.19	
25×30	6800	1.26	6800	1.27	4700	1.05	3300	0.98	2200	0.80	—	—	560	1.40	
25×35	10000	1.36	10000	1.38	—	—	4700	1.11	—	—	1500	0.81	680	1.61	
25×40	—	—	—	—	6800	1.40	—	—	3300	1.09	—	—	820	1.86	
25×45	15000	1.84	15000	1.84	—	—	—	—	—	—	2200	0.93	1000	2.15	
25×50	—	—	—	—	10000	1.57	6800	1.53	4700	1.27	—	—	1200	2.46	
30×25	10000	1.30	6800	1.27	4700	1.05	3300	0.99	2200	0.81	1500	0.77	680	1.54	
30×30	—	—	10000	1.38	6800	1.34	4700	1.12	3300	1.05	—	—	820	1.79	
30×35	15000	1.77	15000	1.78	10000	1.46	6800	1.42	4700	1.18	2200	0.90	1200	2.29	
30×40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
30×45	22000	2.36	22000	2.36	—	—	10000	1.59	6800	1.55	3300	1.21	1500	2.80	
30×50	—	—	—	—	15000	2.03	—	—	—	—	—	—	—	—	—
35×25	—	—	10000	1.38	6800	1.34	4700	1.12	3300	1.05	—	—	1000	1.98	
35×30	15000	1.78	15000	1.78	10000	1.46	6800	1.42	4700	1.18	—	—	1200	2.29	
35×35	22000	2.27	—	—	—	—	—	—	—	—	3300	1.16	1500	2.72	
35×40	—	—	22000	2.38	15000	1.96	10000	1.60	6800	1.56	—	—	1800	3.09	
35×45	—	—	—	—	—	—	—	—	—	—	4700	1.35	—	—	—
35×50	33000	2.95	33000	2.95	—	—	15000	2.13	10000	1.74	—	—	—	—	—

φD×L (mm)	200V (2D)		250V (2E)		350V (2V)		400V (2G)		420V (2Q)		450V (2W)		500V (2H)	
	Cap	Ripple	Cap	Ripple	Cap	Ripple	Cap	Ripple	Cap	Ripple	Cap	Ripple	Cap	Ripple
	μF	A,rms	μF	A,rms	μF	A,rms	μF	A,rms	μF	A,rms	μF	A,rms	μF	A,rms
22×25	270	1.03	—	—	82	0.47	68	0.52	47	0.38	47	0.42	—	—
22×30	330	1.21	220	1.00	120	0.61	100	0.67	82	0.54	68	0.55	39	0.35
22×35	390	1.39	330	1.28	150	0.72	120	0.78	100	0.63	82	0.64	47	0.41
22×40	470	1.62	390	1.48	180	0.83	150	0.91	120	0.73	100	0.74	56	0.47
22×45	680	2.04	—	—	—	—	180	1.04	150	0.86	120	0.85	68	0.54
22×50	—	—	470	1.76	220	1.01	—	—	—	—	—	—	82	0.62
25×25	390	1.31	270	1.08	120	0.60	100	0.66	82	0.54	68	0.54	—	—
25×30	470	1.52	330	1.27	150	0.72	120	0.77	120	0.70	82	0.64	—	—
25×35	560	1.75	390	1.46	180	0.83	150	0.91	150	0.82	120	0.80	—	—
25×40	680	2.04	470	1.69	220	0.96	180	1.04	180	0.94	—	—	—	—
25×45	820	2.34	560	1.93	270	1.12	220	1.21	—	—	150	1.00	100	0.67
25×50	1000	2.70	680	2.22	330	1.29	270	1.40	220	1.13	180	1.14	120	0.77
30×25	470	1.54	390	1.39	150	0.72	120	0.78	120	0.70	100	0.71	—	—
30×30	680	1.96	470	1.63	220	0.93	180	1.01	180	0.91	120	0.82	—	—
30×35	820	2.27	680	2.06	270	1.09	220	1.18	220	1.05	180	1.06	—	—
30×40	1000	2.63	—	—	330	1.26	270	1.37	270	1.22	220	1.22	150	0.85
30×45	1200	3.00	820	2.48	390	1.43	330	1.57	—	—	—	—	—	—
30×50	—	—	—	—	—	—	—	—	330	1.49	270	1.48	180	1.01
35×25	680	1.96	560	1.78	220	0.93	180	1.01	180	0.90	120	0.82	—	—
35×30	1000	2.51	680	2.06	330	1.20	270	1.31	220	1.05	180	1.06	120	0.72
35×35	1200	2.92	820	2.41	390	1.38	330	1.52	270	1.23	220	1.24	—	—
35×40	—	—	1000	2.76	470	1.58	390	1.73	330	1.41	270	1.43	—	—
35×45	1500	3.38	1200	3.14	560	1.79	470	1.97	390	1.61	330	1.64	220	1.12
35×50	1800	4.01	1500	3.66	—	—	560	2.23	470	1.85	390	1.86	270	1.29

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●Produce custom products too, which are not found in these tables.

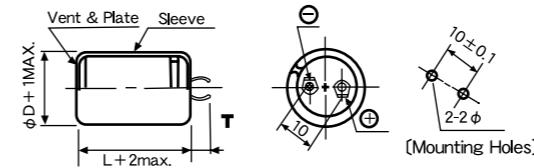
●基板自立形105°C品

LCWA シリーズ JIS C5101 CE-69

■特徴

- ・プリント基板自立形端子構造の大容量電解コンデンサで、最高使用温度105°C 3,000時間保証の製品です。
- ・一般電子機器及び産業用機器の電源回路、出力回路等にご使用頂くのに最適の製品です。

■寸法図/DIAGRAM OF DIMENSIONS



Unit : mm

φD	22~35
T	6.3±1.0
	4.0±1.0

■性能/PERFORMANCE SPECIFICATIONS

カテゴリ温度範囲	CATEGORY TEMPERATURE RANGE	-25°C~+105°C (200~450VDC)
標準静電容量許容差	STANDARD CAPACITANCE TOLERANCE	-20%~+20% (25°C, 120Hz)
漏れ電流 (最大値)	LEAKAGE CURRENT (MAX. VALUE)	I=0.02CV OR 3mA WHICHEVER C=RATED CAPACITANCE(μF) IS THE SMALLER (at 25°C, after 5 minutes) V=WORKING VOLTAGE (V)
損失角の正接 (最大値) (25°C, 120Hz)	DISSIPATION FACTOR (MAX. VALUE) (25°C, 120Hz)	W.V. 200 250 400 450 tan δ 0.15 0.15 0.15 0.15
耐久性 105°C 3000時間 定格使用電圧印加	ENDURANCE APPLICATION OF RATED OPERATING VOLTAGE, AT 105°C FOR 3000HOURS.	CAPACITANCE CHANGE : LESS THAN 20% OF THE INITIAL MEASURED VALUE. DISSIPATION FACTOR : LESS THAN 200% OF THE INITIAL SPECIFIED VALUE. LEAKAGE CURRENT : LESS THAN THE INITIAL SPECIFIED VALUE.
低温特性 (+20°Cにおける120Hzのインピーダンスに対する比) (最大値)	LOW TEMPERATURE STABILITY RATIO OF IMPEDANCE AT COLD TO THAT AT 20°C, 120Hz. MAX. VALUE.	W.V. 200~400 450 Z -25°C / Z +20°C 4 8
その他の特性はJIS C5101-4に準ずる	THE OTHER CHARACTERISTICS	THE OTHER CHARACTERISTICS ARE BASED ON JIS C 5101-4

■定格リプル電流補正係数

リプル周波数が標準品一覧表の規定値と異なる場合には、下表の係数を乗じた値以下でご使用下さい。

When the ripple frequency differs from the specification shown in the list of standard products, multiply the value with the coefficient shown below, and use the products under the obtained value.

周波数補正係数/FREQUENCY CORRECTION FACTOR

(Hz)	f	50/60	120	1k	10k	100k
200~250		0.80	1.00	1.15	1.17	1.20
400~450		0.70	1.00	1.10	1.12	1.15

■品番ご指定法/HOW TO SPECIFY ITEM NUMBER FOR TYPE LCWA

例/Example 250V LCWA series 1200μF ±20% 4.0mm 25×30L

**2E** (定格電圧 Rated Voltage) **LCWA** (シリーズ名 Series Name) **122** (静電容量記号 Capacitance Symbol) **M** (容量許容差 Capacitance tolerance) **F** (端子長さ(T) Terminal length) **250300** (寸法記号 Size Symbol)

例/Example

W.V.	SYMBOL	静電容量 RATED Cap. μF	記号 SYMBOL	静電容量 RATED Cap. μF	記号 SYMBOL
200	2D	68	680	270	271
250	2E	82	820	1200	122
400	2G	180	181	1500	152

±20%=M

寸法	記号
25×30	250300
30×40	300400
35×50	350500

■寸法表/CASE SIZE TABLE

■Ripple current [Max. Value A] at 105°C 120Hz

φD×L (mm)	200V (2D)		250V (2E)		400V (2G)		450V (2W)	
	Cap	Ripple	Cap	Ripple	Cap	Ripple	Cap	Ripple
	μF	A,rms	μF	A,rms	μF	A,rms	μF	A,rms
22×25	270	1.01	—	—	82	0.58	56	0.41
22×30	330	1.15	270	1.05	100	0.64	82	0.59
22×35	390	1.21	330	1.17	120	0.69	100	0.64
22×40	470	1.33	390	1.36	150	0.81	120	0.69
22×45	560	1.47	470	1.46	180	0.90	150	0.81
22×50	680	1.61	560	1.57	220	1.01	180	0.87
25×25	—	—	—	—	100	0.64	82	0.59
25×30	390	1.20	330	1.16	150	0.81	120	0.69
25×35	470	1.32	390	1.33	180	0.89	150	0.81
25×40	560	1.46	470	1.43	220	1.00	180	0.87
25×45	680	1.62	560	1.64	—	—	220	1.01
25×50	820	1.78	680	1.93	270	1.10	—	—

φD×L (mm)	200V (2D)		250V (2E)		400V (2G)		450V (2W)	
	Cap	Ripple	Cap	Ripple	Cap	Ripple	Cap	Ripple
	μF	A,rms	μF	A,rms	μF	A,rms	μF	A,rms
30×25	—	—	390	1.36	150	0.75	120	0.67
30×30	560	1.46	470	1.51	220	1.00	180	0.84
30×35	680	1.63	560	1.64	270	1.11	220	0.94
30×40	820	1.83	680	1.82	330	1.31	270	1.07
30×45	1000	2.10	820	1.99	—	—	330	1.21
30×50	1200	2.41	1000	2.19	390	1.41	—	—
35×25	—	—	—	—	220	1.00	180	0.79
35×30	820	1.82	680	1.82	330	1.31	270	1.17
35×35	1000	2.10	820	2.03	390	1.42	330	1.33
35×40	1200	2.42	1000	2.14	470	1.73	390	1.52
35×45	1500	2.81	1200	2.76	560	1.93	470	1.70
35×50	1800	3.05	—	—	680	2.12	—	—

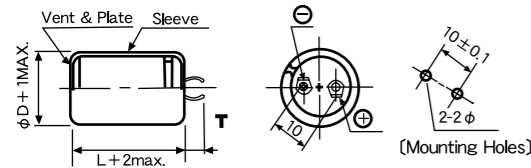
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●Produce custom products too, which are not found in these tables.

●基板自立形105°C品

LCWB シリーズ JIS C5101 CE-69

- 特徴
- プリント基板自立形端子構造の大容量電解コンデンサで、最高使用温度105°C 5,000時間保証の製品です。
  - 一般電子機器及び産業用機器の電源回路、出力回路等に ご使用頂くのに最適な製品です。

■寸法図/DIAGRAM OF DIMENSIONS



●SNAP-IN TERMINAL TYPE 105°C USE

TYPE LCWB JIS C5101 CE-69

- FEATURES
- This product is a large capacitance electrolytic capacitor having a printed circuit board snap-in terminal structure and operates at the maximum operating temperature of 105°C. And, product of 5,000 hour guarantee.
  - This product is most suitable for use in the power supply circuit, etc. for general electronic equipment and industrial equipment.

Unit : mm

φD	22~35
T	6.3±1.0
	4.0±1.0

■性能/PERFORMANCE SPECIFICATIONS

カテゴリ温度範囲	CATEGORY TEMPERATURE RANGE	-25°C~+105°C (200~500VDC)
標準静電容量許容差	STANDARD CAPACITANCE TOLERANCE	-20%~+20% (25°C, 120Hz)
漏れ電流 (最大値)	LEAKAGE CURRENT (MAX. VALUE)	I=0.02CV OR 3mA WHICHEVER C=RATED CAPACITANCE(μF) IS THE SMALLER (at 25°C, after 5 minutes) V=WORKING VOLTAGE (V)
損失角の正接 (最大値) (25°C, 120Hz)	DISSIPATION FACTOR (MAX. VALUE) (25°C, 120Hz)	W.V. 200 250 400 450 500 tan δ 0.20 0.20 0.25 0.25 0.25
耐久性 105°C 5000時間 定格使用電圧印加	ENDURANCE APPLICATION OF RATED OPERATING VOLTAGE, AT 105°C FOR 5000HOURS.	CAPACITANCE CHANGE : WITHIN ±25% OF THE INITIAL VALUE. DISSIPATION FACTOR : LESS THAN 200% OF THE INITIAL SPECIFIED VALUE. LEAKAGE CURRENT : LESS THAN THE INITIAL SPECIFIED VALUE.
低温特性 (+20°Cにおける120Hzのインピーダンスに対する比) (最大値)	LOW TEMPERATURE STABILITY RATIO OF IMPEDANCE AT COLD TO THAT AT 20°C, 120Hz. MAX. VALUE.	W.V. 200~400 450~500 Z -25°C / Z +20°C 4 8
その他の特性はJIS C5101-4に準ずる	THE OTHER CHARACTERISTICS	THE OTHER CHARACTERISTICS ARE BASED ON JIS C 5101-4

■定格リプル電流補正係数

リプル周波数が標準品一覧表の規定値と異なる場合には、下表の係数を乗じた値以下でご使用下さい。  
When the ripple frequency differs from the specification shown in the list of standard products, multiply the value with the coefficient shown below, and use the products under the obtained value.

周波数補正係数/FREQUENCY CORRECTION FACTOR

(Hz)	f	50/60	120	1k	10k	100k
200~500		0.80	1.00	1.20	1.30	1.40

■品番ご指定法/HOW TO SPECIFY ITEM NUMBER FOR TYPE LCWB

例/Example 400V LCWB series 390 μF ±20% 4.0mm 25×30L

**2G** **LCWB** **391** **M** **F** **250300**

定格電圧 Rated Voltage シリーズ名 Series Name 静電容量記号 Capacitance Symbol 容量許容差 Capacitance tolerance 端子長さ(T) Terminal length 寸法 Size 記号 Symbol

W.V.	SYMBOL	静電容量 RATED Cap. μF	記号 SYMBOL	静電容量 RATED Cap. μF	記号 SYMBOL
200	2D	68	680	270	271
250	2E	82	820	1200	122
400	2G	180	181	1500	152
450	2W				

容量許容差	端子長さ(T)	寸法 Size	記号 Symbol
±20%=M	長さ length 記号 Symbol	25×30 250300	
	4.0mm F	30×40 300400	
	6.3mm S	35×50 350500	

■寸法表/CASE SIZE TABLE

φD×L (mm)	200V (2D)		250V (2E)		400V (2G)		450V (2W)		500V (2H)	
	Cap μF	Ripple A,rms	Cap μF	Ripple A,rms	Cap μF	Ripple A,rms	Cap μF	Ripple A,rms	Cap μF	Ripple A,rms
22×25			82	0.58	68	0.49	47	0.30		
22×30	270	1.01	220	0.91	100	0.64	82	0.59	68	0.39
22×35	330	1.15	270	1.05	120	0.69	100	0.64	82	0.46
22×40	390	1.21	330	1.17	150	0.81	120	0.69	100	0.67
22×45	470	1.33	390	1.36	180	0.90	150	0.81	120	0.67
22×50	560	1.47	470	1.46	220	1.01	180	0.90	150	0.73
25×25					100	0.68			56	0.35
25×30	390	1.20			150	0.81	100	0.64	82	0.46
25×35	470	1.32	330	1.16	180	0.89	120	0.69	100	0.54
25×40	560	1.46	390	1.33	220	1.00	150	0.81	120	0.63
25×45	680	1.62	470	1.43			180	0.87	150	0.75
25×50	820	1.78	560	1.64	270	1.10	220	1.01	220	0.95

■Ripple current [Max. Value A] at 105°C 120Hz

φD×L (mm)	200V (2D)		250V (2E)		400V (2G)		450V (2W)		500V (2H)	
	Cap μF	Ripple A,rms	Cap μF	Ripple A,rms	Cap μF	Ripple A,rms	Cap μF	Ripple A,rms	Cap μF	Ripple A,rms
30×25					150	0.75	120	0.67		
30×30	560	1.46	390	1.36	180	0.87	150	0.74	150	0.70
30×35	682	1.63	470	1.51	220	1.00	180	0.84	180	0.81
30×40	820	1.83	560	1.64	270	1.10	220	0.94		
30×45	1000	2.10	682	1.82	330	1.31	270	1.07	220	1.00
30×50	1200	2.41	820	1.99	390	1.41	330	1.21		
35×25							150	0.69		
35×30	820	1.82			270	1.11	220	0.97	220	0.93
35×35	1000	2.10	680	1.82	330	1.31	270	1.08	270	1.09
35×40	1200	2.42	820	2.03	390	1.42	330	1.25	330	1.28
35×45	1500	2.81	1000	2.14	470	1.53	390	1.38		
35×50			1200	2.76	560	1.68	470	1.56	390	1.47
35×55					680	1.88				

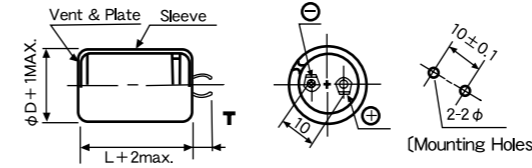
●この寸法表にないカスタム製品も製造いたしますので、御相談下さい。  
● Produce custom products too, which are not found in these tables.

●基板自立形105°C品

LCWS シリーズ JIS C5101 CE-69

- 特徴
- プリント基板自立形端子構造の大容量電解コンデンサで、最高使用温度105°C 5,000時間保証の製品です。
  - 一般電子機器及び産業用機器の電源回路、出力回路等に ご使用頂くのに最適な製品です。

■寸法図/DIAGRAM OF DIMENSIONS



Unit : mm

φD	22~35
T	6.3±1.0
	4.0±1.0

■性能/PERFORMANCE SPECIFICATIONS

カテゴリ温度範囲	CATEGORY TEMPERATURE RANGE	-25°C~+105°C (200~500VDC)
標準静電容量許容差	STANDARD CAPACITANCE TOLERANCE	-20%~+20% (20°C, 120Hz)
漏れ電流 (最大値)	LEAKAGE CURRENT (MAX. VALUE)	I=3iCV (After 5 minutes application of rated voltage) Leakage Current Capacitance Rated Voltage
損失角の正接 (最大値) (25°C, 120Hz)	DISSIPATION FACTOR (MAX. VALUE) (25°C, 120Hz)	W.V. 200 250 400 450 500 tan δ 0.20 0.20 0.25 0.25 0.25
耐久性 105°C 5000時間 定格使用電圧印加	ENDURANCE APPLICATION OF RATED OPERATING VOLTAGE, AT 105°C FOR 5000HOURS.	After applying rated voltage with rated ripple current for 5000 hours at 105°C, the capacitors shall meet the following requirements.
低温特性 (+20°Cにおける120Hzのインピーダンスに対する比) (最大値)	LOW TEMPERATURE STABILITY RATIO OF IMPEDANCE AT COLD TO THAT AT 20°C, 120Hz. MAX. VALUE.	W.V. 200~250 315~450 475~500 Z -25°C / Z +20°C 3 8 10
その他の特性はJIS C5101-4に準ずる	THE OTHER CHARACTERISTICS	THE OTHER CHARACTERISTICS ARE BASED ON JIS C 5101-4

■定格リプル電流補正係数

リプル周波数が標準品一覧表の規定値と異なる場合には、下表の係数を乗じた値以下でご使用下さい。  
When the ripple frequency differs from the specification shown in the list of standard products, multiply the value with the coefficient shown below, and use the products under the obtained value.

周波数補正係数/FREQUENCY CORRECTION FACTOR

(Hz)	f	50/60	120	1k	10k	100k
200~500		0.80	1.00	1.20	1.30	1.40

■品番ご指定法/HOW TO SPECIFY ITEM NUMBER FOR TYPE LCWS

例/Example 400V LCWS series 390 μF ±20% 4.0mm 25×30L

**2G** **LCWS** **391** **M** **F** **250300**

定格電圧 Rated Voltage シリーズ名 Series Name 静電容量記号 Capacitance Symbol 容量許容差 Capacitance tolerance 端子長さ(T) Terminal length 寸法 Size 記号 Symbol

W.V.	SYMBOL	静電容量 RATED Cap. μF	記号 SYMBOL	静電容量 RATED Cap. μF	記号 SYMBOL
200	2D	68	680	270	271
250	2E	82	820	1200	122
400	2G	180	181	1500	152
450	2W				

容量許容差	端子長さ(T)	寸法 Size	記号 Symbol
±20%=M	長さ length 記号 Symbol	25×30 250300	
	4.0mm F	30×40 300400	
	6.3mm S	35×50 350500	

■寸法表/CASE SIZE TABLE

Cap (μF)	200Vdc				220Vdc			
	22	25	30	35	22	25	30	35
270					22×35	1.33		
330	22×25	1.41			22×30	1.55		
390	22×30	1.63			22×35	1.85	25×25	1.50
470	22×35	1.72	25×25	1.57	22×40	2.08	25×30	1.76
560	22×40	1.95	25×30	1.84	22×45	2.34	25×35	1.83
680	22×45	2.22	25×35	2.11	30×25	1.69	30×25	1.64
820	22×50	2.60	25×40	2.37	30×30	2.01	35×25	1.68
1000	22×60	3.00	25×45	2.63	30×35	2.30	35×30	2.02
1200					25×45	2.65	30×35	2.26
1500					25×60	3.19	30×40	2.53
1800							35×35	2.48
2200							30×50	2.97
2700							35×45	3.04

■Ripple current [Max. Value A] at 105°C 120Hz

Cap (μF)	250Vdc				315Vdc			
	22	25	30	35	22	25	30	35
150					22×35	1.00		
180					22×30	1.14		
220					22×35	1.31	25×25	1.20
270	22×25	1.32			22×40	1.49	25×30	1.39
330	22×30	1.54	25×25	1.45	22×45	1.69	25×35	1.59
390	22×35	1.75	25×30	1.68	22×50	1.87	25×40	1.78
470	22×40	1.97	25×30	1.75	22×55	2.09	25×45	1.99
560	22×45	2.20	25×35	1.99	30×25	1.63	30×25	1.41
680	22×50	2.45	25×40	2.25	30×30	1.92	35×25	1.80
820	22×60	2.81	25×45	2.49	30×35	2.19	35×30	1.94
1000					25×55	2.44	30×45	2.32
1200					25×60	2.68	30×50	2.55
1500							30×55	2.78
1800							35×50	3.04
2200							35×60	3.37

●この寸法表にないカスタム製品も製造いたしますので、御相談下さい。  
● Produce custom products too, which are not found in these tables.



Cap. (μF)	350Vdc				385Vdc			
	22	25	30	35	22	25	30	35
120	22×25	0.92			22×25	0.93		
150	22×30	1.08			22×30	1.08		
180	22×35	1.22	25×25	1.13	22×30	1.17	25×25	1.13
220	22×40	1.39	25×30	1.30	22×35	1.33	25×30	1.31
270	22×45	1.57	25×35	1.49	30×25	1.34		
330	22×50	1.77	25×40	1.69	30×30	1.56	35×25	1.42
390	22×55	1.96	25×45	1.88	30×35	1.77	35×30	1.66
470	22×60	2.17	25×50	2.09	30×40	1.99	35×35	1.90
560			25×55	2.30	30×45	2.20	35×40	2.13
680					30×50	2.43	35×40	2.17
820					30×55	2.65	35×45	2.39
1000							35×50	2.61
1200							35×55	2.74

Cap. (μF)	400Vdc				420Vdc			
	22	25	30	35	22	25	30	35
100					22×25	0.85		
120	22×25	0.91			22×30	0.97		
150	22×30	1.06	25×25	1.04	22×35	1.12	25×25	1.03
180	22×35	1.21	25×30	1.19	22×40	1.26	25×30	1.19
220	22×40	1.37	25×30	1.28	30×25	1.25		
270	22×45	1.56	25×35	1.47	30×30	1.45		
330	22×55	1.81	25×40	1.66	30×30	1.55	35×25	1.36
390			25×50	1.93	30×35	1.72	35×30	1.61
470			25×55	2.14	30×40	1.93	35×35	1.83
560					30×45	2.13	35×40	2.04
680					30×55	2.48	35×45	2.26
820							35×50	2.47
1000							35×60	2.85

Cap. (μF)	450Vdc				475Vdc			
	22	25	30	35	22	25	30	35
68					22×25	0.68		
82					22×30	0.78		
100	22×25	0.85			22×35	0.90	25×25	0.85
120	22×30	0.98	25×25	0.96	22×35	0.98	25×30	0.97
150	22×35	1.13	25×30	1.12	22×45	1.16	25×35	1.12
180	22×40	1.27	25×30	1.19	30×25	1.17		
220	22×45	1.44	25×35	1.37	30×30	1.36	35×25	1.27
270	22×55	1.68	25×45	1.62	30×30	1.43	35×30	1.48
330			25×50	1.82	30×40	1.75	35×30	1.53
390			25×55	2.00	30×45	1.93	35×35	1.74
470					30×50	2.14	35×40	1.95
560					30×55	2.36	35×45	2.16
680							35×50	2.41

Cap. (μF)	500Vdc			
	22	25	30	35
56	22×25	0.64		
68	22×30	0.73		
82	22×30	0.80	25×25	0.79
100	22×35	0.92	25×30	0.91
120	22×40	1.03	25×35	1.04
150	22×50	1.22	25×40	1.19
180	22×60	1.39	25×45	1.33
220			25×50	1.50
270			25×60	1.73
330				30×55
390				30×60
470				35×55

Case Size D×L(mm) ↑  
Ripple Current (A.r.m.s./120Hz, 105) ↑

●ネジ端子形標準品

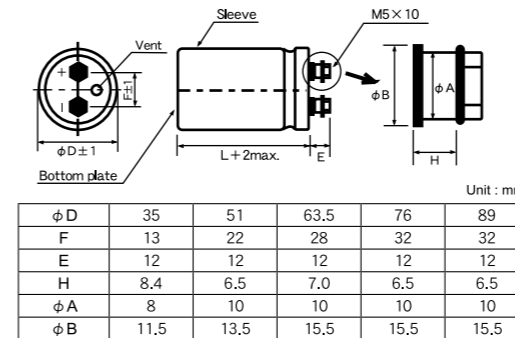
SCLシリーズ

JIS C5101  
CE-33

■特徴

- 産業用機器の大形電源、インバータ等用途として開発したネジ端子形の大容量の製品です。
- 従来品より一段と小形化されておりますが、定格リップル電流は同一水準になっております。

■寸法図/DIAGRAM OF DIMENSIONS



●SCREW TERMINAL STANDARDIZED TYPE

TYPE SCL

JIS C5101  
CE-33

■FEATURES

- This is large capacitance product developed for use in power supply, inverter, etc. for industrial equipment.
- Although this product is made compact much more than the conventional ones, its rated ripple current is on the same level as that of the conventional one.

■性能/PERFORMANCE SPECIFICATIONS

カテゴリ温度範囲	CATEGORY TEMPERATURE RANGE	-40℃~+85℃ (≥315WV: -25℃~+85℃)
標準静電容量許容差	STANDARD CAPACITANCE TOLERANCE	-20%~+20% (25℃, 120Hz)
漏れ電流(最大値)	LEAKAGE CURRENT (MAX. VALUE)	I=0.02CV OR 5mA WHICHEVER IS THE SMALLER (at 25℃, after 5 minutes) C=RATED CAPACITANCE (μF) V=WORKING VOLTAGE (V)
損失角の正接(最大値) (25℃, 120Hz)	DISSIPATION FACTOR (MAX. VALUE) (25℃, 120Hz)	REFER TO CASE SIZE TABLES.
耐久性 85℃ 2000時間 定格使用電圧印加	ENDURANCE APPLICATION OF RATED OPERATING VOLTAGE, AT 85℃ FOR 2000HOURS.	CAPACITANCE CHANGE: LESS THAN 20% OF THE INITIAL MEASURED VALUE. DISSIPATION FACTOR: LESS THAN 200% OF THE INITIAL SPECIFIED VALUE. LEAKAGE CURRENT: LESS THAN THE INITIAL SPECIFIED VALUE.
その他の特性はJIS C5101-4に準ずる	THE OTHER CHARACTERISTICS	THE OTHER CHARACTERISTICS ARE BASED ON JIS C 5101-4

■定格リップル電流補正係数

リップル周波数が標準品一覧表の規定値と異なる場合には、下表の係数を乗じた値以下でご利用下さい。

When the ripple frequency differs from the specification shown in the list of standard products, multiply the value with the coefficient shown below, and use the products under the obtained value.

周波数補正係数/FREQUENCY CORRECTION FACTOR

f(Hz)	50	120	300	1K	3K	5K	10K
10~50	0.95	1.0	1.04	1.10	1.12	1.13	1.15
63~100	0.95	1.0	1.06	1.16	1.20	1.25	1.30
160~200	0.90	1.0	1.10	1.20	1.35	1.40	1.50
250~450	0.80	1.0	1.10	1.20	1.35	1.40	1.50

■CASE SIZE CODE

φD	L	60	70	80	90	100	115	120	130	140	160
51	C060	C070	C080	C090	C100	C115	C120	C130			
64		D070	D080	D090	D100	D115	D120	D130	D140		
76			E080	E090	E100	E115	E120	E130	E140	E160	
90			F080	F090	F100	F115	F120	F130	F140	F160	

■品番ご指定法/HOW TO SPECIFY ITEM NUMBER FOR TYPE SCL

例/Example 160W.V SCL series 22000 μF ±20% φ90×90L Y-type

**2C** **SCL** **223** **M** **F090** **Y**

定格電圧 Rated Voltage シリーズ名 Series Name 静電容量記号 Capacitance Symbol 容量許容差 Capacitance tolerance サイズコード Case size code 金具オプション Clamp Option

例/Example

W.V	SYMBOL	静電容量 RATED Cap. μF	記号 SYM-BOL	静電容量 RATED Cap. μF	記号 SYM-BOL
80	1K	68	680	1200	122
100	2A	82	820	1500	152
160	2C	180	181	3300	332
200	2D	270	271	12000	123

不要=N Without clamp  
I型金具=I With I-type clamp  
Y型金具=Y With Y-type clamp



■寸法表/CASE SIZE TABLE

■Ripple current [Max. Value A] at 85°C 120Hz.

μF	W.V	10V (1A)						16V (1C)						25V (1E)												
		Case size code	tan δ (25°C, 120Hz)	Ripple current	Case size code	tan δ (25°C, 120Hz)	Ripple current	Case size code	tan δ (25°C, 120Hz)	Ripple current	Case size code	tan δ (25°C, 120Hz)	Ripple current	Case size code	tan δ (25°C, 120Hz)	Ripple current										
10000		C060	1.5	7.0			C060	1.0	8.6			C080	0.80	10.3	D070	1.0	9.9									
12000		C060	1.5	7.7			C060	1.0	9.4			C090	0.80	11.7	D070	1.0	10.8									
15000		C060	1.5	8.6			C080	1.0	11.3	D070	1.5	9.9			C115	0.80	14.1	D080	1.0	12.5						
18000		C070	1.5	9.8			C090	1.0	12.8	D070	1.5	10.8			C120	0.80	15.7	D090	1.0	14.2	E080	1.2	13.5			
22000	C080	1.5	11.2	D070	2.0	10.4			C115	1.0	15.3	D080	1.5	12.3			D100	1.0	16.1	E080	1.2	14.9	-	-	-	
27000	C090	1.5	12.8	D070	2.0	11.5			C130	1.0	17.6	D090	1.5	14.2	E080	1.5	14.8	D115	1.0	18.6	E090	1.2	17.1	F080	1.2	17.5
33000	C115	1.5	15.3	D080	2.0	13.1			D115	1.5	16.8	E080	1.5	16.3	-	-	-	D140	1.0	21.9	E115	1.2	20.3	F080	1.2	19.4
39000	C130	1.5	17.3	D090	2.0	14.7	E8	2.0	15.4	D115	1.5	18.3	E090	1.5	18.4	F080	2.0	16.3	E115	1.2	22.0	F090	1.2	21.8		
47000	D100	2.0	16.7	E080	2.0	16.9	-	-	-	D140	1.5	21.3	E115	1.5	21.6	F080	2.0	17.9	E140	1.2	25.6	F100	1.2	24.6		
56000	D110	2.0	19.0	E090	2.0	19.1	F8	2.5	17.5	E115	1.5	23.6	F090	2.0	20.2			F115	1.2	27.9						
68000	D130	2.0	21.7	E100	2.0	21.6	F8	2.5	19.3	E140	1.5	27.6	F115	2.0	23.8			F140	1.2	32.5						
82000	E115	2.0	24.7	F090	2.0	21.9			F130	2.0	27.1															

μF	W.V	35V (1V)						50V (1H)						63V (1J)												
		Case size code	tan δ (25°C, 120Hz)	Ripple current	Case size code	tan δ (25°C, 120Hz)	Ripple current	Case size code	tan δ (25°C, 120Hz)	Ripple current	Case size code	tan δ (25°C, 120Hz)	Ripple current	Case size code	tan δ (25°C, 120Hz)	Ripple current										
27000		C060	0.60	5.8			C060	0.50	6.3			C070	0.40	7.4	-	-	-									
33000		C060	0.60	6.4			C070	0.50	7.3			C080	0.40	8.4	D070	0.50	8.0									
39000		C060	0.60	6.9			C080	0.50	8.1	D070	0.60	8.0			C090	0.40	9.5	D070	0.50	8.7						
47000		C070	0.60	7.9			C090	0.50	9.3	D070	0.60	8.8			C115	0.40	11.3	D080	0.50	9.9						
56000	C070	0.60	8.6	-	-	-	C100	0.50	10.5	D070	0.60	9.6			C130	0.40	12.8	D090	0.50	11.2	E080	0.50	11.7			
68000	C080	0.60	9.8	D070	0.80	9.1			C115	0.50	12.0	D080	0.60	10.9			D100	0.50	12.7	E080	0.50	12.9	-	-	-	
82000	C100	0.60	11.6	D070	0.80	10.0			C130	0.50	13.7	D090	0.60	12.3	E080	0.60	12.9	D115	0.50	14.5	E090	0.50	14.6	F080	0.60	13.7
100000	C115	0.60	13.3	D080	0.80	11.4			D115	0.60	14.7	E090	0.60	14.7	F080	0.80	13.1	D130	0.50	16.7	E100	0.50	16.6	F080	0.60	15.1
120000	C120	0.60	14.8	D090	0.80	12.9	E080	1.0	12.1	D130	0.60	16.7	E100	0.60	16.6	F080	0.80	14.3	E115	0.50	18.9	F090	0.60	17.1		
150000	D100	0.80	14.9	E080	1.0	13.5	-	-	-	E115	0.60	19.3	F090	0.80	16.5			E140	0.50	22.4	F100	0.60	19.6			
180000	C115	0.80	17.0	E090	1.0	15.3	F080	1.0	15.7	E130	0.60	21.9	F100	0.80	18.6			F115	0.60	22.4						
220000	C140	0.80	20.0	E115	1.0	18.1	F090	1.0	17.9	F115	0.80	21.4			F140	0.60	26.2									
270000	E120	1.0	20.3	F100	1.0	20.4			F130	0.80	24.6															
330000	E140	1.0	23.5	F115	1.0	23.5																				
390000	F130	1.0	26.4																							
470000	F140	1.0	29.6																							

μF	W.V	80V (1K)						100V (2A)										
		Case size code	tan δ (25°C, 120Hz)	Ripple current	Case size code	tan δ (25°C, 120Hz)	Ripple current	Case size code	tan δ (25°C, 120Hz)	Ripple current	Case size code	tan δ (25°C, 120Hz)	Ripple current					
12000 (123)		C060	0.30	5.5			C070	0.25	6.4	-	-	-						
15000 (153)		C060	0.30	6.2			C080	0.25	7.0	D070	0.30	7.0						
18000 (183)		C070	0.30	7.0			C090	0.25	8.3	D070	0.30	7.7						
22000 (223)	C080	0.30	8.0	D070	0.40	7.3			C115	0.25	10.0	D080	0.30	8.7				
27000 (273)	C090	0.30	9.2	D070	0.40	8.1			C130	0.25	11.5	D100	0.30	10.3	E080	0.35	9.7	
33000 (333)	C100	0.30	10.5	D080	0.40	9.3			D115	0.25	11.9	E090	0.35	11.1	F080	0.35	11.4	
39000 (393)	C115	0.30	12.0	D090	0.40	10.4	E080	0.40	10.9	D130	0.25	13.4	E100	0.35	12.4	F080	0.35	12.3
47000 (473)	C130	0.30	13.6	D100	0.40	10.0	E080	0.40	11.9	E115	0.35	14.2	F090	0.35	14.0			
56000 (563)	D115	0.40	13.4	E090	0.40	13.5	F080	0.40	13.8	E120	0.35	16.0	F100	0.35	15.7			
68000 (683)	D130	0.40	15.4	E100	0.40	15.3	F080	0.40	15.2	E160	0.35	18.8	F110	0.35	18.0			
82000 (823)	E115	0.40	17.5	F090	0.40	17.3			F130	0.35	20.5							
100000 (104)	E140	0.40	20.5	F100	0.40	19.6			F160	0.35	24.0							
120000 (124)	F115	0.40	22.4															
150000 (154)	F140	0.40	26.5															

Case size code tan δ (25°C, 120Hz) Ripple current

■寸法表 /CASE SIZE TABLE

■ Ripple current [Max. Value A] at 85°C 120Hz.

μF	W.V	160V (2C)						180V (2P)						200V (2D)													
		Case size code	tan δ (25°C, 120Hz)	Ripple current	Case size code	tan δ (25°C, 120Hz)	Ripple current	Case size code	tan δ (25°C, 120Hz)	Ripple current	Case size code	tan δ (25°C, 120Hz)	Ripple current	Case size code	tan δ (25°C, 120Hz)	Ripple current											
3900		C060	0.25	4.5			C070	0.25	4.8	-	-	-			C080	0.25	5.0	D070	0.25	5.3							
4700	C070	0.25	5.2	-	-	-			C080	0.25	5.4	D070	0.25	5.7			C090	0.25	5.7	D070	0.25	5.9					
5600	C080	0.25	5.9	D070	0.25	6.2			C090	0.25	6.1	D070	0.25	6.3			C100	0.25	6.4	D070	0.25	6.4					
6800	C090	0.25	6.7	D070	0.25	6.8			C100	0.25	7.0	D070	0.25	6.9			C115	0.25	7.4	D080	0.25	7.3					
8200	C100	0.25	7.6	D070	0.25	7.5			C115	0.25	8.0	D080	0.25	8.1	E080	0.25	8.1	C130	0.25	8.4	D090	0.25	8.3	E080	0.25	8.2	
10000	C115	0.25	8.8	D090	0.25	8.8	E080	0.25	8.8	C130	0.25	9.2	D100	0.25	9.2	E080	0.25	8.9	D115	0.25	9.8	E090	0.25	9.3	F080	0.25	9.4
12000	C130	0.25	10.0	D100	0.25	10.0	E080	0.25	9.7	D115	0.25	10.5	E090	0.25	10.1	F080	0.25	10.2	D130	0.25	11.2	E100	0.25	10.5	F080	0.25	10.2
15000	D115	0.25	11.6	E090	0.25	11.2	F080	0.25	11.5	D130	0.25	12.2	E100	0.25	11.6	F080	0.25	11.5	E115	0.25	12.3	F090	0.25	11.8			
18000	D130	0.25	13.2	E100	0.25	12.6	F080	0.25	12.6	E115	0.25	13.2	F090	0.25	13.3			E130	0.25	13.9	F100	0.25	11.3				
22000	E115	0.25	14.5	F090	0.25	14.3			E140	0.25	15.5	F100	0.25	14.7			F115	0.25	15.3								
27000	E140	0.25	17.0	F100	0.25	16.3			F115	0.25	17.0						F140	0.25	18.0								
33000	F130	0.25	19.4						F140	0.25	19.9																
39000	F140	0.25	21.6																								

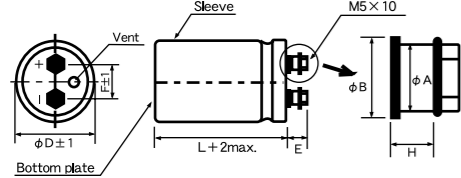
μF	W.V	250V (2E)						315V (2F)						350V (2V)											
		Case size code	tan δ (25°C, 120Hz)	Ripple current	Case size code	tan δ (25°C, 120Hz)	Ripple current	Case size code	tan δ (25°C, 120Hz)	Ripple current	Case size code	tan δ (25°C, 120Hz)	Ripple current	Case size code	tan δ (25°C, 120Hz)	Ripple current									
1200		C060	0.20	3.3					C060	0.20	3.4						C060	0.20	3.9						
1500		C060	0.20	3.7					C060	0.20	3.8						C070	0.20	4.5	-	-	-			
1800		C060	0.20	4.1					C070	0.20	4.3						C080	0.20	5.1	D070	0.20	5.4			
2200		C070	0.20	4.7					C080	0.20	4.9	D070	0.20	5.3			C090	0.20	5.8	D070	0.20	6.0			
2700	C080	0.20	5.3	D070	0.20	5.8			C090	0.20	5.7	D070	0.20	5.9			C100	0.20	6.7	D080	0.20	6.9			
3300	C090	0.20	6.1	D070	0.20	6.4			C100	0.20	6.5	D080													

●ネジ端子形105°C品

**SCW シリーズ** JIS C5101 CE-33

- 特徴
- 産業用機器の大形電源、インバータ等を用途として開発したネジ端子形の大容量の製品です。
  - 高リプル電流、最高使用温度105°C 2000時間保証の製品です。

■寸法図/DIAGRAM OF DIMENSIONS

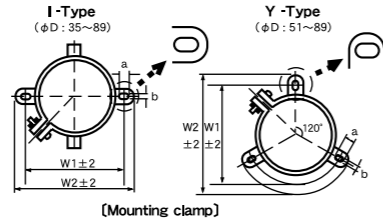


φD	51	64	76	90
F	22.4	28.0	31.5	31.5
E	12.0	12.0	12.0	12.0
H	7.0	7.0	7.0	7.0
φA	10.0	10.0	10.0	10.0
φB	11.5	11.5	11.5	11.5

●SCREW TERMINAL TYPE 105°C USE

**TYPE SCW** JIS C5101 CE-33

- FEATURES
- This is large capacitance product developed for use in power supply, inverter, etc. for industrial equipment.
  - High ripple current, operates at the maximum operating temperature of 105°C and product of 2000 hour guarantee.



φD	Clamp type	I				Y			
		a	b	W1	W2	a	b	W1	W2
51		7.0	5.0	68.0	80.0	5.0	7.0	63.6	73.0
64		7.0	5.0	81.0	93.0	5.0	7.0	76.1	87.2
76		7.0	5.0	93.6	106.0	5.0	7.0	89.0	100.4
90		7.0	5.0	108.0	120.6	5.0	7.0	101.6	113.0

■性能/PERFORMANCE SPECIFICATIONS

カテゴリ温度範囲	CATEGORY TEMPERATURE RANGE	-40°C~+105°C (200~250VDC) -25°C~+105°C (350~450VDC)										
標準静電容量許容差	STANDARD CAPACITANCE TOLERANCE	-20%~+20% (25°C, 120Hz)										
漏れ電流 (最大値)	LEAKAGE CURRENT (MAX. VALUE)	I=0.02CV OR 5mA WHICHEVER C=RATED CAPACITANCE(μF) IS THE SMALLER (at 25°C, after 5 minutes) V=WORKING VOLTAGE (V)										
損失角の正接 (最大値) (25°C, 120Hz)	DISSIPATION FACTOR (MAX. VALUE) (25°C, 120Hz)	<table border="1"> <tr><th>W.V.</th><td>200</td><td>250</td><td>350</td><td>400</td></tr> <tr><th>tan δ</th><td>0.25</td><td>0.25</td><td>0.20</td><td>0.20</td></tr> </table>	W.V.	200	250	350	400	tan δ	0.25	0.25	0.20	0.20
W.V.	200	250	350	400								
tan δ	0.25	0.25	0.20	0.20								
耐久性 105°C 2000時間 定格使用電圧印加	ENDURANCE APPLICATION OF RATED OPERATING VOLTAGE, AT 105°C FOR 2000HOURS.	CAPACITANCE CHANGE : LESS THAN 20% OF THE INITIAL MEASURED VALUE. DISSIPATION FACTOR : LESS THAN 200% OF THE INITIAL SPECIFIED VALUE. LEAKAGE CURRENT : LESS THAN THE INITIAL SPECIFIED VALUE.										
その他の特性はJIS C5101-4に準ずる	THE OTHER CHARACTERISTICS	THE OTHER CHARACTERISTICS ARE BASED ON JIS C 5101-4										

■定格リプル電流補正係数

リプル周波数が標準品一覧表の規定値と異なる場合には、下表の係数を乗じた値以下でご使用下さい。  
When the ripple frequency differs from the specification shown in the list of standard products, multiply the value with the coefficient shown below, and use the products under the obtained value.

周波数補正係数/FREQUENCY CORRECTION FACTOR

(Hz)	f	50/60	120	360	1k	10k
200~400		0.70	1.00	1.10	1.30	1.40

■CASE SIZE CODE

φD	L	80	100	120	150	170	190	230
51		C080	C100	C120				
64		D080	D100	D120	D150			
76			E100	E120	E150	E170	E190	
90			F100	F120	F150	F170	F190	F230

■品番ご指定法/HOW TO SPECIFY ITEM NUMBER FOR TYPE SCW

例/Example

400V **2G** SCW series **SCW** 4700μF **472** ±20% **M** φ90×100L **F100** Y-type **Y**

定格電圧 Rated Voltage | シリーズ名 Series Name | 静電容量記号 Capacitance Symbol | 容量許容差 Capacitance tolerance | サイズコード Case size code | 金具オプション Clamp Option

不要=N Without clamp  
I型金具=I With I-type clamp  
Y型金具=Y With Y-type clamp

W.V.	SYMBOL	静電容量 RATED Cap. μF	記号 SYMBOL	静電容量 RATED Cap. μF	記号 SYMBOL
200	2D	1000	102	10000	103
250	2E	4700	472	15000	153
350	2V	8200	822	22000	223
400	2G				

φD×L	CODE
51×80	C080
64×100	D100
76×150	E150
90×190	F190

■寸法表/CASE SIZE TABLE

■Ripple current [Max. Value A] at 105°C 120Hz

μF	W.V.	200V (2D)				250V (2E)									
		Case size code	Ripple A,rms	Case size code	Ripple A,rms	Case size code	Ripple A,rms	Case size code	Ripple A,rms						
1500						C080	2.4								
1800						C100	2.8								
2200		C080	2.9			C100	3.2	D080	3.0						
2700		C100	3.4			C120	3.7	D080	3.6						
3300		C100	3.9	D080	3.7	C120	4.4	D100	4.3						
3900		C120	4.6	D100	4.4			D100	5.0						
4700				D100	5.1			D120	5.9	E100	5.6				
5600				D120	6.1			D120	6.6	E100	6.4				
6800				D120	7.2	E100	7.0	D150	7.3	E120	7.1				
8200				D120	7.9	E100	7.6	D150	8.9	E120	8.6				
10000				D150	8.5	E120	8.2			E150	10.0	F120	9.6		
12000						E120	9.3	F100	8.9			E190	11.5	F150	11.1
15000						E150	10.4	F120	9.9					F170	12.7
18000						E170	13.2	F120	12.7					F190	14.1
22000						E190	15.7	F150	15.1					F230	15.4

μF	W.V.	350V (2V)				400V (2G)									
		Case size code	Ripple A,rms	Case size code	Ripple A,rms	Case size code	Ripple A,rms	Case size code	Ripple A,rms						
1000		C080	3.9			C080	3.9								
1200		C080	4.2			C100	4.6	D080	4.2						
1500		C100	5.2			C120	5.6	D080	6.0						
1800		C100	5.7	D080	5.4	C120	6.4	D100	5.2						
2200		C120	7.1	D100	6.7			D100	6.9						
2700				D100	7.7			D120	8.2	E100	7.7				
3300				D120	9.1			D120	9.5	E100	9.0				
3900				D120	10.4	E100	9.8			D150	11.1	E120	10.5		
4700				D150	12.2	E120	11.5			E120	12.0	F100	9.9		
5600						E120	13.1	F100	12.4			E150	14.0	F100	11.4
6800						E150	15.5	F120	14.7			E190	17.3	F120	13.3
8200						E170	19.0	F120	18.1					F150	16.5
10000						E190	20.9	F150	19.9					F170	18.1
12000								F190	23.8					F190	21.7
15000								F230	28.8					F230	25.8

- この寸法表にないカスタム製品も製造いたしますので、御相談下さい。
- Produce custom products too, which are not found in these tables.

# 音響用コンデンサ

## Capacitors for AUDIO

### —目次—

音響用アルミニウム電解コンデンサ

Aluminum Electrolytic Capacitors for AUDIO

UCSJ series, UCSPseries	P 80	P 81
BPUS series (Bipolarized type)	P 82	
LCJ series	P 83	

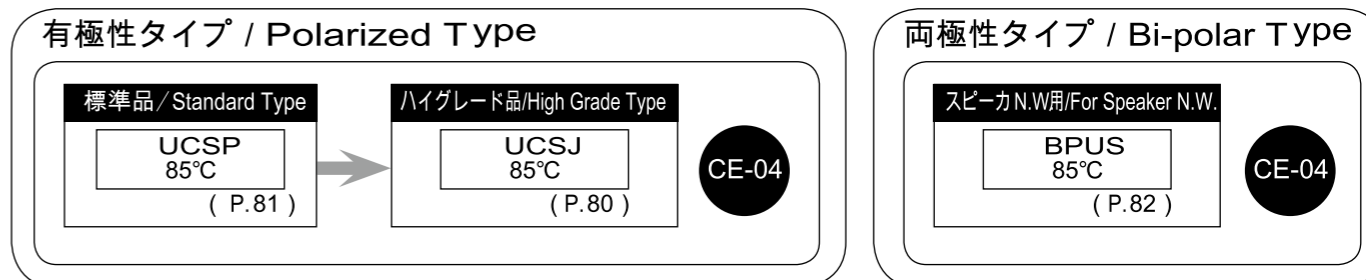
### PRODUCTS SUMMARY

#### ■音響用アルミニウム電解コンデンサ / Aluminum Electrolytic Capacitors for Audio

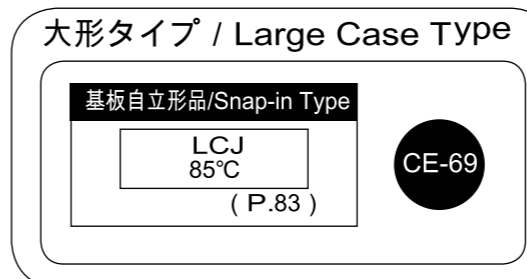
分類 Classification	シリーズ名 Type	概要 Application	カテゴリ温度範囲 Category temp. range (°C)	特徴 Features				定格電圧範囲 Rated voltage (V. DC)	静電容量範囲 Capacitance (µF)	外装色 Sleeve color	印字色 Print color	掲載頁 Page
				標準品	小形低電圧品	低Z品	耐洗浄品					
CE-04 音響用 For Audio	UCSJ	ハイグレード品 High Grade	- 40 ~ + 85					6.3 ~ 63	0.47 ~ 18000	透明 Clear	黒 Black	80
	UCSP	標準品 Standardized	- 40 ~ + 85	●				6.3 ~ 63	0.47 ~ 18000	黒 Black	白 White	81
CE-04 両極性品 Bipolar	BPUS	スピーカーネットワーク用両極性品 Bipolarized type for Speaker Network	- 40 ~ + 85	●				50	0.47 ~ 100	黒 Black	白 White	82
CE-32 音響用 For Audio	LCJ	オーディオ用基板自立形 Snap-in Terminal For Audio	- 25 ~ + 85					25 ~ 63	1500 ~ 33000	黒 Black	白 White	83

#### ●製品体系図 / PRODUCTS CHART

#### ■音響用小形アルミニウム電解コンデンサ / Miniature Aluminum Electrolytic Capacitors For AUDIO



#### ■音響用大形アルミニウム電解コンデンサ / Large Case Type Aluminum Electrolytic Capacitors For AUDIO





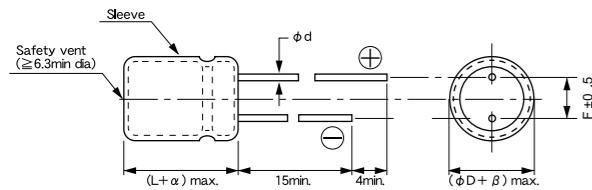
●オーディオ用ハイグレード品 (85°C)

**UCSJシリーズ** JIS C 5101 CE-04

■特徴

- ・豊かな量感と質感を実現したシリーズで高級オーディオ機器に最適。

■寸法図 /DIAGRAM OF DIMENSIONS



φD	5	6.3	8	10	12.5	16	18
φd	0.5	0.5	0.6	0.6	0.6	0.8	0.8
F	2	2.5	3.5	5.0	5.0	7.5	7.5
α	L<20α =1.5, ≥20 α =2						
β	0.5	0.5	0.5	0.5	1.0	1.0	1.0

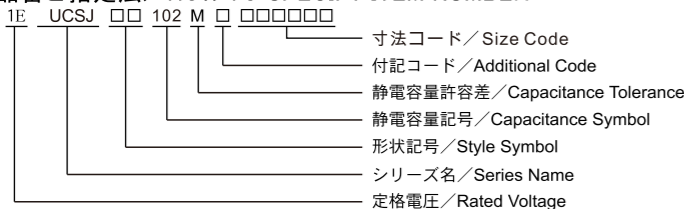
■性能 /PERFORMANCE SPECIFICATIONS

カテゴリ温度範囲	CATEGORY TEMPERATURE RANGE	-40°C ~ +85°C																								
標準静電容量許容差	STANDARD CAPACITANCE TOLERANCE	-20% ~ +20% (120Hz)																								
漏れ電流 (最大値)	LEAKAGE CURRENT (MAX. VALUE)	I=0.01CV OR 3μA WHICHEVER C=RATED CAPACITANCE (μF) IS THE GREATER (after 2minutes) V=WORKING VOLTAGE (V)																								
損失角の正接 (最大値) (tanδ)	DISSIPATION FACTOR (MAX. VALUE) (tanδ)	<table border="1"> <tr> <td>W.V</td> <td>6.3</td> <td>10</td> <td>16</td> <td>25</td> <td>35</td> <td>50</td> <td>63</td> </tr> <tr> <td>tanδ</td> <td>0.24</td> <td>0.20</td> <td>0.16</td> <td>0.14</td> <td>0.12</td> <td>0.10</td> <td>0.08</td> </tr> </table> <p>When the capacitance exceed 1000μF, the value of tan δ is increased by 0.02 for each increment of 1000μF or its fraction.</p>	W.V	6.3	10	16	25	35	50	63	tanδ	0.24	0.20	0.16	0.14	0.12	0.10	0.08								
W.V	6.3	10	16	25	35	50	63																			
tanδ	0.24	0.20	0.16	0.14	0.12	0.10	0.08																			
耐久性 85°C 1000時間 定格使用電圧印加	ENDURANCE APPLICATION OF RATED OPERATING VOLTAGE, AT 85°C FOR 1000 HOURS.	CAPACITANCE CHANGE : LESS THAN 20% OF THE INITIAL MEASURED VALUE. DISSIPATION FACTOR : LESS THAN 200% OF THE INITIAL SPECIFIED VALUE. LEAKAGE CURRENT : LESS THAN THE INITIAL SPECIFIED VALUE.																								
低温特性 (+20°Cにおける120Hzのインピーダンスに対する比) (最大値)	LOW TEMPERATURE STABILITY (RATIO OF IMPEDANCE AT COLD TO THAT AT 20°C, 120Hz. MAX. VALUE.)	<table border="1"> <tr> <td>W.V.</td> <td>6.3</td> <td>10</td> <td>16</td> <td>25</td> <td>35</td> <td>50</td> <td>63</td> </tr> <tr> <td>Z-25°C/Z+20°C</td> <td>4</td> <td>3</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> </tr> <tr> <td>Z-40°C/Z+20°C</td> <td>10</td> <td>8</td> <td>6</td> <td>4</td> <td>3</td> <td>3</td> <td>3</td> </tr> </table>	W.V.	6.3	10	16	25	35	50	63	Z-25°C/Z+20°C	4	3	2	2	2	2	2	Z-40°C/Z+20°C	10	8	6	4	3	3	3
W.V.	6.3	10	16	25	35	50	63																			
Z-25°C/Z+20°C	4	3	2	2	2	2	2																			
Z-40°C/Z+20°C	10	8	6	4	3	3	3																			
その他の特性は JIS C5101-4に準ずる	THE OTHER CHARACTERISTICS	THE OTHER CHARACTERISTICS ARE BASED ON JIS C 5101-4																								

■寸法表 /CASE SIZE TABLE

μF \ W.V	6.3V	10V	16V	25V	35V	50V	63V
0.47						5×11	
1.0						5×11	
2.2						5×11	
3.3						5×11	
4.7				5×11	5×11	5×11	5×11
10		5×11	5×11	5×11	5×11	5×11	5×11
22	5×11	5×11	5×11	5×11	5×11	5×11	6.3×11
33	5×11	5×11	5×11	5×11	5×11	6.3×11	6.3×11
47	5×11	5×11	5×11	5×11	6.3×11	6.3×11	8×11.5
100	5×11	5×11	6.3×11	6.3×11	8×11.5	8×11.5	10×12.5
220	6.3×11	6.3×11	8×11.5	8×11.5	10×12.5	10×16	10×20
330	6.3×11	8×11.5	8×11.5	10×12.5	10×16	10×20	12.5×20
470	8×11.5	8×11.5	10×12.5	10×16	10×20	12.5×20	12.5×25
1000	10×12.5	10×16	10×20	12.5×20	12.5×25	16×25	16×31.5
2200	12.5×20	12.5×20	12.5×25	16×25	16×31.5	18×35.5	18×40
3300	12.5×20	12.5×25	16×25	16×31.5	18×35.5		
4700	16×25	16×25	16×31.5	18×35.5	18×40		
6800	16×25	16×31.5	18×35.5				
10000	16×31.5	18×35.5	18×40				
12000	16×35.5	18×35.5					
15000	18×35.5	18×40					
18000	18×40						

■品番ご指定法 /HOW TO SPECIFY ITEM NUMBER



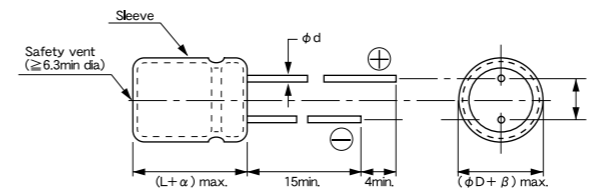
●オーディオ用標準品 (85°C)

**UCSPシリーズ** JIS C5101 CE-04

■特徴

- ・クリアでハイクオリティーなサウンドを実現した音響用コンデンサの標準品です。

■寸法図 /DIAGRAM OF DIMENSIONS



φD	5	6.3	8	10	12.5	16	18
φd	0.5	0.5	0.6	0.6	0.6	0.8	0.8
F	2	2.5	3.5	5.0	5.0	7.5	7.5
α	L<20α =1.5, ≥20 α =2						
β	0.5	0.5	0.5	0.5	1.0	1.0	1.0

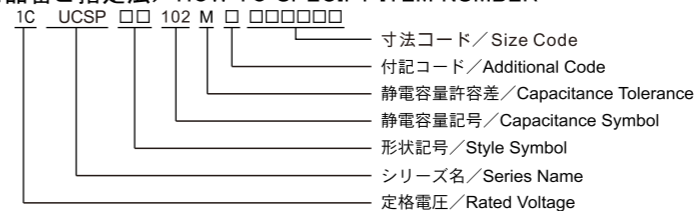
■性能 /PERFORMANCE SPECIFICATIONS

カテゴリ温度範囲	CATEGORY TEMPERATURE RANGE	-40°C ~ +85°C																								
標準静電容量許容差	STANDARD CAPACITANCE TOLERANCE	-20% ~ +20% (120Hz)																								
漏れ電流 (最大値)	LEAKAGE CURRENT (MAX. VALUE)	I=0.01CV OR 3μA WHICHEVER C=RATED CAPACITANCE (μF) IS THE GREATER (after 2minutes) V=WORKING VOLTAGE (V)																								
損失角の正接 (最大値) (tanδ)	DISSIPATION FACTOR (MAX. VALUE) (tanδ)	<table border="1"> <tr> <td>W.V</td> <td>6.3</td> <td>10</td> <td>16</td> <td>25</td> <td>35</td> <td>50</td> <td>63</td> </tr> <tr> <td>tanδ</td> <td>0.24</td> <td>0.20</td> <td>0.16</td> <td>0.14</td> <td>0.12</td> <td>0.10</td> <td>0.08</td> </tr> </table> <p>When the capacitance exceed 1000μF, the value of tanδ is increased by 0.02 for each increment of 1000μF or its fraction.</p>	W.V	6.3	10	16	25	35	50	63	tanδ	0.24	0.20	0.16	0.14	0.12	0.10	0.08								
W.V	6.3	10	16	25	35	50	63																			
tanδ	0.24	0.20	0.16	0.14	0.12	0.10	0.08																			
耐久性 85°C 1000時間 定格使用電圧印加	ENDURANCE APPLICATION OF RATED OPERATING VOLTAGE, AT 85°C FOR 1000 HOURS.	CAPACITANCE CHANGE : LESS THAN 20% OF THE INITIAL MEASURED VALUE. DISSIPATION FACTOR : LESS THAN 200% OF THE INITIAL SPECIFIED VALUE. LEAKAGE CURRENT : LESS THAN THE INITIAL SPECIFIED VALUE.																								
低温特性 (+20°Cにおける120Hzのインピーダンスに対する比) (最大値)	LOW TEMPERATURE STABILITY (RATIO OF IMPEDANCE AT COLD TO THAT AT 20°C, 120Hz. MAX. VALUE.)	<table border="1"> <tr> <td>W.V.</td> <td>6.3</td> <td>10</td> <td>16</td> <td>25</td> <td>35</td> <td>50</td> <td>63</td> </tr> <tr> <td>Z-25°C/Z+20°C</td> <td>4</td> <td>3</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> </tr> <tr> <td>Z-40°C/Z+20°C</td> <td>10</td> <td>8</td> <td>6</td> <td>4</td> <td>3</td> <td>3</td> <td>3</td> </tr> </table>	W.V.	6.3	10	16	25	35	50	63	Z-25°C/Z+20°C	4	3	2	2	2	2	2	Z-40°C/Z+20°C	10	8	6	4	3	3	3
W.V.	6.3	10	16	25	35	50	63																			
Z-25°C/Z+20°C	4	3	2	2	2	2	2																			
Z-40°C/Z+20°C	10	8	6	4	3	3	3																			
その他の特性は JIS C5101-4に準ずる	THE OTHER CHARACTERISTICS	THE OTHER CHARACTERISTICS ARE BASED ON JIS C5101-4																								

■寸法表 /CASE SIZE TABLE

μF \ W.V	6.3V	10V	16V	25V	35V	50V	63V
0.47						5×11	
1.0						5×11	
2.2						5×11	
3.3						5×11	
4.7				5×11	5×11	5×11	5×11
10				5×11	5×11	5×11	5×11
22	5×11	5×11	5×11	5×11	5×11	5×11	6.3×11
33	5×11	5×11	5×11	5×11	5×11	6.3×11	6.3×11
47	5×11	5×11	5×11	5×11	6.3×11	6.3×11	8×11.5
100	5×11	5×11	6.3×11	6.3×11	8×11.5	8×11.5	10×12.5
220	6.3×11	6.3×11	8×11.5	8×11.5	10×12.5	10×16	10×20
330	6.3×11	8×11.5	8×11.5	10×12.5	10×16	10×20	12.5×20
470	8×11.5	8×11.5	10×12.5	10×16	10×20	12.5×20	12.5×25
1000	10×12.5	10×16	10×20	12.5×20	12.5×25	16×25	16×31.5
2200	12.5×20	12.5×20	12.5×25	16×25	16×31.5	18×35.5	18×40
3300	12.5×20	12.5×25	16×25	16×31.5	18×35.5		
4700	16×25	16×25	16×31.5	18×35.5	18×40		
6800	16×25	16×31.5	18×35.5				
10000	16×31.5	18×35.5	18×40				
12000	16×35.5	18×35.5					
15000	18×35.5	18×40					
18000	18×40						

■品番ご指定法 /HOW TO SPECIFY ITEM NUMBER



●スピーカーネットワーク用両極性品

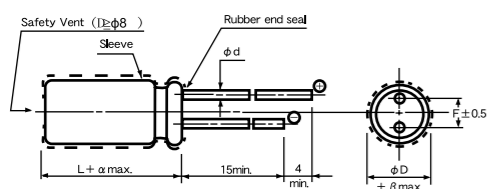
**BPUCシリーズ** JIS C5101 CE-04

(基板洗浄タイプではありません)

■特徴

- Hi-Fiスピーカーのネットワーク用に開発されたシリーズで、損失が小さく、周波数特性、温度特性が極めて優れております。
- 他の種類のコンデンサに比べ小形、低価格になっております。

■寸法図 / DIAGRAM OF DIMENSIONS



φ D	6.3	8	10	12.5	16	18
F	2.5	3.5	5.0	5.0	7.5	7.5
φ d	0.5	0.6	0.6	0.6	0.8	0.8
β	0.5			1.0		

L < 20 : α = 1.5 / L ≥ 20 : α = 2.0

■性能 / PERFORMANCE SPECIFICATIONS

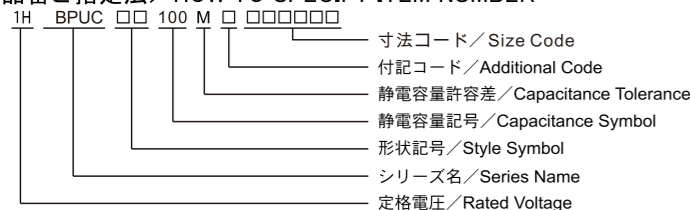
カテゴリ温度範囲	CATEGORY TEMPERATURE RANGE	-40°C ~ +85°C
標準静電容量許容差	STANDARD CAPACITANCE TOLERANCE	±20% (1kHz)
漏れ電流 (最大値)	LEAKAGE CURRENT (MAX. VALUE)	I = 0.03CV OR 3μA WHICHEVER IS THE GREATER (after 5 minutes) C=RATED CAPACITANCE (μF) V=WORKING VOLTAGE (V)
損失角の正接 (最大値) (tan δ)	DISSIPATION FACTOR (MAX. VALUE)	0.08 (1kHz)
耐久性 85°C 1000時間 定格使用電圧印加 (印加電圧は250時間毎に反転)	ENDURANCE 1000 HOURS APPLICATION OF DC WORKING VOLTAGE AT 85°C, REVERSING POLARITY AT EACH 250 Hr.	CAPACITANCE CHANGE LESS THAN 20% OF THE INITIAL MEASURED VALUE. DISSIPATION FACTOR: LESS THAN 200% OF THE INITIAL SPECIFIED VALUE. LEAKAGE CURRENT: LESS THAN THE INITIAL SPECIFIED VALUE.
その他の特性は JIS C5101-4 に準ずる	THE OTHER CHARACTERISTICS	THE OTHER CHARACTERISTICS ARE BASED ON JIS C5101-4

■寸法表 / CASE SIZE TABLE

Unit : mm

μF	Charact. W.V	D
1.0	(010)	50 (1H)
1.5	(1R5)	6.3×11
3.3	(3R3)	6.3×11
4.7	(4R7)	8×11.5
6.8	(6R8)	10×12.5
10	(100)	10×16
15	(150)	10×16

■品番ご指定法 / HOW TO SPECIFY ITEM NUMBER



●BIPOLARIZED TYPE FOR SPEAKER NETWORK

TYPE **BPUC** JIS C5101 CE-04

(Unsuitable washing product)

■FEATURES

- These products are bi-polarized electrolytic capacitors which is specially designed for use in Hi-Fi speaker systems with high performance characteristics (Impedance) and low dissipation factor (tan δ).
- Also these are smaller dimensions as compared with the traditional ones.

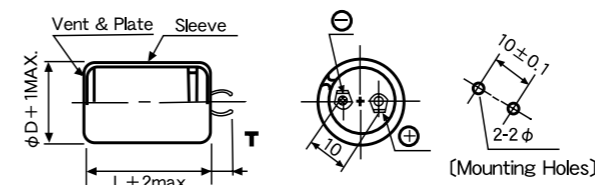
●オーディオ用基板自立形 (85°C)

**LCJシリーズ** JIS C 5101 CE-69

■特徴

- プリント基板自立形端子構造の大容量電解コンデンサ
- 高品質オーディオ機器の電源平滑用等にご使用頂くのに最適な製品です。

■寸法図 / DIAGRAM OF DIMENSIONS



Unit : mm

φ D	22 ~ 35
T	6.3±1.0
	4.0±1.0

■性能 / PERFORMANCE SPECIFICATIONS

カテゴリ温度範囲	CATEGORY TEMPERATURE RANGE	-25°C ~ +85°C				
標準静電容量許容差	STANDARD CAPACITANCE TOLERANCE	-20% ~ +20% (25°C, 120Hz)				
漏れ電流 (最大値)	LEAKAGE CURRENT (MAX. VALUE)	I = 0.02CV OR 3mA WHICHEVER IS THE SMALLER (after 5 minutes) C=RATED CAPACITANCE (μF) V=WORKING VOLTAGE (V)				
損失角の正接 (最大値) (25°C, 120Hz)	DISSIPATION FACTOR (MAX. VALUE) (25°C, 120Hz)	W.V	25	35	50	63
		tan δ	0.40	0.35	0.3	0.25
耐久性 85°C 1000時間 定格使用電圧印加	ENDURANCE APPLICATION OF RATED OPERATING VOLTAGE, AT 85°C FOR 1000 HOURS.	CAPACITANCE CHANGE: LESS THAN 20% OF THE INITIAL MEASURED VALUE. DISSIPATION FACTOR: LESS THAN 200% OF THE INITIAL SPECIFIED VALUE. LEAKAGE CURRENT: LESS THAN THE INITIAL SPECIFIED VALUE.				
		W.V	25V	35V	50V	63V
低温特性 +20°Cにおける120Hzのインピーダンスに対する比 (最大値)	LOW TEMPERATURE STABILITY RATIO OF IMPEDANCE AT COLD TO THAT AT 20°C, 120Hz. MAX. VALUE.	Z - 25°C / Z + 20°C	4	4	3	3
		THE OTHER CHARACTERISTICS ARE BASED ON JIS C5101-4				

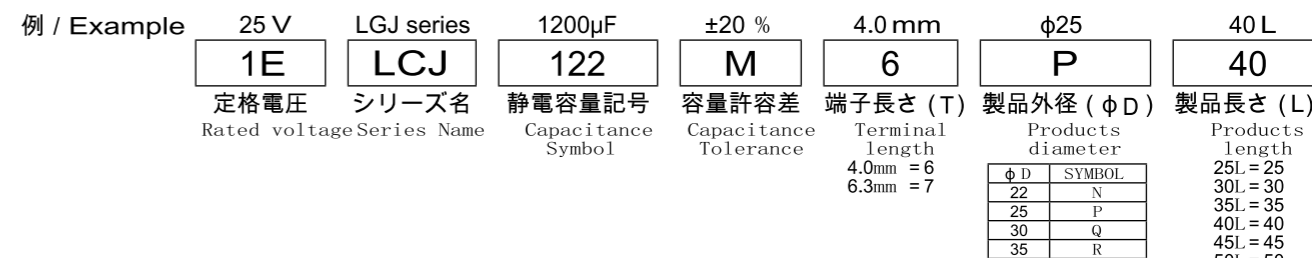
■定格リプル電流補正係数

リプル周波数が標準品一覧表の規定値と異なる場合には、下表の係数を乗じた値以下でご使用下さい。  
When the ripple frequency differs from the specification shown in the list of standard products, multiply the value with the coefficient shown below, and use the products under the obtained value.

周波数補正係数 / FREQUENCY CORRECTION FACTOR

W.V	f (Hz)	50	120	1K	10K	50K
25 ~ 63V		0.95	1.0	1.10	1.15	1.20

■品番ご指定法 / HOW TO SPECIFY ITEM NUMBER FOR TYPE LCJ



■寸法表 / CASE SIZE TABLE

Size φD × L (mm)	25V (1E)		35V (1V)		50V (1H)		63V (1J)	
	Cap. (μF)	Ripple (Arms)	Cap. (μF)	Ripple (Arms)	Cap. (μF)	Ripple (Arms)	Cap. (μF)	Ripple (Arms)
22×25	5600	1.85	3300	1.75	2200	1.85	1500	1.90
22×30	6800	2.20	4700	2.20	2700	2.00	1800	2.00
22×35	8200	2.35	5600	2.35	3300	2.20	2200	2.20
22×40	10000	2.65	6800	2.60	3900	2.35	2700	2.45
22×45	12000	2.90	8200	2.90	4700	2.60	3300	2.80
22×50	15000	3.00	10000	2.95	5600	2.90	3900	2.85
25×25	6800	2.15	4700	2.15	2700	1.95	2200	2.00
25×30	10000	2.45	6800	2.50	3900	2.50	2700	2.15
25×35	12000	2.65	8200	2.70	4700	2.70	3300	2.50
25×40	15000	3.00	10000	2.95	5600	2.90	3900	2.90
25×45	-	-	12000	3.25	6800	3.30	4700	3.10
25×50	18000	3.55	-	-	8200	3.55	5600	3.35

■Ripple current [Max. Value A] at 85°C 120Hz

Size φD × L (mm)	25V (1E)		35V (1V)		50V (1H)		63V (1J)	
	Cap. (μF)	Ripple (Arms)	Cap. (μF)	Ripple (Arms)	Cap. (μF)	Ripple (Arms)	Cap. (μF)	Ripple (Arms)
30×25	10000	2.65	6800	2.60	3900	2.35	3300	2.50
30×30	12000	2.80	8200	2.75	5600	3.00	3900	2.85
30×35	18000	3.35	10000	3.00	6800	3.25	4700	3.10
30×40	-	-	12000	3.30	8200	3.55	5600	3.35
30×45	22000	3.85	15000	3.80	10000	4.00	6800	3.75
30×50	27000	4.20	18000	4.30	12000	4.20	8200	4.10
35×25	12000	2.65	10000	3.20	5600	2.85	3900	2.85
35×30	18000	3.50	12000	3.40	8200	3.65	5600	3.35
35×35	22000	3.85	15000	3.80	10000	4.00	6800	3.75
35×40	27000	4.30	18000	4.15	12000	4.35	8200	4.10
35×45	33000	4.85	22000	4.70	-	-	10000	4.50
35×50	-	-	27000	4.80	15000	4.70	12000	4.80

- この寸法表にないカスタム製品も製造いたしますので、御相談下さい。
- Produce custom products which are not found in these tables

# 導電性高分子ハイブリッドアルミ電解コンデンサ

## Hybrid Conductive Polymer Aluminum Electrolytic Capacitors

—目次—

導電性高分子ハイブリッドコンデンサ P85~P92

●長寿命品

**HMBシリーズ**

JIS C 5101  
CE-32

●Long Life Assurance

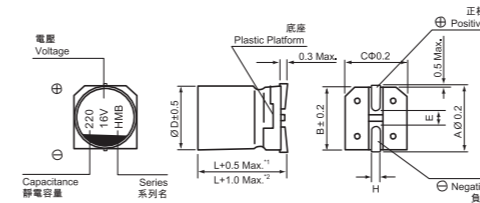
TYPE **HMB**

JIS C 5101  
CE-32

■FEATURES

- Operating with wide temperature range -55~+105°C
- High reliability & high voltage are realized by hybrid electrolyte
- Load life of 5000 hours
- RoHS & REACH compliant, Halogen-free

■寸法図/DIAGRAM OF DIMENSIONS



\*1: Applicable to Ø6.3 and Ø8 適用径 Ø6.3 和 Ø8  
\*2: Applicable to Ø10 and above 適用径 Ø10 和 Ø10 以上

ØD × L	6.3 × 6	6.3 × 7.7	8 × 10.5	8 × 12.5	10 × 10.5	10 × 12.5
A	7.3	7.3	9.0	9.0	11.0	11.0
B	6.6	6.6	8.3	8.3	10.3	10.3
C	6.6	6.6	8.3	8.3	10.3	10.3
E	1.9	1.9	3.1	3.1	4.7	4.7
L	6.0	7.7	10.5	12.5	10.5	12.5
H	0.5~0.8	0.5~0.8	0.8~1.1	0.8~1.1	0.8~1.1	0.8~1.1

■性能/PERFORMANCE SPECIFICATIONS

カテゴリー温度範囲	CATEGORY TEMPERATURE RANGE	-55 ~ +105°C										
標準静電容量許容差	STANDARD CAPACITANCE TOLERANCE	±20% at 120Hz, 20°C										
漏れ電流 (最大値)	LEAKAGE CURRENT (MAX.VALUE)	Leakage current ≤0.01CV (after 2 minutes application of rated voltage at 20°C) C: Nominal capacitance (µF) V: Rated voltage (V)										
損失角の正接 (最大値)	DISSIPATION FACTOR (MAX.VALUE)	≤Specified value at 120KHz, 20°C.										
E.S.R	E.S.R.	≤Specified value at 100KHz, 20°C.										
低温特性	Stability at Low Temperature	Measurement frequency 測試頻率: 100KHz Impedance Ratio 阻抗比 $Z(-25°C)/Z(20°C) \leq 1.5$ $ZT/Z20 (max)$ $Z(-55°C)/Z(20°C) \leq 2.0$										
耐久性	LOAD LIFE TEST	<table border="1"> <tbody> <tr> <td>Capacitance Change</td> <td>Within ±30% of initial value</td> </tr> <tr> <td>Dissipation Factor</td> <td>200% or less of initial specified value</td> </tr> <tr> <td>ESR</td> <td>200% or less of initial specified value</td> </tr> <tr> <td>Leakage Current</td> <td>Initial specified value or less</td> </tr> </tbody> </table> <p>After 5000 hours application of the rated voltage at 105 °C, they meet the characteristics listed below.</p>	Capacitance Change	Within ±30% of initial value	Dissipation Factor	200% or less of initial specified value	ESR	200% or less of initial specified value	Leakage Current	Initial specified value or less		
	Capacitance Change	Within ±30% of initial value										
Dissipation Factor	200% or less of initial specified value											
ESR	200% or less of initial specified value											
Leakage Current	Initial specified value or less											
	MOISTURE RESISTANCE	After leaving capacitors under no load at 105°C for 1000 hours, they meet the specified value for Endurance characteristics listed above.										
定格リプル電流補正係数	RIPPLE CURRENT & FREQUENCY MULTIPLIERS	<table border="1"> <thead> <tr> <th>Frequency(Hz)</th> <th>120Hz ≤ f ≤ 1KHz</th> <th>1KHz ≤ f ≤ 10KHz</th> <th>10KHz ≤ f ≤ 100KHz</th> <th>100KHz ≤ f ≤ 300KHz</th> </tr> </thead> <tbody> <tr> <td>Coefficient</td> <td>0.10</td> <td>0.40</td> <td>0.70</td> <td>1.00</td> </tr> </tbody> </table>	Frequency(Hz)	120Hz ≤ f ≤ 1KHz	1KHz ≤ f ≤ 10KHz	10KHz ≤ f ≤ 100KHz	100KHz ≤ f ≤ 300KHz	Coefficient	0.10	0.40	0.70	1.00
Frequency(Hz)	120Hz ≤ f ≤ 1KHz	1KHz ≤ f ≤ 10KHz	10KHz ≤ f ≤ 100KHz	100KHz ≤ f ≤ 300KHz								
Coefficient	0.10	0.40	0.70	1.00								

■定格リプル電流補正係数

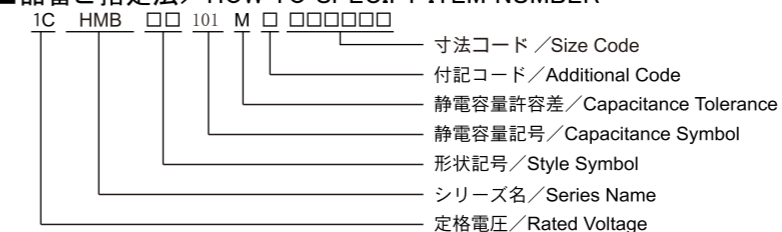
リプル周波数が標準品一覧表の規定値と異なる場合には、下表の係数を乗じた値以下でご使用下さい。

When the ripple frequency differs from the spicification shown in the list of standard products, multiply the value with the coefficient shown below, and use the products under the obtained value.

周波数補正係数/FREQUENCY CORRECTION FACTOR

Cap.(µF)	Frequency (Hz)			
	120	1K	10K	100K
27~180	0.40	0.75	0.90	1.00
220~560	0.50	0.85	0.94	1.00
680~1800	0.60	0.87	0.95	1.00
2200~3900	0.75	0.90	0.95	1.00
4700~10000	0.85	0.95	0.98	1.00

■品番ご指定法/HOW TO SPECIFY ITEM NUMBER





■寸法表/CASE SIZE TABLE

■Impedance[Max.Value Ω] at 20°C 100kHz  
 ■Ripple Current [Max. value mA] at 105°C 100kHz

Cap. (μF)	WV (V)	Parameter	16 (1C)					25 (1E)				
			Case size ØD×L (mm)	Dissipation factor (tan δ)	Leakage current (δA)	ESR (mΩ) max. 20°C, 100KHz	Ripple current (mA rms) 105°C, 100KHz	Case size ØD×L (mm)	Dissipation factor (tan δ)	Leakage current (μA)	ESR (mΩ) max. 20°C, 100KHz	Ripple current (mA rms) 105°C, 100KHz
68	680						6.3 × 6.0	0.14	17	50	1300	
100	101		6.3 × 6.0	0.16	16	45	1600	6.3 × 7.7	0.14	25	30	2000
150	151							6.3 × 7.7	0.14	37.5	30	2000
220	221		6.3 × 7.7	0.16	35.2	27	2200	8 × 10.5	0.14	67.5	27	2300
270	271		8 × 10.5	0.16	43.2	22	2500					
330	331							8 × 10.5 (10 × 10.5)	0.14 (0.14)	82.5 (82.5)	27 (20)	2300 (2500)
470	471		8 × 10.5 (10 × 10.5)	0.16 (0.16)	75.2 (75.2)	22 (18)	2500 (2600)	8 × 12.5 (10 × 10.5)	0.14 (0.14)	117.5 (117.5)	23 (20)	2600 (2500)
680	681		8 × 12.5 (10 × 10.5)	0.16 (0.16)	131.2 (131.2)	20 (18)	2700 (2600)	10 × 12.5	0.14	170	15	3000
820	821											
1500	152		10 × 12.5	0.16	240	14	3400					

Cap. (μF)	WV (V)	Parameter	35 (1V)					50 (1H)				
			Case size D×L (mm)	Dissipation factor (tan δ)	Leakage current (δA)	ESR (mΩ) max. 20°C, 100KHz	Ripple current (mA rms) 105°C, 100KHz	Case size ØD×L (mm)	Dissipation factor (tan δ)	Leakage current (μA)	ESR (mΩ) max. 20°C, 100KHz	Ripple current (mA rms) 105°C, 100KHz
27	270						6.3 × 6.0	0.10	13.5	80	1100	
33	330							6.3 × 7.7	0.10	16.5	40	1600
68	680		6.3 × 6.0	0.12	23.8	60	1300	8 × 10.5	0.10	34	30	1800
100	101		6.3 × 7.7	0.12	35	35	2000	8 × 10.5 (10 × 10.5)	0.10 (0.10)	50 (50)	30 (25)	1800 (2000)
120	121							8 × 12.5	0.10	60	28	2000
150	151		8 × 10.5	0.12	52.5	27	2300	10 × 10.5	0.10	75	25	2000
180	181		8 × 10.5	0.12	63	27	2300					
220	221		8 × 12.5	0.12	77	24	2500	10 × 12.5	0.12	110	23	2200
270	271		10 × 10.5	0.12	94.5	20	2500					
330	331		10 × 10.5	0.12	115.5	20	2500					
470	471		10 × 12.5	0.12	164.5	16	2900					

Cap. (μF)	WV (V)	Parameter	63 (1J)					80 (1K)				
			Case size ØD×L (mm)	Dissipation factor (tan δ)	Leakage current (δA)	ESR (mΩ) max. 20°C, 100KHz	Ripple current (mA rms) 105°C, 100KHz	Case size ØD×L (mm)	Dissipation factor (tan δ)	Leakage current (μA)	ESR (mΩ) max. 20°C, 100KHz	Ripple current (mA rms) 105°C, 100KHz
22	220		6.3 × 7.7	0.08	13.86	80	1500	8 × 10.5	0.08	17.6	45	1600
33	330		8 × 10.5	0.08	20.79	40	1600	8 × 10.5	0.08	26.4	45	1600
47	470		8 × 10.5	0.08	29.61	40	1600	8 × 12.5 (10 × 10.5)	0.08 (0.08)	37.6 (37.6)	42 (36)	1750 (1700)
56	560		10 × 10.5	0.08	35.28	30	1800	10 × 10.5	0.08	44.8	36	1700
82	820							10 × 12.5	0.08	65.6	33	1850
100	101		8 × 10.5 (10 × 10.5)	0.08 (0.08)	63 (63)	36 (30)	1800 (1800)					
150	151		10 × 12.5	0.08	94.5	26	2000					

Cap. (μF)	WV (V)	Parameter	100 (2A)				
			Case size ØD×L (mm)	Dissipation factor (tan δ)	Leakage current (μA)	ESR (mΩ) max. 20°C, 100KHz	Ripple current (mA rms) 105°C, 100KHz
33	330		10 × 10.5	0.08	33	80	1400
47	470		10 × 12.5	0.08	47	60	1600

●125°C高温, 高可靠品

HMRシリーズ

JIS C 5101  
CE-32

●125°C High Temperature, High Reliability

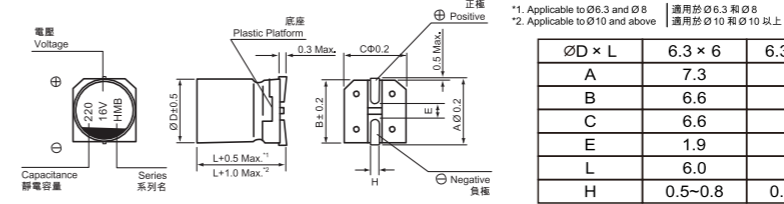
TYPE HMR

JIS C 5101  
CE-32

■FEATURES

- Operating with wide temperature range -55~+125°C
- High reliability & high voltage are realized by hybrid electrolyte
- Load life of 4000 hours
- RoHS & REACH compliant, Halogen-free

■寸法図/DIAGRAM OF DIMENSIONS



■性能/PERFORMANCE SPECIFICATIONS

カテゴリー温度範囲	CATEGORY TEMPERATURE RANGE	-55 ~ +105°C										
標準静電容量許容差	STANDARD CAPACITANCE TOLERANCE	±20% at 120Hz, 20°C										
漏れ電流 (最大値)	LEAKAGE CURRENT (MAX.VALUE)	Leakage current ≤0.01CV (after 2 minutes application of rated voltage at 20°C) C: Nominal capacitance (μF) V: Rated voltage (V)										
損失角の正接 (最大値)	DISSIPATION FACTOR (MAX.VALUE)	≤Specified value at 120KHz, 20°C.										
E.S.R	E.S.R.	≤Specified value at 100KHz, 20°C.										
低温特性	Stability at Low Temperature	Measurement frequency 測試頻率: 100KHz <table border="1"> <tr> <td>Impedance Ratio 阻抗比</td> <td>Z(-25°C)/Z(20°C)</td> <td>≤1.5</td> </tr> <tr> <td>ZT/Z20 (max)</td> <td>Z(-55°C)/Z(20°C)</td> <td>≤2.0</td> </tr> </table>	Impedance Ratio 阻抗比	Z(-25°C)/Z(20°C)	≤1.5	ZT/Z20 (max)	Z(-55°C)/Z(20°C)	≤2.0				
Impedance Ratio 阻抗比	Z(-25°C)/Z(20°C)	≤1.5										
ZT/Z20 (max)	Z(-55°C)/Z(20°C)	≤2.0										
耐久性	LOAD LIFE TEST	<table border="1"> <tr><td>Capacitance Change</td><td>Within ±30% of initial value</td></tr> <tr><td>Dissipation Factor</td><td>200% or less of initial specified value</td></tr> <tr><td>ESR</td><td>200% or less of initial specified value</td></tr> <tr><td>Leakage Current</td><td>Initial specified value or less</td></tr> </table> After 4000 hours application of the rated voltage at 125 °C, they meet the characteristics listed below.	Capacitance Change	Within ±30% of initial value	Dissipation Factor	200% or less of initial specified value	ESR	200% or less of initial specified value	Leakage Current	Initial specified value or less		
Capacitance Change	Within ±30% of initial value											
Dissipation Factor	200% or less of initial specified value											
ESR	200% or less of initial specified value											
Leakage Current	Initial specified value or less											
	MOISTURE RESISTANCE	After leaving capacitors under no load at 105°C for 1000 hours, they meet the specified value for Endurance characteristics listed above.										
定格リップル電流補正係数	RIPPLE CURRENT & FREQUENCY MULTIPLIERS	<table border="1"> <tr> <th>Frequency(Hz)</th> <th>120Hz ≤ f ≤ 1KHz</th> <th>1KHz ≤ f ≤ 10KHz</th> <th>10KHz ≤ f ≤ 100KHz</th> <th>100KHz ≤ f ≤ 300KHz</th> </tr> <tr> <td>Coefficient</td> <td>0.10</td> <td>0.40</td> <td>0.70</td> <td>1.00</td> </tr> </table>	Frequency(Hz)	120Hz ≤ f ≤ 1KHz	1KHz ≤ f ≤ 10KHz	10KHz ≤ f ≤ 100KHz	100KHz ≤ f ≤ 300KHz	Coefficient	0.10	0.40	0.70	1.00
Frequency(Hz)	120Hz ≤ f ≤ 1KHz	1KHz ≤ f ≤ 10KHz	10KHz ≤ f ≤ 100KHz	100KHz ≤ f ≤ 300KHz								
Coefficient	0.10	0.40	0.70	1.00								

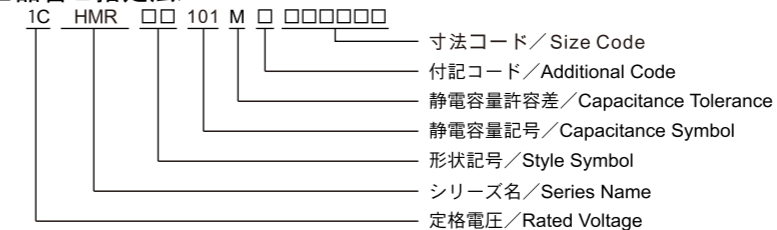
■定格リップル電流補正係数

リップル周波数が標準品一覧表の規定値と異なる場合には、下表の係数を乗じた値以下でご利用下さい。  
 When the ripple frequency differs from the spicification shown in the list of standard products, multiply the value with the coefficient shown below, and use the products under the obtained value.

周波数補正係数/FREQUENCY CORRECTION FACTOR

Cap.(μF)	Frequency (Hz)			
	120	1K	10K	100K
27~180	0.40	0.75	0.90	1.00
220~560	0.50	0.85	0.94	1.00
680~1800	0.60	0.87	0.95	1.00
2200~3900	0.75	0.90	0.95	1.00
4700~10000	0.85	0.95	0.98	1.00

■品番ご指定法/HOW TO SPECIFY ITEM NUMBER



■寸法表/CASE SIZE TABLE

■Impedance [Max.Value Ω] at 20°C 100kHz  
 ■Ripple Current [Max. value mA] at 105°C 100kHz

Cap. (μF)	WV (V)	Parameter	16 (1C)					25 (1E)				
			Case size D×L (mm)	Dissipation factor (tan δ)	Leakage current (δA)	ESR (mΩ) max. 20°C, 100KHz	Ripple current (mA rms) 125°C, 100KHz	Case size ØD×L (mm)	Dissipation factor (tan δ)	Leakage current (μA)	ESR (mΩ) max. 20°C, 100KHz	Ripple current (mA rms) 125°C, 100KHz
68	680						6.3 × 6.0	0.14	17	50	900	
100	101		6.3 × 6.0	0.16	16	45	950	6.3 × 7.7	0.14	25	30	1400
150	151							6.3 × 7.7	0.14	37.5	30	1400
220	221		6.3 × 7.7	0.16	35.2	27	1450	8 × 10.5	0.14	67.5	27	1600
270	271		8 × 10.5	0.16	43.2	22	1700					
330	331							8 × 10.5 (10 × 10.5)	0.14 (0.14)	82.5 (82.5)	27 (20)	1600 (2000)
470	471		8 × 10.5 (10 × 10.5)	0.16 (0.16)	75.2 (75.2)	22 (18)	1700 (2100)	8 × 12.5 (10 × 10.5)	0.14 (0.14)	117.5 (117.5)	23 (20)	1900 (2000)
680	681							10 × 12.5	0.14	170	15	2700
820	821		8 × 12.5 (10 × 10.5)	0.16 (0.16)	131.2 (131.2)	20 (18)	1850 (2100)					
1500	152		10 × 12.5	0.16	240	14	3000					

Cap. (μF)	WV (V)	Parameter	35 (1V)					50 (1H)				
			Case size D×L (mm)	Dissipation factor (tan δ)	Leakage current (δA)	ESR (mΩ) max. 20°C, 100KHz	Ripple current (mA rms) 125°C, 100KHz	Case size ØD×L (mm)	Dissipation factor (tan δ)	Leakage current (μA)	ESR (mΩ) max. 20°C, 100KHz	Ripple current (mA rms) 125°C, 100KHz
27	270						6.3 × 6.0	0.10	13.5	80	750	
33	330						6.3 × 7.7	0.10	16.5	40	1100	
68	680		6.3 × 6.0	0.12	23.8	60	900	8 × 10.5	0.10	34	30	1250
100	101		6.3 × 7.7	0.12	35	35	1400	8 × 10.5 (10 × 10.5)	0.10 (0.10)	50 (50)	30 (25)	1150 (1600)
120	121							8 × 12.5	0.10	60	28	1400
150	151		8 × 10.5	0.12	52.5	27	1600	10 × 10.5	0.10	75	25	1600
180	181		8 × 10.5	0.12	63	27	1600					
220	221		8 × 12.5	0.12	77	24	1800	10 × 12.5	0.12	110	23	1800
270	271		10 × 10.5	0.12	94.5	20	2000					
330	331		10 × 10.5	0.12	115.5	20	2000					
470	471		10 × 12.5	0.12	164.5	16	2600					

Cap. (μF)	WV (V)	Parameter	63 (1J)					80 (1K)				
			Case size D×L (mm)	Dissipation factor (tan δ)	Leakage current (δA)	ESR (mΩ) max. 20°C, 100KHz	Ripple current (mA rms) 125°C, 100KHz	Case size ØD×L (mm)	Dissipation factor (tan δ)	Leakage current (μA)	ESR (mΩ) max. 20°C, 100KHz	Ripple current (mA rms) 125°C, 100KHz
22	220		6.3 × 7.7	0.08	13.86	80	900	8 × 10.5	0.08	17.6	45	1050
33	330		8 × 10.5	0.08	20.79	40	1100	8 × 10.5	0.08	26.4	45	1050
47	470		8 × 10.5	0.08	29.61	40	1100	8 × 12.5 (10 × 10.5)	0.08 (0.08)	37.6 (37.6)	42 (36)	1200 (1200)
56	560		10 × 10.5	0.08	35.28	30	1400	10 × 10.5	0.08	44.8	36	1200
82	820							10 × 12.5	0.08	65.6	33	1350
100	101		8 × 10.5 (10 × 10.5)	0.08 (0.08)	63 (63)	36 (30)	1300 (1400)					
150	151		10 × 12.5	0.08	94.5	26	1600					

Cap. (μF)	WV (V)	Parameter	100 (2A)				
			Case size ØD×L (mm)	Dissipation factor (tan δ)	Leakage current (μA)	ESR (mΩ) max. 20°C, 100KHz	Ripple current (mA rms) 125°C, 100KHz
33	330		10 × 10.5	0.08	33	80	850
47	470		10 × 12.5	0.08	47	60	1050

●長寿命品

HPBシリーズ

JIS C 5101  
CE-04

●Long Life Assurance

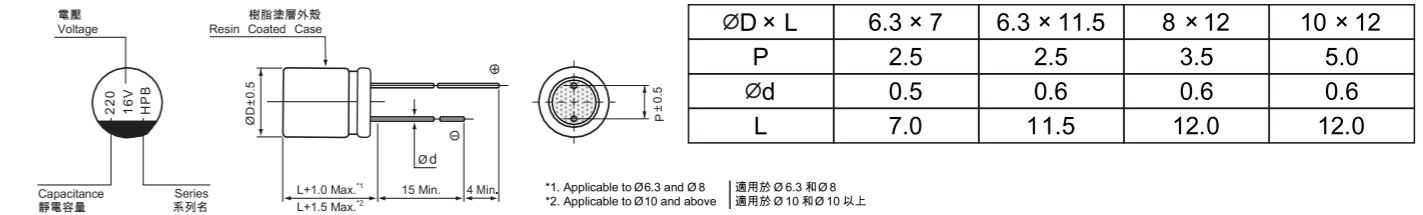
TYPE HPB

JIS C 5101  
CE-04

■FEATURES

- Operating with wide temperature range -55~+105°C
- High reliability & high voltage are realized by hybrid electrolyte
- Load life of 5000 hours
- RoHS & REACH compliant, Halogen-free

■寸法図/DIAGRAM OF DIMENSIONS



■性能/PERFORMANCE SPECIFICATIONS

カテゴリー温度範囲	CATEGORY TEMPERATURE RANGE	-55 ~ +105°C
標準静電容量許容差	STANDARD CAPACITANCE TOLERANCE	±20% at 120Hz, 20°C
漏れ電流 (最大値)	LEAKAGE CURRENT (MAX.VALUE)	Leakage current ≤ 0.01CV (after 2 minutes application of rated voltage at 20°C) C: Nominal capacitance (μF) V: Rated voltage (V)
損失角の正接 (最大値)	DISSIPATION FACTOR (MAX.VALUE)	≤ Specified value at 120KHz, 20°C.
E.S.R.	E.S.R.	≤ Specified value at 100KHz, 20°C.
低温特性	Stability at Low Temperature	Measurement frequency 測試頻率: 100KHz Impedance Ratio 阻抗比 Z(-25°C)/Z(20°C) ≤ 1.5 ZT/Z20(max) Z(-55°C)/Z(20°C) ≤ 2.0
耐久性	LOAD LIFE TEST	Capacitance Change Within ±30% of initial value Dissipation Factor 200% or less of initial specified value ESR 200% or less of initial specified value Leakage Current Initial specified value or less After 5000 hours application of the rated voltage at 105°C, they meet the characteristics listed below.
	MOISTURE RESISTANCE	After leaving capacitors under no load at 105°C for 1000 hours, they meet the specified value for Endurance characteristics listed above.
定格リプル電流補正係数	RIPPLE CURRENT & FREQUENCY MULTIPLIERS	Frequency(Hz) 120Hz ≤ f ≤ 1KHz 1KHz ≤ f ≤ 10KHz 10KHz ≤ f ≤ 100KHz 100KHz ≤ f ≤ 300KHz Coefficient 0.10 0.40 0.70 1.00

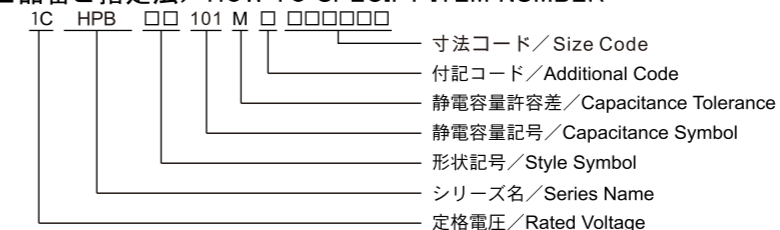
■定格リプル電流補正係数

リプル周波数が標準品一覧表の規定値と異なる場合には、下表の係数を乗じた値以下でご使用下さい。  
 When the ripple frequency differs from the spicification shown in the list of standard products, multiply the value with the coefficient shown below, and use the products under the obtained value.

周波数補正係数/FREQUENCY CORRECTION FACTOR

Cap.(μF)	Frequency (Hz)			
	120	1K	10K	100K
27~180	0.40	0.75	0.90	1.00
220~560	0.50	0.85	0.94	1.00
680~1800	0.60	0.87	0.95	1.00
2200~3900	0.75	0.90	0.95	1.00
4700~10000	0.85	0.95	0.98	1.00

■品番ご指定法/HOW TO SPECIFY ITEM NUMBER



■寸法表/CASE SIZE TABLE

■Impedance[Max.Value Ω] at 20°C 100kHz  
 ■Ripple Current [Max. value mA] at 105°C 100kHz

Cap. (μF)	Parameter	16 (1C)					25 (1E)				
		Case size ∅D×L (mm)	Dissipation factor (tan δ)	Leakage current (μA)	ESR (mΩ) max. 20°C, 100KHz	Ripple current (mA rms) 105°C, 100KHz	Case size ∅D×L (mm)	Dissipation factor (tan δ)	Leakage current (μA)	ESR (mΩ) max. 20°C, 100KHz	Ripple current (mA rms) 105°C, 100KHz
100	101						6.3 × 7	0.14	25	30	2000
150	151						6.3 × 7	0.14	37.5	30	2000
220	221	6.3 × 7	0.16	35.2	27	2200	6.3 × 11.5	0.14	55	27	2250
330	331	6.3 × 11.5	0.16	52.8	25	2350					
470	471						8 × 12	0.14	117.5	23	2600
680	681						10 × 12	0.14	170	15	3000
820	821	8 × 12	0.16	131.2	20	2700					
1500	152	10 × 12	0.16	240	14	3400					

Cap. (μF)	Parameter	35 (1V)					50 (1H)				
		Case size ∅D×L (mm)	Dissipation factor (tan δ)	Leakage current (μA)	ESR (mΩ) max. 20°C, 100KHz	Ripple current (mA rms) 105°C, 100KHz	Case size ∅D×L (mm)	Dissipation factor (tan δ)	Leakage current (μA)	ESR (mΩ) max. 20°C, 100KHz	Ripple current (mA rms) 105°C, 100KHz
33	330						6.3 × 7	0.10	16.5	40	1600
47	470						6.3 × 11.5	0.10	23.5	36	1750
100	101	6.3 × 7	0.12	35	35	2000					
120	121						8 × 12	0.10	60	28	2000
150	151	6.3 × 11.5	0.12	52.5	32	2250					
220	221	8 × 12	0.12	77	24	2500	10 × 12	0.10	110	23	2200
470	471	10 × 12	0.12	164.5	16	2900					

Cap. (μF)	Parameter	63 (1J)					80 (1K)				
		Case size ∅D×L (mm)	Dissipation factor (tan δ)	Leakage current (μA)	ESR (mΩ) max. 20°C, 100KHz	Ripple current (mA rms) 105°C, 100KHz	Case size ∅D×L (mm)	Dissipation factor (tan δ)	Leakage current (μA)	ESR (mΩ) max. 20°C, 100KHz	Ripple current (mA rms) 105°C, 100KHz
22	220	6.3 × 7	0.08	13.9	80	1500					
33	330	6.3 × 11.5	0.08	20.8	70	1600					
47	470						8 × 12	0.08	37.6	42	1750
82	820						10 × 12	0.08	65.6	33	1850
100	101	8 × 12	0.08	63	36	1800					
150	151	10 × 12	0.08	94.5	26	2000					

Cap. (μF)	Parameter	100 (2A)				
		Case size ∅D×L (mm)	Dissipation factor (tan δ)	Leakage current (μA)	ESR (mΩ) max. 20°C, 100KHz	Ripple current (mA rms) 105°C, 100KHz
47	470	10 × 12	0.08	47	60	1600

●125°C高温, 高可靠品  
**HPRシリーズ**

JIS C 5101  
CE-04

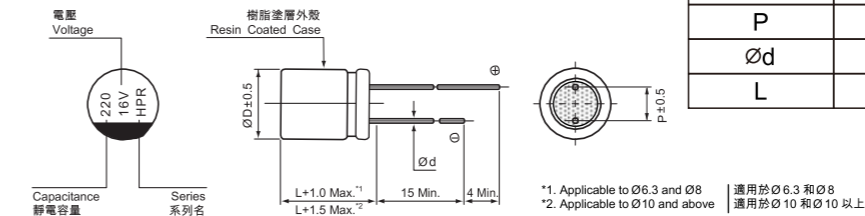
●125°C High Temperature, High Reliability  
**TYPE HPR**

JIS C 5101  
CE-04

■FEATURES

- Operating with wide temperature range -55~+125°C
- High reliability & high voltage are realized by hybrid electrolyte
- Load life of 4000 hours
- RoHS & REACH compliant, Halogen-free

■寸法図/DIAGRAM OF DIMENSIONS



■性能/PERFORMANCE SPECIFICATIONS

カテゴリー温度範囲	CATEGORY TEMPERATURE RANGE	-55 ~ +125°C
標準静電容量許容差	STANDARD CAPACITANCE TOLERANCE	±20% at 120Hz, 20°C
漏れ電流 (最大値)	LEAKAGE CURRENT (MAX.VALUE)	Leakage current ≤0.01CV (after 2 minutes application of rated voltage at 20°C) C: Nominal capacitance (μF) V: Rated voltage (V)
損失角の正接 (最大値)	DISSIPATION FACTOR (MAX.VALUE)	≤Specified value at 120KHz, 20°C.
E.S.R.	E.S.R.	≤Specified value at 100KHz, 20°C.
低温特性	Stability at Low Temperature	Measurement frequency 測試頻率: 100KHz Impedance Ratio 阻抗比 $Z(-25°C)/Z(20°C) \leq 1.5$ $ZT/Z20(max)$ $Z(-55°C)/Z(20°C) \leq 2.0$
耐久性	LOAD LIFE TEST	Capacitance Change Within ±30% of initial value Dissipation Factor 200% or less of initial specified value ESR 200% or less of initial specified value Leakage Current Initial specified value or less After 4000 hours application of the rated voltage at 125 °C, they meet the characteristics listed below.
	MOISTURE RESISTANCE	After leaving capacitors under no load at 105°C for 1000 hours, they meet the specified value for Endurance characteristics listed above.
定格リプル電流補正係数	RIPPLE CURRENT & FREQUENCY MULTIPLIERS	Frequency(Hz) 120Hz ≤ f ≤ 10KHz 1KHz ≤ f ≤ 100KHz 10KHz ≤ f ≤ 100KHz 100KHz ≤ f ≤ 300KHz Coefficient 0.10 0.40 0.70 1.00

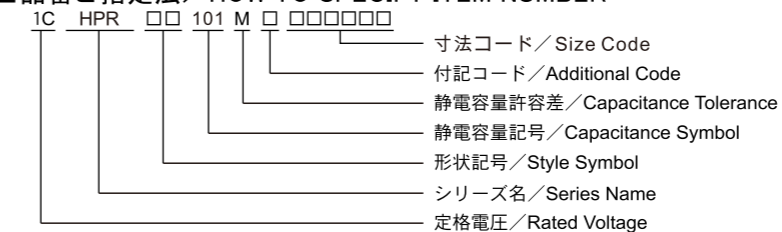
■定格リプル電流補正係数

リプル周波数が標準品一覧表の規定値と異なる場合には、下表の係数を乗じた値以下でご使用下さい。  
 When the ripple frequency differs from the specification shown in the list of standard products, multiply the value with the coefficient shown below, and use the products under the obtained value.

周波数補正係数/FREQUENCY CORRECTION FACTOR

Cap.(μF)	Frequency (Hz)			
	120	1K	10K	100K
27~180	0.40	0.75	0.90	1.00
220~560	0.50	0.85	0.94	1.00
680~1800	0.60	0.87	0.95	1.00
2200~3900	0.75	0.90	0.95	1.00
4700~10000	0.85	0.95	0.98	1.00

■品番ご指定法/HOW TO SPECIFY ITEM NUMBER





■寸法表/CASE SIZE TABLE

■Impedance[Max.Value Ω] at 20°C 100kHz  
 ■Ripple Current [Max. value mA] at 105°C 100kHz

WV (V)		16 (1C)					25 (1E)				
Cap. (μF)	Parameter	Case size ∅D×L (mm)	Dissipation factor (tan δ)	Leakage current (μA)	ESR (mΩ) max. 20°C, 100KHz	Ripple current (mA rms) 125°C, 100KHz	Case size ∅D×L (mm)	Dissipation factor (tan δ)	Leakage current (μA)	ESR (mΩ) max. 20°C, 100KHz	Ripple current (mA rms) 125°C, 100KHz
100	101						6.3 × 7	0.14	25	30	1400
150	151						6.3 × 7	0.14	37.5	30	1400
220	221	6.3 × 7	0.16	35.2	27	1450	6.3 × 11.5	0.14	55	27	1650
330	331	6.3 × 11.5	0.16	52.8	25	1600					
470	471						8 × 12	0.14	117.5	23	1900
680	681						10 × 12	0.14	170	15	2700
820	821	8 × 12	0.16	131.2	20	1850					
1500	152	10 × 12	0.16	240	14	3000					

WV (V)		35 (1V)					50 (1H)				
Cap. (μF)	Parameter	Case size ∅D×L (mm) 尺寸	Dissipation factor (tan δ)	Leakage current (μA)	ESR (mΩ) max. 20°C, 100KHz	Ripple current (mA rms) 125°C, 100KHz	Case size ∅D×L (mm)	Dissipation factor (tan δ)	Leakage current (μA)	ESR (mΩ) max. 20°C, 100KHz	Ripple current (mA rms) 125°C, 100KHz
33	330						6.3 × 7	0.10	16.5	40	1100
47	470						6.3 × 11.5	0.10	23.5	36	1250
100	101	6.3 × 7	0.12	35	35	1400					
120	121						8 × 12	0.10	60	28	1400
150	151	6.3 × 11.5	0.12	52.5	32	1650					
220	221	8 × 12	0.12	77	24	1800	10 × 12	0.10	110	23	1800
470	471	10 × 12	0.12	164.5	16	2600					

WV (V)		63 (1J)					80 (1K)				
Cap. (μF)	Parameter	Case size ∅D×L (mm) 尺寸	Dissipation factor (tan δ)	Leakage current (μA)	ESR (mΩ) max. 20°C, 100KHz	Ripple current (mA rms) 125°C, 100KHz	Case size ∅D×L (mm) 尺寸	Dissipation factor (tan δ)	Leakage current (μA)	ESR (mΩ) max. 20°C, 100KHz	Ripple current (mA rms) 125°C, 100KHz
22	220	6.3 × 7	0.08	13.9	80	900					
33	330	6.3 × 11.5	0.08	20.8	70	1000					
47	470						8 × 12	0.08	37.6	42	1200
82	820						10 × 12	0.08	65.6	33	1350
100	101	8 × 12	0.08	63	36	1300					
150	151	10 × 12	0.08	94.5	26	1600					

WV (V)		100 (2A)				
Cap. (μF)	Parameter	Case size ∅D×L (mm) 尺寸	Dissipation factor (tan δ)	Leakage current (μA)	ESR (mΩ) max. 20°C, 100KHz	Ripple current (mA rms) 125°C, 100KHz
47	470	10 × 12	0.08	47	60	1050

# 導電性高分子アルミ固体電解コンデンサ

Conductive Polymer Aluminum Solid Electrolytic Capacitors

—目次—

導電性高分子固体コンデンサ

P94~P120

● 低ESR品

OMAシリーズ

JIS C 5101  
CE-32

● low E.S.R.

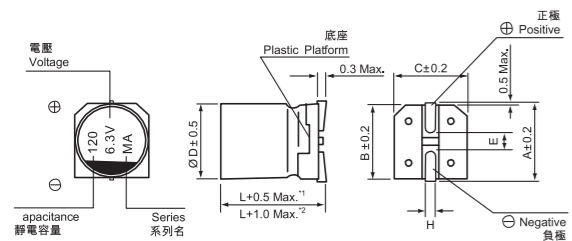
TYPE OMA

JIS C 5101  
CE-32

■ FEATURES

- Operating with wide temperature range -55~+105°C
- Low ESR, high ripple current
- Load life of 2000 hours
- RoHS & REACH compliant, Halogen-free

■ 寸法図/DIAGRAM OF DIMENSIONS



\*1. Applicable to Ø5-Ø8 適用寸 Ø5-Ø8  
\*2. Applicable to Ø10 and above 適用寸 Ø10 和 Ø10 以上

ØD × L	4×5.5	5×6	6.3×5.5/6	8×7	8×12	10×8/10	10×12.7
A	5.0	6.0	7.3	9.0	9.0	11.0	11.0
B	4.3	5.3	6.6	8.3	8.3	10.3	10.3
C	4.3	5.3	6.6	8.3	8.3	10.3	10.3
E	1.0	1.6	2.1	3.2	3.2	4.6	4.6
L	5.5	6.0	5.5/6.0	7.0	12.0	8.0/10.0	12.7
H	0.5~0.8	0.5~0.8	0.5~0.8	0.8~1.1	0.8~1.1	0.8~1.1	0.8~1.1

■ 性能/PERFORMANCE SPECIFICATIONS

カテゴリー温度範囲	CATEGORY TEMPERATURE RANGE	-55 ~ +105°C										
標準静電容量許容差	STANDARD CAPACITANCE TOLERANCE	±20% at 120Hz, 20°C										
漏れ電流 (最大値)	LEAKAGE CURRENT (MAX.VALUE)	≤Specified value (after 2 minutes application of rated voltage at 20°C)										
損失角の正接 (最大値)	DISSIPATION FACTOR (MAX.VALUE)	≤Specified value at 120KHz, 20°C.										
E.S.R.	E.S.R.	≤Specified value at 100KHz, 20°C.										
低温特性	Stability at Low Temperature	Measurement frequency 測試頻率: 100KHz										
		Impedance Ratio 阻抗比 $Z(+105°C)/Z(20°C) \leq 1.25$ $Z(-55°C)/Z(20°C) \leq 1.25$										
耐久 性	LOAD LIFE TEST	Capacitance Change Within ±20% of initial value										
		Dissipation Factor 150% or less of initial specified value										
		ESR 150% or less of initial specified value										
		Leakage Current Initial specified value or less										
耐久 性	MOISTURE RESISTANCE	After 2000 hours application of the rated voltage at 105°C, they meet the characteristics listed below.										
		After reflow soldering and restored at room temperature, they meet the characteristics listed below.										
定格リプル電流補正係数	RIPPLE CURRENT & FREQUENCY MULTIPLIERS	<table border="1"> <thead> <tr> <th>Frequency(Hz)</th> <th>120Hz ≤ f ≤ 1KHz</th> <th>1KHz ≤ f ≤ 10KHz</th> <th>10KHz ≤ f ≤ 100KHz</th> <th>100KHz ≤ f ≤ 300KHz</th> </tr> </thead> <tbody> <tr> <td>Coefficient</td> <td>0.10</td> <td>0.40</td> <td>0.70</td> <td>1.00</td> </tr> </tbody> </table>	Frequency(Hz)	120Hz ≤ f ≤ 1KHz	1KHz ≤ f ≤ 10KHz	10KHz ≤ f ≤ 100KHz	100KHz ≤ f ≤ 300KHz	Coefficient	0.10	0.40	0.70	1.00
Frequency(Hz)	120Hz ≤ f ≤ 1KHz	1KHz ≤ f ≤ 10KHz	10KHz ≤ f ≤ 100KHz	100KHz ≤ f ≤ 300KHz								
Coefficient	0.10	0.40	0.70	1.00								

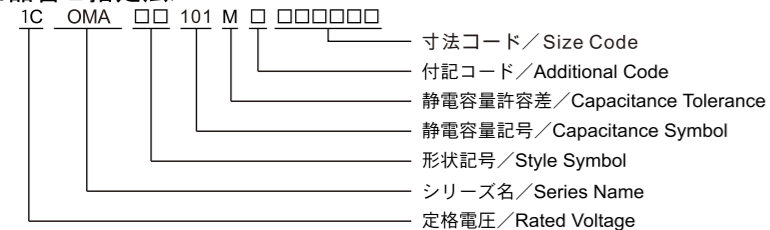
■ 定格リプル電流補正係数

リプル周波数が標準品一覧表の規定値と異なる場合には、下表の係数を乗じた値以下でご使用下さい。  
When the ripple frequency differs from the specification shown in the list of standard products, multiply the value with the coefficient shown below, and use the products under the obtained value.

周波数補正係数/FREQUENCY CORRECTION FACTOR

Cap.(µF)	Frequency (Hz)			
	120	1K	10K	100K
27~180	0.40	0.75	0.90	1.00
220~560	0.50	0.85	0.94	1.00
680~1800	0.60	0.87	0.95	1.00
2200~3900	0.75	0.90	0.95	1.00
4700~10000	0.85	0.95	0.98	1.00

■ 品番ご指定法/HOW TO SPECIFY ITEM NUMBER



■ 寸法表/CASE SIZE TABLE

■ Impedance [Max. Value Ω] at 20°C 100kHz  
■ Ripple Current [Max. value mA] at 105°C 100kHz

Cap. (µF)	WV (V)	Parameter	2.5 (0E)				4 (0G)				
			Case size ØD×L (mm)	Dissipation factor (tan δ)	Leakage current (µA)	ESR (mΩ) max. 20°C, 100KHz	Ripple current (mA rms) 105°C, 100KH	Case size ØD×L (mm)	Dissipation factor (tan δ)	Leakage current (µA)	ESR (mΩ) max. 20°C, 100KHz
33	330						4 × 5.5	0.12	26.4	200	700
100	101		6.3 × 6	0.12	50	22	6.3 × 5.5 (6.3 × 6)	0.12 (0.12)	80 (80)	22 (22)	2600 (2600)
150	151						6.3 × 5.5 (5 × 6) (6.3 × 6)	0.12 (0.12)	120 (300) (120)	22 (30) (22)	2800 (2000) (2800)
220	221		6.3 × 5.5 (6.3 × 6)	0.12 (0.12)	110 (110)	20 (20)	8 × 7	0.12	176	21	3200
330	331						8 × 7	0.12	264	21	3400
470	471		8 × 7	0.12	235	20	10 × 8	0.12	376	17	4200
560	561						8 × 12	0.12	448	13	4520
680	681						10 × 8	0.12	544	17	4400
820	821		10 × 8	0.12	410	17	10 × 10	0.12	656	13	4800
1200	122						10 × 12.7	0.12	960	10	5500
1500	152		10 × 10 (10 × 12.7)	0.12 (0.12)	750 (750)	13 (12)					

Cap. (µF)	WV (V)	Parameter	6.3 (0J)				10 (1A)					
			Case size ØD×L (mm)	Dissipation factor (tan δ)	Leakage current (µA)	ESR (mΩ) max. 20°C, 100KHz	Ripple current (mA rms) 105°C, 100KHz	Case size ØD×L (mm)	Dissipation factor (tan δ)	Leakage current (µA)	ESR (mΩ) max. 20°C, 100KHz	Ripple current (mA rms) 105°C, 100KHz
4.7	4R7						4 × 5.5	0.12	9.4	240	670	
6.8	6R8						4 × 5.5	0.12	13.6	240	670	
10	100						4 × 5.5	0.12	20	220	700	
15	150						4 × 5.5	0.12	30	200	700	
22	220		4 × 5.5	0.12	27.72	200	700					
33	330						5 × 6	0.12	66	35	1500	
47	470		5 × 6	0.12	59.22	35	1600	5 × 6 (6.3 × 6)	0.12 (0.12)	94 (94)	26 (26) (2600)	
56	560						6.3 × 5.5 (6.3 × 6)	0.12 (0.12)	112 (112)	25 (25)	2500 (2500)	
82	820		6.3 × 5.5 (6.3 × 6)	0.12 (0.12)	103 (103)	23 (23)	2600 (2600)					
100	101		6.3 × 5.5 (5 × 6) (6.3 × 6)	0.12 (0.12)	126 (315) (126)	23 (25) (23)	2800 (2200) (2800)					
120	121		6.3 × 6	0.12	151	23	3000	8 × 7	0.12	240	23	3000
150	151		8 × 7	0.12	189	22	3200	8 × 7 (10 × 8)	0.12 (0.12)	300 (300)	23 (21)	3200 (3300)
220	221		8 × 7	0.12	277	22	3400					
270	271						8 × 12 (10 × 8)	0.12 (0.12)	540 (540)	13 (20)	4500 (3600)	
330	331		10 × 8	0.12	416	18	4200	8 × 12 (10 × 8)	0.12 (0.12)	660 (660)	14 (20)	4000 (3700)
470	471		8 × 12 (10 × 8) (10 × 10)	0.12 (0.12)	592 (592) (592)	12 (18) (16)	5300 (4300) (4600)	10 × 10 (10 × 12.7)	0.12 (0.12)	940 (940)	16 (12)	4600 (5300)
560	561						10 × 10 (10 × 12.7)	0.12 (0.12)	1120 (1120)	15 (13)	4800 (5230)	
680	681		10 × 10 (10 × 12.7)	0.12 (0.12)	857 (857)	14 (10)	5000 (5500)					
820	821		10 × 12.7	0.12	1033	10	5800					

■寸法表/CASE SIZE TABLE

■Impedance[Max.Value Ω] at 20°C 100kHz  
 ■Ripple Current [Max. value mA] at 105°C 100kHz

Cap. (μF)	Parameter	16 (1C)					20 (1D)				
		Case size ∅D×L (mm)	Dissipation factor (tan δ)	Leakage current (μA)	ESR (mΩ) max. 20°C, 100KHz	Ripple current (mA rms) 105°C, 100KHz	Case size ∅D×L (mm)	Dissipation factor (tan δ)	Leakage current (μA)	ESR (mΩ) max. 20°C, 100KHz	Ripple current (mA rms) 105°C, 100KHz
3.3	3R3	4 × 5.5	0.12	7.04	260	660					
10	100						4 × 5.5	0.12	40	120	900
22	220	5 × 6	0.12	70.4	45	1210	6.3 × 5.5 (6.3 × 6)	0.12 (0.12)	88 (88)	50 (50)	1700 (1700)
33	330	6.3 × 6	0.12	106	31	2400					
39	390	6.3 × 5.5 (6.3 × 6)	0.12 (0.12)	125 (125)	31 (31)	2400 (2400)	8 × 7	0.12	156	45	2000
47	470						8 × 7	0.12	188	45	2000
56	560	8 × 7	0.12	179	30	2900	10 × 8	0.12	224	40	2400
68	680						10 × 8	0.12	272	40	2600
82	820	8 × 7	0.12	262	28	3200	10 × 8	0.12	328	40	2600
100	101	10 × 8	0.12	320	27	3300	8 × 12	0.12	400	22	3200
120	121						10 × 10	0.12	480	35	2800
150	151	10 × 8 (6.3 × 6.5)	0.12 (0.12)	480 (480)	25 (30)	3500 (2900)	10 × 12.7	0.12	600	20	4320
180	181	8 × 12 (10 × 8)	0.12 (0.12)	576 (576)	16 (25)	4400 (3600)					
220	221	10 × 10 (10 × 12.7)	0.12 (0.12)	704 (704)	20 (14)	3900 (5050)					
330	331	10 × 12.7	0.12	1056	14	5000					

Cap. (μF)	Parameter	25 (1E)				
		Case size ∅D×L (mm)	Dissipation factor (tan δ)	Leakage current (μA)	ESR (mΩ) max. 20°C, 100KHz	Ripple current (mA rms) 105°C, 100KHz
6.8	6R8	6.3 × 6	0.12	34	80	1200
10	100	8 × 7	0.12	50	60	1600
22	220	10 × 8	0.12	110	50	2200
33	330	8 × 12	0.12	165	30	2800
47	470	8 × 12 (10 × 10)	0.12 (0.12)	235 (235)	30 (45)	3000 (2400)
56	560	10 × 12.7	0.12	280	28	3800
100	101	8 × 7	0.12	500	25	3000

● 超低ESR

OMBシリーズ

JIS C 5101  
CE-32

● Ultra low E.S.R.

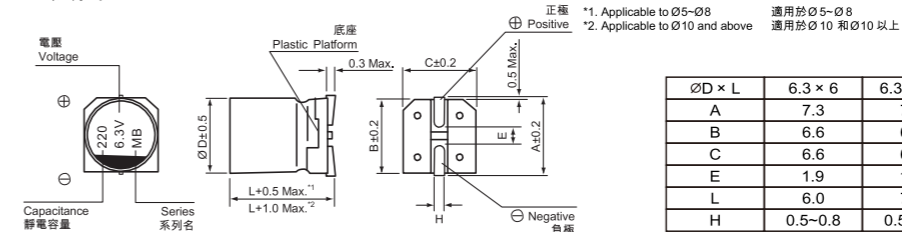
TYPE OMB

JIS C 5101  
CE-32

■ FEATURES

- Operating with wide temperature range -55~+105°C
- Higher capacitance, ultra-low ESR, high ripple current
- Load life of 2000 hours
- RoHS & REACH compliant, Halogen-free

■寸法図/DIAGRAM OF DIMENSIONS



■性能/PERFORMANCE SPECIFICATIONS

カテゴリー温度範囲	CATEGORY TEMPERATURE RANGE	-55 ~ +105°C										
標準静電容量許容差	STANDARD CAPACITANCE TOLERANCE	±20% at 120Hz, 20°C										
漏れ電流 (最大値)	LEAKAGE CURRENT (MAX.VALUE)	≤Specified value (after 2 minutes application of rated voltage at 20°C)										
損失角の正接 (最大値)	DISSIPATION FACTOR (MAX.VALUE)	≤Specified value at 120KHz, 20°C.										
E.S.R	E.S.R.	≤Specified value at 100KHz, 20°C.										
低温特性	Stability at Low Temperature	Measurement frequency 測試頻率: 100KHz <table border="1"> <tr> <td>Impedance Ratio 阻抗比 ZT/Z20 (max)</td> <td>Z(+105°C)/Z(20°C) ≤1.25 Z(-55°C)/Z(20°C) ≤1.25</td> </tr> </table>	Impedance Ratio 阻抗比 ZT/Z20 (max)	Z(+105°C)/Z(20°C) ≤1.25 Z(-55°C)/Z(20°C) ≤1.25								
Impedance Ratio 阻抗比 ZT/Z20 (max)	Z(+105°C)/Z(20°C) ≤1.25 Z(-55°C)/Z(20°C) ≤1.25											
耐久性	LOAD LIFE TEST	<table border="1"> <tr><td>Capacitance Change</td><td>Within ±20% of initial value</td></tr> <tr><td>Dissipation Factor</td><td>150% or less of initial specified value</td></tr> <tr><td>ESR</td><td>150% or less of initial specified value</td></tr> <tr><td>Leakage Current</td><td>Initial specified value or less</td></tr> </table> After 2000 hours application of the rated voltage at 105 °C, they meet the characteristics listed below.	Capacitance Change	Within ±20% of initial value	Dissipation Factor	150% or less of initial specified value	ESR	150% or less of initial specified value	Leakage Current	Initial specified value or less		
	Capacitance Change	Within ±20% of initial value										
Dissipation Factor	150% or less of initial specified value											
ESR	150% or less of initial specified value											
Leakage Current	Initial specified value or less											
	MOISTURE RESISTANCE	After reflow soldering and restored at room temperature, they meet the characteristics listed below.										
定格リプル電流補正係数	RIPPLE CURRENT & FREQUENCY MULTIPLIERS	<table border="1"> <tr> <th>Frequency(Hz)</th> <th>120Hz ≤ f ≤ 1KHz</th> <th>1KHz ≤ f ≤ 10KHz</th> <th>10KHz ≤ f ≤ 100KHz</th> <th>100KHz ≤ f ≤ 300KHz</th> </tr> <tr> <td>Coefficient</td> <td>0.10</td> <td>0.40</td> <td>0.70</td> <td>1.00</td> </tr> </table>	Frequency(Hz)	120Hz ≤ f ≤ 1KHz	1KHz ≤ f ≤ 10KHz	10KHz ≤ f ≤ 100KHz	100KHz ≤ f ≤ 300KHz	Coefficient	0.10	0.40	0.70	1.00
Frequency(Hz)	120Hz ≤ f ≤ 1KHz	1KHz ≤ f ≤ 10KHz	10KHz ≤ f ≤ 100KHz	100KHz ≤ f ≤ 300KHz								
Coefficient	0.10	0.40	0.70	1.00								

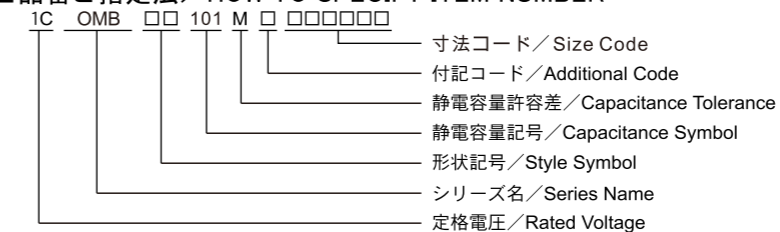
■定格リプル電流補正係数

リプル周波数が標準品一覧表の規定値と異なる場合には、下表の係数を乗じた値以下でご使用下さい。  
 When the ripple frequency differs from the spicification shown in the list of standard products, multiply the value with the coefficient shown below, and use the products under the obtained value.

周波数補正係数/FREQUENCY CORRECTION FACTOR

Cap.(μF)	Frequency (Hz)			
	120	1K	10K	100K
27~180	0.40	0.75	0.90	1.00
220~560	0.50	0.85	0.94	1.00
680~1800	0.60	0.87	0.95	1.00
2200~3900	0.75	0.90	0.95	1.00
4700~10000	0.85	0.95	0.98	1.00

■品番ご指定法/HOW TO SPECIFY ITEM NUMBER





■寸法表/CASE SIZE TABLE

■Impedance[Max.Value Ω] at 20°C 100kHz  
 ■Ripple Current [Max. value mA] at 105°C 100kHz

Cap. (μF)	Parameter	2.5 (0E)					4 (0G)				
		Case size ØD×L (mm)	Dissipation factor (tan δ)	Leakage current (μA)	ESR (mΩ) max. 20°C, 100KHz	Ripple current (mA rms) 105°C, 100KHz	Case size ØD×L (mm)	Dissipation factor (tan δ)	Leakage current (μA)	ESR (mΩ) max. 20°C, 100KHz	Ripple current (mA rms) 105°C, 100KHz
150	151										
220	221					5 × 5.8	0.12	120	12	3500	
270	271					5 × 5.8 (6.3 × 5.8)	(0.12)	176 (176)	12 (10)	3500 (3900)	
330	331	5 × 5.8	0.12	165	10	6.3 × 7.7 (6.3 × 7)	0.12 (0.12)	216 (264)	9 (10)	4200 (4500)	
390	391	5 × 5.8 (6.3 × 5.8)	0.12 (0.12)	195 (195)	10 (10)	6.3 × 7	0.12	312	10	4500	
470	471	6.3 × 7.7	0.12	332.5	9	8 × 7.7	0.12	376	9	4500	
560	561	6.3 × 7.7 (6.3 × 7) (6.3 × 5.8)	0.12 (0.12) (0.12)	280 (280) (280)	9 (10) (10)	8 × 7.7	0.12	448	9	4500	
680	681	6.3 × 7	0.12	340	10						
1000	102	8 × 7.7	0.12	500	9						

Cap. (μF)	Parameter	6.3 (0J)					10 (1A)				
		Case size ØD×L (mm)	Dissipation factor (tan δ)	Leakage current (μA)	ESR (mΩ) max. 20°C, 100KHz	Ripple current (mA rms) 105°C, 100KHz	Case size ØD×L (mm)	Dissipation factor (tan δ)	Leakage current (μA)	ESR (mΩ) max. 20°C, 100KHz	Ripple current (mA rms) 105°C, 100KHz
100	101	5 × 5.5	0.12	126	25	6.3 × 5.5	0.12	200	25	2600	
120	121					5 × 5.8	0.12	240	22	2600	
150	151					6.3 × 6.5	0.12	300	20	2800	
220	221	6.3 × 5 (6.3 × 6)	0.12 (0.12)	277 (277)	16 (16)	6.3 × 6.5	0.12	440	20	2900	
270	271	5 × 8 (5 × 9)	0.12 (0.12)	340 (340)	16 (16)	6.3 × 5.8	0.12	540	20	2800	
330	331	6.3 × 6.5	0.12	416	12						
470	471	6.3 × 7.7	0.12	592	12						
560	561	6.3 × 9	0.12	706	10						

Cap. (μF)	Parameter	16 (1C)				
		Case size ØD×L (mm)	Dissipation factor (tan δ)	Leakage current (μA)	ESR (mΩ) max. 20°C, 100KHz	Ripple current (mA rms) 105°C, 100KHz
100	101	6.3 × 6 (6.3 × 6.5)	0.12 (0.12)	320 (320)	24 (24)	2500 (2500)
180	181	6.3 × 5.8	0.12	576	22	3300
220	221	6.3 × 7.7 (6.3 × 9)	0.12 (0.12)	704 (704)	22 (20)	3300 (3300)
270	271	8 × 6.7	0.12	864	22	3300
330	331	8 × 7.7	0.12	1050	21	3400
470	471	10 × 12	0.12	1504	11	5200

●125°C高温, 高可靠品  
**OMRシリーズ**

JIS C 5101  
CE-32

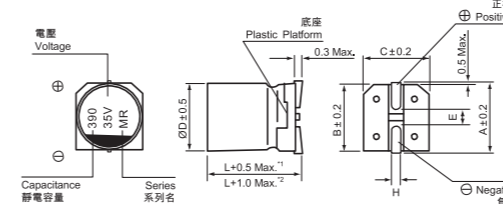
●125°C High Temperature, High Reliability  
**TYPE OMR**

JIS C 5101  
CE-32

■FEATURES

- Operating with wide temperature range -55~+125°C
- High reliability, low ESR, high ripple current
- Load life of 1500~3000 hours
- RoHS & REACH compliant, Halogen-free

■寸法図/DIAGRAM OF DIMENSIONS



\*1. Applicable to Ø5-Ø8 適用 Ø5-Ø8  
 \*2. Applicable to Ø10 and above 適用 Ø10 和 Ø10 以上

ØD × L	6.3×6/8	8×7/7.5	8×10/10.5	8×12	10×8	10×10/10.5	10×12.7
A	7.3	9.0	9.0	9.0	11.0	11.0	10.0
B	6.6	8.3	8.3	8.3	10.3	10.3	10.3
C	6.6	8.3	8.3	8.3	10.3	10.3	10.3
E	2.1	3.2	3.2	3.2	4.6	4.6	4.6
L	6.0/8.0	7.0/7.5	10.0/10.5	12	8.0	10.0/10.5	12.7
H	0.5~0.8	0.8~1.1	0.8~1.1	0.8~1.1	0.8~1.1	0.8~1.1	0.8~1.1

■性能/PERFORMANCE SPECIFICATIONS

カテゴリー温度範囲	CATEGORY TEMPERATURE RANGE	-55 ~ +125°C
標準静電容量許容差	STANDARD CAPACITANCE TOLERANCE	±20% at 120Hz, 20°C
漏れ電流 (最大値)	LEAKAGE CURRENT (MAX.VALUE)	≤Specified value (after 2 minutes application of rated voltage at 20°C)
損失角の正接 (最大値)	DISSIPATION FACTOR (MAX.VALUE)	≤Specified value at 120KHz, 20°C.
E.S.R.	E.S.R.	≤Specified value at 100KHz, 20°C.
低温特性	Stability at Low Temperature	Measurement frequency 測試頻率: 100KHz Impedance Ratio 阻抗比 $\frac{Z(+125^\circ\text{C})}{Z(20^\circ\text{C})} \leq 1.25$ $\frac{Z(-55^\circ\text{C})}{Z(20^\circ\text{C})} \leq 1.25$
耐久性	LOAD LIFE TEST	Capacitance Change: Within ±20% of initial value Dissipation Factor: 150% or less of initial specified value ESR: 150% or less of initial specified value Leakage Current: Initial specified value or less After 3000 hours (1500 hours for Ø6.3) application of the rated voltage at 125°C, they meet the characteristics listed below.
	MOISTURE RESISTANCE	After reflow soldering and restored at room temperature, they meet the characteristics listed below.
定格リップル電流補正係数	RIPPLE CURRENT & FREQUENCY MULTIPLIERS	Frequency(Hz) 120Hz ≤ f ≤ 1KHz, 1KHz ≤ f ≤ 10KHz, 10KHz ≤ f ≤ 100KHz, 100KHz ≤ f ≤ 300KHz Coefficient 0.10, 0.40, 0.70, 1.00

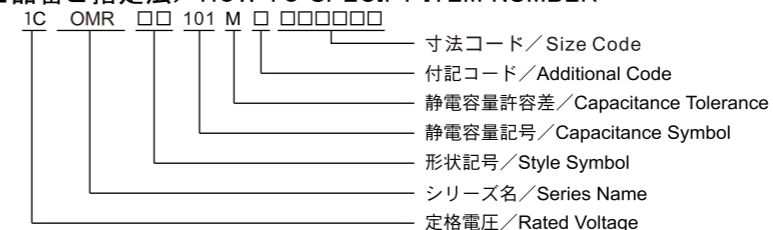
■定格リップル電流補正係数

リップル周波数が標準品一覧表の規定値と異なる場合には、下表の係数を乗じた値以下でご使用下さい。  
 When the ripple frequency differs from the spicification shown in the list of standard products, multiply the value with the coefficient shown below, and use the products under the obtained value.

周波数補正係数/FREQUENCY CORRECTION FACTOR

Cap.(μF)	Frequency (Hz)			
	120	1K	10K	100K
27~180	0.40	0.75	0.90	1.00
220~560	0.50	0.85	0.94	1.00
680~1800	0.60	0.87	0.95	1.00
2200~3900	0.75	0.90	0.95	1.00
4700~10000	0.85	0.95	0.98	1.00

■品番ご指定法/HOW TO SPECIFY ITEM NUMBER



■寸法表/CASE SIZE TABLE

■Impedance[Max.Value Ω] at 20°C 100kHz  
 ■Ripple Current [Max. value mA] at 105°C 100kHz

Cap. (μF)		WV (V)		16 (1C)					20 (1D)						
		Parameter		Case size ∅D×L(mm)	Dissipation factor (tan δ)	Leakage current (μA)	ESR (mΩ) max. 20°C, 100kHz	Ripple current (mA rms)		Case size ∅D×L(mm)	Dissipation factor (tan δ)	Leakage current (μA)	ESR (mΩ) max. 20°C, 100kHz	Ripple current (mA rms)	
								≤105°C(注)	105°C≤125°C(注)					≤105°C(注)	105°C≤125°C(注)
33	330								6.3 × 6	0.12	132	60	900	380	
47	470	6.3 × 6	0.12	150	55	1000	390								
56	560							8 × 7 (8 × 7.5)	0.12 (0.12)	224 (224)	50 (50)	1300 (1300)	500 (500)		
68	680							6.3 × 8	0.12	272	34	1450	470		
82	820	8 × 7 (8 × 7.5)	0.12 (0.12)	262 (262)	45 (45)	1300 (1300)	530 (530)								
100	101	6.3 × 8	0.12	320	33	1500	460								
120	121							8 × 10 (8 × 10.5) (10 × 8)	0.12 (0.12) (0.12)	480 (480) (480)	29 (29) (35)	1900 (1900) (1800)	770 (770) (810)		
150	151	8 × 10 (10 × 8)	0.12 (0.12)	480 (480)	28 (33)	2000 (1900)	780 (830)	8 × 12	0.12	600	28	2200	860		
180	181							10 × 10 (10 × 10.5)	0.12 (0.12)	720 (720)	28 (28)	2300 (2300)	800 (800)		
220	221	8 × 12	0.12	704	27	2300	870								
270	271	10 × 10 (10 × 10.5)	0.12 (0.12)	864 (864)	27 (27)	2300 (2300)	830 (830)	10 × 12.7	0.12	1080	27	2700	1020		
390	391	10 × 12.7	0.12	1248	26	2700	1040								

Cap. (μF)		WV (V)		25 (1E)					35 (1V)						
		Parameter		Case size ∅D×L(mm)	Dissipation factor (tan δ)	Leakage current (μA)	ESR (mΩ) max. 20°C, 100kHz	Ripple current (mA rms)		Case size ∅D×L(mm)	Dissipation factor (tan δ)	Leakage current (μA)	ESR (mΩ) max. 20°C, 100kHz	Ripple current (mA rms)	
								≤105°C(注)	105°C≤125°C(注)					≤105°C(注)	105°C≤125°C(注)
10	100							6.3 × 6	0.12	70	85	800	310		
18	180							8 × 7 (8 × 7.5)	0.12 (0.12)	126 (126)	60 (60)	1100 (1100)	450 (450)		
22	220	6.3 × 6	0.12	110	65	900	360								
27	270							6.3 × 8	0.12	189	45	1300	450		
39	390	8 × 7 (8 × 7.5)	0.12 (0.12)	195 (195)	55 (55)	1200 (1200)	480 (480)	8 × 10 (8 × 10.5) (10 × 8)	0.12 (0.12) (0.12)	273 (273) (273)	35 (35) (41)	1800 (1800) (1700)	700 (700) (750)		
56	560	6.3 × 8	0.12	280	35	1400	450	8 × 12	0.12	392	33	2000	780		
68	680							10 × 10 (10 × 10.5)	0.12 (0.12)	476 (476)	30 (30)	2200 (2200)	740 (740)		
82	820	8 × 10 (8 × 10.5) (10 × 8)	0.12 (0.12) (0.12)	410 (410) (410)	30 (30) (36)	1900 (1900) (1800)	760 (760) (800)								
100	101							10 × 10 (10 × 12.7)	0.12 (0.12)	700 (700)	25 (29)	2400 (2600)	800 (990)		
120	121	8 × 12 (10 × 10.5)	0.12 (0.12)	600 (600)	29 (29)	2200 (2200)	850 (850)								
180	181	10 × 12.7	0.12	900	28	2600	1010								

■寸法表/CASE SIZE TABLE

■Impedance[Max.Value Ω] at 20°C 100kHz  
 ■Ripple Current [Max. value mA] at 105°C 100kHz

Cap. (μF)		WV (V)		50 (1H)					
		Parameter		Case size ∅D×L(mm)	Dissipation factor (tan δ)	Leakage current (μA)	ESR (mΩ) max. 20°C, 100kHz	Ripple current (mA rms)	
								≤105°C(注)	105°C≤125°C(注)
5.6	5R6	6.3 × 6	0.12	56	105	700	280		
10	100	8 × 7 (8 × 7.5)	0.12 (0.12)	100 (100)	75 (75)	1000 (1000)	410 (410)		
12	120	6.3 × 8	0.12	120	65	1100	380		
22	220	8 × 10 (8 × 10.5) (10 × 8)	0.12 (0.12) (0.12)	220 (220) (220)	37 (37) (56)	1700 (1700) (1400)	680 (680) (730)		
27	270	8 × 12	0.12	270	35	2000	760		
33	330	10 × 10 (10 × 10.5)	0.12 (0.12)	330 (330)	31 (31)	2200 (2200)	630 (630)		
47	470	10 × 12.7	0.12	470	30	2500	970		

●長寿命品

OMSシリーズ

JIS C 5101  
CE-04

●Long Life Assurance

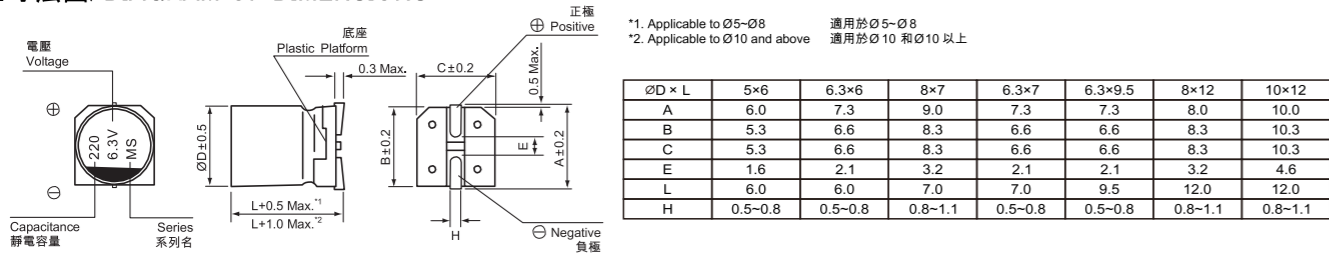
TYPE OMS

JIS C 5101  
CE-04

■FEATURES

- Operating with wide temperature range -55~+105°C
- Long life assurance
- Load life of 5000 hours
- RoHS & REACH compliant, Halogen-free

■寸法図/DIAGRAM OF DIMENSIONS



■性能/PERFORMANCE SPECIFICATIONS

カテゴリー温度範囲	CATEGORY TEMPERATURE RANGE	-55 ~ +105°C										
標準静電容量許容差	STANDARD CAPACITANCE TOLERANCE	±20% at 120Hz, 20°C										
漏れ電流 (最大値)	LEAKAGE CURRENT (MAX.VALUE)	≤Specified value (after 2 minutes application of rated voltage at 20°C)										
損失角の正接 (最大値)	DISSIPATION FACTOR (MAX.VALUE)	≤Specified value at 120KHz, 20°C.										
E.S.R	E.S.R.	≤Specified value at 100KHz, 20°C.										
低温特性	Stability at Low Temperature	Measurement frequency 測試頻率: 100KHz Impedance Ratio 阻抗比 $Z(+105°C)/Z(20°C) \leq 1.25$ $Z(-55°C)/Z(20°C) \leq 1.25$ ZT/Z20 (max)										
耐久性	LOAD LIFE TEST	<table border="1"> <tr> <td>Capacitance Change</td> <td>Within ±20% of initial value</td> </tr> <tr> <td>Dissipation Factor</td> <td>150% or less of initial specified value</td> </tr> <tr> <td>ESR</td> <td>150% or less of initial specified value</td> </tr> <tr> <td>Leakage Current</td> <td>Initial specified value or less</td> </tr> </table> <p>After 5000 hours application of the rated voltage at 105 °C, they meet the characteristics listed below.</p>	Capacitance Change	Within ±20% of initial value	Dissipation Factor	150% or less of initial specified value	ESR	150% or less of initial specified value	Leakage Current	Initial specified value or less		
Capacitance Change	Within ±20% of initial value											
Dissipation Factor	150% or less of initial specified value											
ESR	150% or less of initial specified value											
Leakage Current	Initial specified value or less											
	MOISTURE RESISTANCE	After reflow soldering and restored at room temperature, they meet the characteristics listed below.										
定格リプル電流補正係数	RIPPLE CURRENT & FREQUENCY MULTIPLIERS	<table border="1"> <tr> <th>Frequency(Hz)</th> <th>120Hz ≤ f ≤ 1KHz</th> <th>1KHz ≤ f ≤ 10KHz</th> <th>10KHz ≤ f ≤ 100KHz</th> <th>100KHz ≤ f ≤ 300KHz</th> </tr> <tr> <td>Coefficient</td> <td>0.10</td> <td>0.40</td> <td>0.70</td> <td>1.00</td> </tr> </table>	Frequency(Hz)	120Hz ≤ f ≤ 1KHz	1KHz ≤ f ≤ 10KHz	10KHz ≤ f ≤ 100KHz	100KHz ≤ f ≤ 300KHz	Coefficient	0.10	0.40	0.70	1.00
Frequency(Hz)	120Hz ≤ f ≤ 1KHz	1KHz ≤ f ≤ 10KHz	10KHz ≤ f ≤ 100KHz	100KHz ≤ f ≤ 300KHz								
Coefficient	0.10	0.40	0.70	1.00								

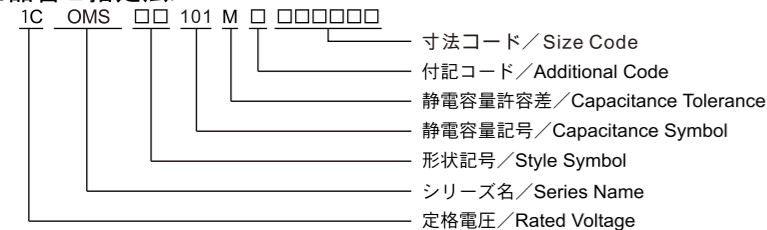
■定格リプル電流補正係数

リプル周波数が標準品一覧表の規定値と異なる場合には、下表の係数を乗じた値以下でご使用下さい。  
When the ripple frequency differs from the spicification shown in the list of standard products, multiply the value with the coefficient shown below, and use the products under the obtained value.

周波数補正係数/FREQUENCY CORRECTION FACTOR

Cap.(μF)	Frequency (Hz)			
	120	1K	10K	100K
27~180	0.40	0.75	0.90	1.00
220~560	0.50	0.85	0.94	1.00
680~1800	0.60	0.87	0.95	1.00
2200~3900	0.75	0.90	0.95	1.00
4700~10000	0.85	0.95	0.98	1.00

■品番ご指定法/HOW TO SPECIFY ITEM NUMBER



■寸法表/CASE SIZE TABLE

■Impedance[Max.Value Ω] at 20°C 100kHz  
■Ripple Current [Max. value mA] at 105°C 100kHz

Cap. (μF)	Parameter	4 (0G)					6.3 (0J)				
		Case size ∅D×L (mm)	Dissipation factor (tan δ)	Leakage current (μA)	ESR (mΩ) max. 20°C, 100KHz	Ripple current (mA rms) 105°C, 100KHz	Case size ∅D×L (mm)	Dissipation factor (tan δ)	Leakage current (μA)	ESR (mΩ) max. 20°C, 100KHz	Ripple current (mA rms) 105°C, 100KHz
47	470						5 × 6	0.12	59.22	35	1600
100	101						5 × 6 (6.3 × 6)	0.12 (0.12)	126 (126)	25 (22)	2400 (2800)
120	121						6.3 × 6	0.12	151	22	2800
150	151	5 × 6	0.12	120	25	2200					
220	221						6.3 × 6 (8 × 7)	0.12 (0.12)	277 (277)	20 (22)	2800 (3200)
330	331	6.3 × 6 (8 × 7)	0.12 (0.12)	264 (264)	20 (22)	2800 (3200)					
390	391						8 × 7	0.12	491	22	3200
470	471						6.3 × 9.5	0.12	592	18	3200
560	561	8 × 7	0.12	448	18	3600					

Cap. (μF)	Parameter	10 (1A)					16 (1C)				
		Case size ∅D×L (mm)	Dissipation factor (tan δ)	Leakage current (μA)	ESR (mΩ) max. 20°C, 100KHz	Ripple current (mA rms) 105°C, 100KHz	Case size ∅D×L (mm)	Dissipation factor (tan δ)	Leakage current (μA)	ESR (mΩ) max. 20°C, 100KHz	Ripple current (mA rms) 105°C, 100KHz
22	220						5 × 6	0.12	70.4	45	1100
33	330	5 × 6	0.12	66	40	1300					
39	390						5 × 6 (6.3 × 6)	0.12 (0.12)	125 (125)	35 (30)	2000 (2200)
56	560	6.3 × 6	0.12	112	27	2300					
68	680	5 × 6	0.12	136	30	2100	6.3 × 6	0.12	218	30	2200
82	820						8 × 7	0.12	262	28	2800
120	121	6.3 × 6	0.12	240	27	2300	8 × 7	0.12	384	28	2800
150	151	8 × 7	0.12	300	30	2600					
220	221	6.3 × 7	0.12	440	22	2800					
270	271	8 × 7	0.12	540	22	3200					

Cap. (μF)	Parameter	25 (1E)					35 (1V)				
		Case size ∅D×L (mm)	Dissipation factor (tan δ)	Leakage current (μA)	ESR (mΩ) max. 20°C, 100KHz	Ripple current (mA rms) 105°C, 100KHz	Case size ∅D×L (mm)	Dissipation factor (tan δ)	Leakage current (μA)	ESR (mΩ) max. 20°C, 100KHz	Ripple current (mA rms) 105°C, 100KHz
82	820						8 × 12	0.12	574	29	2200
100	101	6.3 × 9.5	0.12	500	32	2900					
150	151						10 × 12	0.12	1050	28	2600
180	181	8 × 12	0.12	900	16	4650					

Cap. (μF)	Parameter	50 (1H)				
		Case size ∅D×L (mm)	Dissipation factor (tan δ)	Leakage current (μA)	ESR (mΩ) max. 20°C, 100KHz	Ripple current (mA rms) 105°C, 100KHz
39	390	8 × 12	0.12	390	25	3800
68	680	10 × 12	0.12	680	20	4300



●超長寿命品

OMXシリーズ

JIS C 5101  
CE-32

●Ultra Long Life Assurance

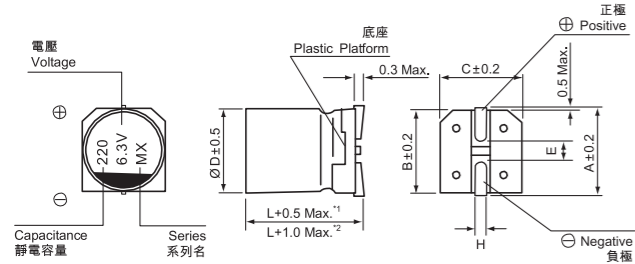
TYPE OMX

JIS C 5101  
CE-32

■FEATURES

- Operating with wide temperature range -55~+105°C
- Ultra-low ESR, High Ripple Current
- Load life of 20000 hours
- RoHS & REACH compliant, Halogen-free

■寸法図/DIAGRAM OF DIMENSIONS



\*1. Applicable to Ø5-Ø8 適用於 Ø5-Ø8  
\*2. Applicable to Ø10 and above 適用於 Ø10 和 Ø10 以上

ØD × L	5×6	6.3×6	8×7
A	6.0	7.3	9.0
B	5.3	6.6	8.3
C	5.3	6.6	8.3
E	1.6	2.1	3.2
L	6.0	6.0	7.0
H	0.5~0.8	0.5~0.8	0.8~1.1

■性能/PERFORMANCE SPECIFICATIONS

カテゴリー温度範囲	CATEGORY TEMPERATURE RANGE	-55 ~ +105°C
標準静電容量許容差	STANDARD CAPACITANCE TOLERANCE	±20% at 120Hz, 20°C
漏れ電流 (最大値)	LEAKAGE CURRENT (MAX.VALUE)	≤Specified value (after 2 minutes application of rated voltage at 20°C)
損失角の正接 (最大値)	DISSIPATION FACTOR (MAX.VALUE)	≤Specified value at 120KHz, 20°C.
E.S.R.	E.S.R.	≤Specified value at 100KHz, 20°C.
低温特性	Stability at Low Temperature	Measurement frequency 測試頻率: 100KHz Impedance Ratio 阻抗比 $\frac{Z(+105^\circ\text{C})/Z(20^\circ\text{C})}{Z(-55^\circ\text{C})/Z(20^\circ\text{C})} \leq 1.25$
耐久性	LOAD LIFE TEST	Capacitance Change: Within ±20% of initial value Dissipation Factor: 150% or less of initial specified value ESR: 150% or less of initial specified value Leakage Current: Initial specified value or less After 20000 hours application of the rated voltage at 105°C, they meet the characteristics listed below.
	MOISTURE RESISTANCE	After reflow soldering and restored at room temperature, they meet the characteristics listed below.
定格リプル電流補正係数	RIPPLE CURRENT & FREQUENCY MULTIPLIERS	Frequency(Hz) 120Hz ≤ f ≤ 1KHz, 1KHz ≤ f ≤ 10KHz, 10KHz ≤ f ≤ 100KHz, 100KHz ≤ f ≤ 300KHz Coefficient 0.10, 0.40, 0.70, 1.00

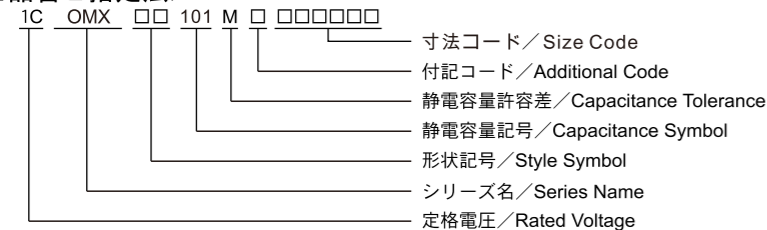
■定格リプル電流補正係数

リプル周波数が標準品一覧表の規定値と異なる場合には、下表の係数を乗じた値以下でご使用下さい。  
When the ripple frequency differs from the spicification shown in the list of standard products, multiply the value with the coefficient shown below, and use the products under the obtained value.

周波数補正係数/FREQUENCY CORRECTION FACTOR

Cap.(μF)	Frequency (Hz)			
	120	1K	10K	100K
27~180	0.40	0.75	0.90	1.00
220~560	0.50	0.85	0.94	1.00
680~1800	0.60	0.87	0.95	1.00
2200~3900	0.75	0.90	0.95	1.00
4700~10000	0.85	0.95	0.98	1.00

■品番ご指定法/HOW TO SPECIFY ITEM NUMBER



■寸法表/CASE SIZE TABLE

■Impedance[Max.Value Ω] at 20°C 100kHz  
■Ripple Current [Max. value mA] at 105°C 100kHz

Cap. (μF)	Parameter	4 (0G)					6.3 (0J)				
		Case size ØD×L (mm)	Dissipation factor (tan δ)	Leakage current (μA)	ESR (mΩ) max. 20°C, 100KHz	Ripple current (mA rms) 105°C, 100KHz	Case size ØD×L (mm)	Dissipation factor (tan δ)	Leakage current (μA)	ESR (mΩ) max. 20°C, 100KHz	Ripple current (mA rms) 105°C, 100KHz
47	470										
100	101					5 × 6	0.12	59.22	35	1600	
120	121					5 × 6 (6.3 × 6)	0.12 (0.12)	126 (126)	25 (22)	2400 (2800)	
150	151	5 × 6	0.12	120	25	2200	6.3 × 6	0.12	189	22	2800
220	221						6.3 × 6 (8 × 7)	0.12 (0.12)	277 (277)	20 (22)	2800 (3200)
330	331	6.3 × 6 (8 × 7)	0.12 (0.12)	264 (264)	20 (22)	2800 (3200)					
390	391						8 × 7	0.12	491	22	3200
560	561	8 × 7	0.12	448	18	3600					

Cap. (μF)	Parameter	10 (1A)					16 (1C)				
		Case size ØD×L (mm)	Dissipation factor (tan δ)	Leakage current (μA)	ESR (mΩ) max. 20°C, 100KHz	Ripple current (mA rms) 105°C, 100KHz	Case size ØD×L (mm)	Dissipation factor (tan δ)	Leakage current (μA)	ESR (mΩ) max. 20°C, 100KHz	Ripple current (mA rms) 105°C, 100KHz
22	220										
33	330	5 × 6	0.12	66	40	1300					
39	390						5 × 6 (6.3 × 6)	0.12 (0.12)	125 (125)	35 (30)	2000 (2200)
56	560	6.3 × 6	0.12	112	27	2300					
68	680	5 × 6	0.12	136	30	2100	6.3 × 6	0.12	218	30	2200
82	820						8 × 7	0.12	262	28	2800
120	121	6.3 × 6	0.12	240	27	2300	8 × 7	0.12	384	28	2800
150	151	8 × 7	0.12	300	30	2600					
270	271	8 × 7	0.12	540	22	3200					

●高圧長寿命品

OMVシリーズ

JIS C 5101  
CE-32

●High Voltage, Long Life Assurance

TYPE OMV

JIS C 5101  
CE-32

■FEATURES

- Operating with wide temperature range -55~+105°C
- High reliability, low ESR, high ripple current
- Load life of 3000 hours
- RoHS & REACH compliant, Halogen-free

■寸法図/DIAGRAM OF DIMENSIONS



■性能/PERFORMANCE SPECIFICATIONS

カテゴリー温度範囲	CATEGORY TEMPERATURE RANGE	-55 ~ +125°C										
標準静電容量許容差	STANDARD CAPACITANCE TOLERANCE	±20% at 120Hz, 20°C										
漏れ電流 (最大値)	LEAKAGE CURRENT (MAX.VALUE)	≤Specified value (after 2 minutes application of rated voltage at 20°C)										
損失角の正接 (最大値)	DISSIPATION FACTOR (MAX.VALUE)	≤Specified value at 120KHz, 20°C.										
E.S.R.	E.S.R.	≤Specified value at 100KHz, 20°C.										
低温特性	Stability at Low Temperature	Measurement frequency 測試頻率: 100KHz Impedance Ratio 阻抗比 $Z(+105°C)/Z(20°C) \leq 1.25$ $Z(-55°C)/Z(20°C) \leq 1.25$										
耐久性	LOAD LIFE TEST	<table border="1"> <tr> <td>Capacitance Change</td> <td>Within ±20% of initial value</td> </tr> <tr> <td>Dissipation Factor</td> <td>150% or less of initial specified value</td> </tr> <tr> <td>ESR</td> <td>150% or less of initial specified value</td> </tr> <tr> <td>Leakage Current</td> <td>Initial specified value or less</td> </tr> </table> <p>After 3000 hours application of the rated voltage at 105°C, they meet the characteristics listed below.</p>	Capacitance Change	Within ±20% of initial value	Dissipation Factor	150% or less of initial specified value	ESR	150% or less of initial specified value	Leakage Current	Initial specified value or less		
	Capacitance Change	Within ±20% of initial value										
Dissipation Factor	150% or less of initial specified value											
ESR	150% or less of initial specified value											
Leakage Current	Initial specified value or less											
MOISTURE RESISTANCE	After reflow soldering and restored at room temperature, they meet the characteristics listed below.											
定格リプル電流補正係数	RIPPLE CURRENT & FREQUENCY MULTIPLIERS	<table border="1"> <tr> <th>Frequency(Hz)</th> <th>120Hz ≤ f ≤ 1KHz</th> <th>1KHz ≤ f ≤ 10KHz</th> <th>10KHz ≤ f ≤ 100KHz</th> <th>100KHz ≤ f ≤ 300KHz</th> </tr> <tr> <td>Coefficient</td> <td>0.10</td> <td>0.40</td> <td>0.70</td> <td>1.00</td> </tr> </table>	Frequency(Hz)	120Hz ≤ f ≤ 1KHz	1KHz ≤ f ≤ 10KHz	10KHz ≤ f ≤ 100KHz	100KHz ≤ f ≤ 300KHz	Coefficient	0.10	0.40	0.70	1.00
Frequency(Hz)	120Hz ≤ f ≤ 1KHz	1KHz ≤ f ≤ 10KHz	10KHz ≤ f ≤ 100KHz	100KHz ≤ f ≤ 300KHz								
Coefficient	0.10	0.40	0.70	1.00								

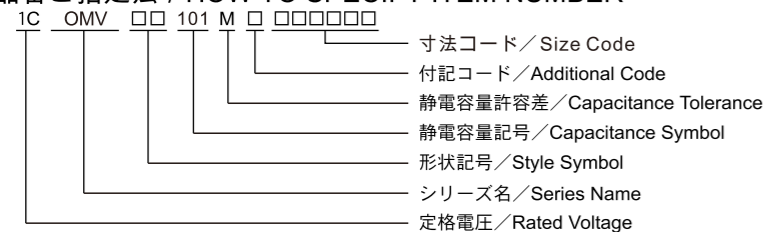
■定格リプル電流補正係数

リプル周波数が標準品一覧表の規定値と異なる場合には、下表の係数を乗じた値以下でご使用下さい。  
When the ripple frequency differs from the specification shown in the list of standard products, multiply the value with the coefficient shown below, and use the products under the obtained value.

周波数補正係数/FREQUENCY CORRECTION FACTOR

Cap.(μF)	Frequency (Hz)			
	120	1K	10K	100K
27 ~ 180	0.40	0.75	0.90	1.00
220 ~ 560	0.50	0.85	0.94	1.00
680 ~ 1800	0.60	0.87	0.95	1.00
2200 ~ 3900	0.75	0.90	0.95	1.00
4700 ~ 10000	0.85	0.95	0.98	1.00

■品番ご指定法 / HOW TO SPECIFY ITEM NUMBER



■寸法表/CASE SIZE TABLE

■Impedance [Max. Value Ω] at 20°C 100kHz  
■Ripple Current [Max. value mA] at 105°C 100kHz

Cap. (μF)	WV (V)	16 (1C)					20 (1D)				
		Case size ∅D×L (mm)	Dissipation factor (tan δ)	Leakage current (μA)	ESR (mΩ) max. 20°C, 100KHz	Ripple current (mA rms) 105°C, 100KHz	Case size ∅D×L (mm)	Dissipation factor (tan δ)	Leakage current (μA)	ESR (mΩ) max. 20°C, 100KHz	Ripple current (mA rms) 105°C, 100KHz
47	470						6.3 × 6	0.12	188	55	1000
56	560	6.3 × 6	0.12	179	50	1000	6.3 × 6	0.12	224	48	1300
68	680						8 × 7	0.12	272	45	1300
82	820	6.3 × 6	0.12	262	47	1300					
100	101	8 × 7	0.12	320	36	1500	8 × 7	0.12	400	42	1400
150	151	8 × 7	0.12	480	34	1700	8 × 10 (10 × 8)	0.12 (0.12)	600 (600)	28 (33)	2000 (1900)
180	181						10 × 8	0.12	720	25	3100
220	221	8 × 10 (10 × 8)	0.12 (0.12)	704 (704)	27 (31)	2000 (2000)	8 × 10 (8 × 12)	0.12 (0.12)	880 (880)	22 (27)	3700 (2300)
270	271	8 × 12 (10 × 8)	0.12 (0.12)	864 (864)	21 (26)	3800 (2300) (3200)	8 × 12 (10 × 10)	0.12 (0.12)	1080 (1080)	21 (27)	4000 (2300)
330	331	10 × 10	0.12	1056	26	2400	10 × 10 (10 × 12.7)	0.12 (0.12)	1320 (1320)	22 (26)	3800 (2700)
390	391	8 × 12	0.12	1248	20	4100					
470	471	10 × 10 (8 × 12)	0.12 (0.12)	1504 (1504)	21 (25)	3900 (2800)	10 × 12.7	0.12	1880	20	4300
680	681	10 × 12.7	0.12	2176	19	4400					

Cap. (μF)	WV (V)	25 (1E)					35 (1V)				
		Case size ∅D×L (mm)	Dissipation factor (tan δ)	Leakage current (μA)	ESR (mΩ) max. 20°C, 100KHz	Ripple current (mA rms) 105°C, 100KHz	Case size ∅D×L (mm) 尺寸	Dissipation factor (tan δ)	Leakage current (μA)	ESR (mΩ) max. 20°C, 100KHz	Ripple current (mA rms) 105°C, 100KHz
18	180						6.3 × 6	0.12	126	64	900
22	220						6.3 × 6	0.12	154	50	1300
27	270						8 × 7	0.12	189	55	1200
33	330	6.3 × 6	0.12	165	60	1000					
39	390						8 × 7	0.12	273	52	1400
47	470	6.3 × 6	0.12	235	49	1300					
56	560	8 × 7	0.12	280	50	1300	6.3 × 6.5 (8 × 10)	0.12 (0.12)	392 (392)	49 (31)	1600 (1900)
68	680						10 × 8	0.12	476	37	1800
82	820	8 × 7	0.12	410	47	1400	8 × 10 (8 × 12) (10 × 8)	0.12 (0.12) (0.12)	574 (574) (574)	24 (29) (27)	3600 (2200) (3000)
100	101	8 × 9	0.12	500	29	1900	6.3 × 8.7 (6.3 × 9)	0.12 (0.12)	700 (700)	35 (35)	1450 (1450)
120	121	8 × 9 (8 × 10)	0.12 (0.12)	600 (600)	29 (35)	1900 (1900)	8 × 12 (10 × 10)	0.12 (0.12)	840 (840)	23 (24)	3800 (3700)
150	151	8 × 10 (8 × 12) (10 × 8)	0.12 (0.12) (0.12)	750 (750) (750)	23 (28) (26)	3600 (2200) (3000)	8 × 9 (10 × 12.7)	0.12 (0.12)	1050 (1050)	23 (28)	2400 (2600)
180	181	10 × 10	0.12	900	28	2300	10 × 12.7	0.12	1260	22	4100
220	221	8 × 12	0.12	1100	22	3800					
270	271	10 × 10 (10 × 12.7)	0.12 (0.12)	1350 (1350)	23 (27)	3700 (2700)					
390	391	10 × 12.7	0.12	1950	21	4200					
470	471	10 × 13	0.12	2350	9	6100					

●標準低抵抗品

OPAシリーズ

JIS C 5101  
CE-04

●Standard, Low ESR

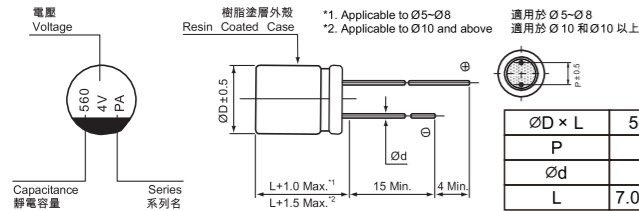
TYPE OPA

JIS C 5101  
CE-04

■FEATURES

- Operating with wide temperature range -55~+105°C
- Low ESR, high ripple current
- Load life of 2000 hours
- RoHS & REACH compliant, Halogen-free

■寸法図/DIAGRAM OF DIMENSIONS



寸法	5×7/9/11	6.3×6/7	6.3×8/9	6.3×10.5/11/12	8×7/8/9	8×11/12	10×8/10/13
∅D × L	5×7/9/11	6.3×6/7	6.3×8/9	6.3×10.5/11/12	8×7/8/9	8×11/12	10×8/10/13
P	2.0	2.5	2.5	2.5	3.5	3.5	5.0
∅d	0.5	0.6	0.6	0.6	0.6	0.6	0.6
L	7.0/9.0/11.0	6.0/7.0	8.0/9.0	10.5/11.0/12.0	7.0/8.0/9.0	11.0/12.0	8.0/10.0/13.0

■性能/PERFORMANCE SPECIFICATIONS

カテゴリー温度範囲	CATEGORY TEMPERATURE RANGE	-55 ~ +105°C
標準静電容量許容差	STANDARD CAPACITANCE TOLERANCE	±20% at 120Hz, 20°C
漏れ電流 (最大値)	LEAKAGE CURRENT (MAX.VALUE)	≤Specified value (after 2 minutes application of rated voltage at 20°C)
損失角の正接 (最大値)	DISSIPATION FACTOR (MAX.VALUE)	≤Specified value at 120KHz, 20°C.
E.S.R.	E.S.R.	≤Specified value at 100KHz, 20°C.
低温特性	Stability at Low Temperature	Measurement frequency 測試頻率: 100KHz Impedance Ratio 阻抗比 $Z(+105°C)/Z(20°C) \leq 1.25$ $Z(-55°C)/Z(20°C) \leq 1.25$
耐久性	LOAD LIFE TEST	Capacitance Change: Within ±20% of initial value Dissipation Factor: 150% or less of initial specified value ESR: 150% or less of initial specified value Leakage Current: Initial specified value or less After 2000 hours application of the rated voltage at 105°C, they meet the characteristics listed below.
	MOISTURE RESISTANCE	After reflow soldering and restored at room temperature, they meet the characteristics listed below.
定格リプル電流補正係数	RIPPLE CURRENT & FREQUENCY MULTIPLIERS	Frequency(Hz)   120Hz ≤ f ≤ 1KHz   1KHz ≤ f ≤ 10KHz   10KHz ≤ f ≤ 100KHz   100KHz ≤ f ≤ 300KHz Coefficient   0.10   0.40   0.70   1.00

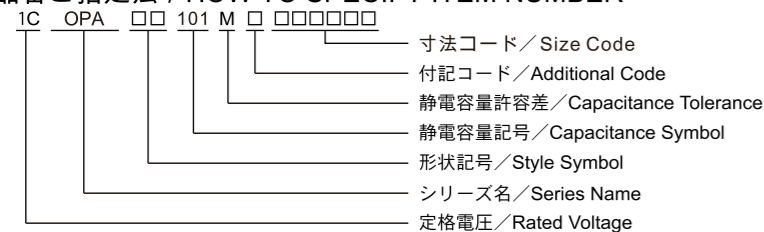
■定格リプル電流補正係数

リプル周波数が標準品一覧表の規定値と異なる場合には、下表の係数を乗じた値以下でご利用下さい。  
When the ripple frequency differs from the specification shown in the list of standard products, multiply the value with the coefficient shown below, and use the products under the obtained value.

周波数補正係数/FREQUENCY CORRECTION FACTOR

Cap.(μF)	Frequency (Hz)			
	120	1K	10K	100K
27 ~ 180	0.40	0.75	0.90	1.00
220 ~ 560	0.50	0.85	0.94	1.00
680 ~ 1800	0.60	0.87	0.95	1.00
2200 ~ 3900	0.75	0.90	0.95	1.00
4700 ~ 10000	0.85	0.95	0.98	1.00

■品番ご指定法 / HOW TO SPECIFY ITEM NUMBER



■寸法表/CASE SIZE TABLE

■Impedance [Max. Value Ω] at 20°C 100kHz  
■Ripple Current [Max. value mA] at 105°C 100kHz

Cap. (μF)	Parameter	2.5 (0E)					4 (0G)				
		Case size ∅D×L (mm)	Dissipation factor (tan δ)	Leakage current (μA)	ESR (mΩ) max. 20°C, 100KHz	Ripple current (mA rms) 105°C, 100KHz	Case size ∅D×L (mm)	Dissipation factor (tan δ)	Leakage current (μA)	ESR (mΩ) max. 20°C, 100KHz	Ripple current (mA rms) 105°C, 100KHz
270	271						6.3 × 9 (6.3 × 10.5)	0.08 (0.08)	216 (216)	7 (20)	5600 (3200)
330	331	6.3 × 9	0.08	165	7	5600					
390	391	6.3 × 10.5	0.08	195	20	3200	6.3 × 10.5	0.08	312	24	3300
560	561	6.3 × 9	0.08	280	7	5600	8 × 9 (8 × 12)	0.08 (0.08)	448 (448)	7 (7)	5200 (5500)
680	681	8 × 9	0.08	340	7	4800	8 × 12	0.08	544	6	6200
820	821	6.3 × 9	0.08	410	7	5600	10 × 13	0.08	656	6	6500
1000	102	10 × 13	0.08	500	6	6500	10 × 13	0.08	800	6	6640
1200	122	10 × 13	0.08	600	8	5300	10 × 13	0.08	960	8	5600
1500	152	8 × 12	0.08	750	7	6100					

Cap. (μF)	Parameter	6.3 (0J)					10 (1A)				
		Case size ∅D×L (mm)	Dissipation factor (tan δ)	Leakage current (μA)	ESR (mΩ) max. 20°C, 100KHz	Ripple current (mA rms) 105°C, 100KHz	Case size ∅D×L (mm)	Dissipation factor (tan δ)	Leakage current (μA)	ESR (mΩ) max. 20°C, 100KHz	Ripple current (mA rms) 105°C, 100KHz
47	470						6.3 × 10.5	0.08	94	25	2900
68	680						6.3 × 10.5	0.08	136	25	2900
100	101						6.3 × 8 (6.3 × 10.5)	0.08 (0.08)	200 (200)	25 (25)	2900 (2900)
150	151						6.3 × 10.5	0.08	300	25	2900
220	221	5 × 7 (6.3 × 10.5)	0.08 (0.08)	277 (277)	20 (20)	3000 (3200)	6.3 × 7	0.08	440	12	3150
270	271						8 × 12	0.08	540	8	4900
330	331	6.3 × 10.5	0.08	416	24	3300					
470	471	8 × 9 (8 × 12)	0.08 (0.08)	592 (592)	7 (7)	5200 (5500)	5 × 11 (8 × 8) (10 × 13)	0.08 (0.08) (0.08)	940 (940) (940)	16 (12) (7)	3000 (5300) (5700)
560	561						10 × 13	0.08	1120	7	5900
680	681	10 × 13	0.08	857	6	6300	10 × 13	0.08	1360	7	6100

Cap. (μF)	Parameter	16 (1C)					20 (1D)				
		Case size ∅D×L (mm)	Dissipation factor (tan δ)	Leakage current (μA)	ESR (mΩ) max. 20°C, 100KHz	Ripple current (mA rms) 105°C, 100KHz	Case size ∅D×L (mm)	Dissipation factor (tan δ)	Leakage current (μA)	ESR (mΩ) max. 20°C, 100KHz	Ripple current (mA rms) 105°C, 100KHz
22	220						6.3 × 6	0.12	88	50	1700
39	390						8 × 7	0.12	156	45	2000
47	470						8 × 7	0.12	188	45	2000
56	560						10 × 8	0.12	224	40	2400
68	680						10 × 8	0.12	272	40	2600
82	820						10 × 8	0.12	328	40	2600
100	101	5 × 8 (6.3 × 7) (6.3 × 10.5)	0.08 (0.08) (0.08)	320 (320) (320)	25 (25) (24)	2350 (2600) (2900)	8 × 12	0.12	400	22	3320
120	121						10 × 10	0.12	480	35	2800
150	151						10 × 13	0.12	600	20	4320
180	181	5 × 9 (8 × 8) (8 × 12)	0.08 (0.08) (0.08)	576 (576) (576)	12 (10) (9)	2750 (4200) (5000)					
220	221	6.3 × 8 (6.3 × 12)	0.08 (0.08)	704 (704)	12 (12)	3800 (4400)					
270	271	8 × 8 (8 × 12)	0.08 (0.08)	864 (864)	10 (9)	4600 (5100)					
330	331	10 × 13	0.08	1056	9	6100					
470	471	10 × 13	0.08	1504	9	6100					



■寸法表/CASE SIZE TABLE

- Impedance [Max. Value Ω] at 20°C 100kHz
- Ripple Current [Max. value mA] at 105°C 100kHz

Cap. (μF)	Parameter	Case size ∅D×L (mm)	25 (1E)			
			Dissipation factor (tan δ)	Leakage current (μA)	ESR (mΩ) max. 20°C, 100KHz	Ripple current (mA rms) 105°C, 100KHz
6.8	6R8	6.3 × 6	0.12	34	80	1200
10	100	6.3 × 6	0.12	50	65	1500
22	220	8 × 7	0.12	110	60	1500
33	330	8 × 7	0.12	165	50	1800
47	470	6.3 × 7 (10 × 13)	0.12 (0.12)	235 (235)	49 (30)	1300 (3000)
56	560	10 × 13	0.12	280	28	3800
100	101	5 × 11	0.12	500	30	2500
		(6.3 × 8) (6.3 × 11)	(0.12) (0.12)	(500) (500)	(30) (30)	(2500) (3000)
220	221	6.3 × 12 (8 × 11)	0.12 (0.12)	1100 (1100)	20 (18)	4000 (4300)

●大容量, 極低抵抗品  
**OPBシリーズ**

JIS C 5101  
CE-04

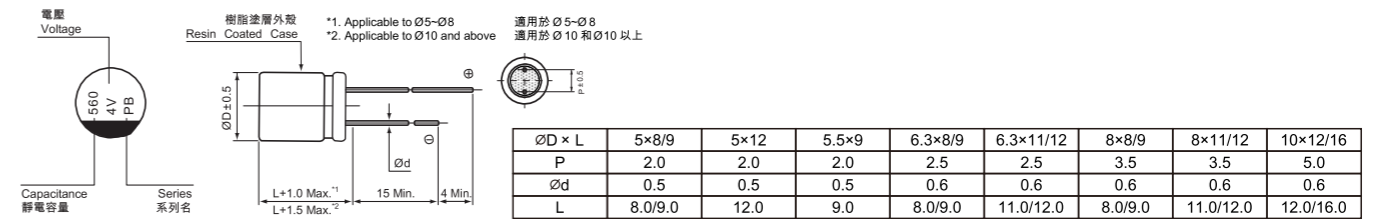
●High Capacitance, Ultra-low ESR  
TYPE **OPB**

JIS C 5101  
CE-04

■FEATURES

- Operating with wide temperature range -55~+105°C
- Higher capacitance, ultra-low ESR, high ripple current
- Load life of 2000 hours
- RoHS & REACH compliant, Halogen-free

■寸法図/DIAGRAM OF DIMENSIONS



■性能/PERFORMANCE SPECIFICATIONS

カテゴリー温度範囲	CATEGORY TEMPERATURE RANGE	-55 ~ +105°C
標準静電容量許容差	STANDARD CAPACITANCE TOLERANCE	±20% at 120Hz, 20°C
漏れ電流 (最大値)	LEAKAGE CURRENT (MAX.VALUE)	≤Specified value (after 2 minutes application of rated voltage at 20°C)
損失角の正接 (最大値)	DISSIPATION FACTOR (MAX.VALUE)	≤Specified value at 120KHz, 20°C.
E.S.R	E.S.R.	≤Specified value at 100KHz, 20°C.
低温特性	Stability at Low Temperature	Measurement frequency 測試頻率: 100KHz Impedance Ratio 阻抗比 $Z(+105°C)/Z(20°C) \leq 1.25$ $Z(-55°C)/Z(20°C) \leq 1.25$
耐久性	LOAD LIFE TEST	Capacitance Change: Within ±20% of initial value Dissipation Factor: 150% or less of initial specified value ESR: 150% or less of initial specified value Leakage Current: Initial specified value or less After 2000 hours application of the rated voltage at 105°C, they meet the characteristics listed below.
	MOISTURE RESISTANCE	After reflow soldering and restored at room temperature, they meet the characteristics listed below.
定格リプル電流補正係数	RIPPLE CURRENT & FREQUENCY MULTIPLIERS	Frequency(Hz)   120Hz ≤ f ≤ 1KHz   1KHz ≤ f ≤ 10KHz   10KHz ≤ f ≤ 100KHz   100KHz ≤ f ≤ 300KHz Coefficient   0.10   0.40   0.70   1.00

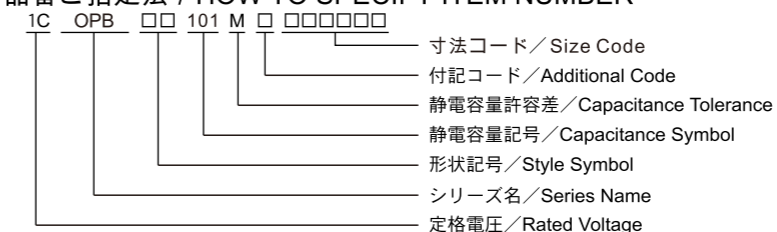
■定格リプル電流補正係数

リップル周波数が標準品一覧表の規定値と異なる場合には、下表の係数を乗じた値以下でご使用下さい。  
When the ripple frequency differs from the spification shown in the list of standard products, multiply the value with the coefficient shown below, and use the products under the obtained value.

周波数補正係数/FREQUENCY CORRECTION FACTOR

Cap.(μF)	Frequency (Hz)			
	120	1K	10K	100K
27 ~ 180	0.40	0.75	0.90	1.00
220 ~ 560	0.50	0.85	0.94	1.00
680 ~ 1800	0.60	0.87	0.95	1.00
2200 ~ 3900	0.75	0.90	0.95	1.00
4700 ~ 10000	0.85	0.95	0.98	1.00

■品番ご指定法 / HOW TO SPECIFY ITEM NUMBER



■寸法表/CASE SIZE TABLE

■Impedance[Max.Value Ω] at 20°C 100kHz  
 ■Ripple Current [Max. value mA] at 105°C 100kHz

WV (V)		2.5 (0E)					4 (0G)				
Cap. (μF)	Parameter	Case size ∅D×L (mm)	Dissipation factor (tan δ)	Leakage current (μA)	ESR (mΩ) max. 20°C, 100KHz	Ripple current (mA rms) 105°C, 100KHz	Case size ∅D×L (mm)	Dissipation factor (tan δ)	Leakage current (μA)	ESR (mΩ) max. 20°C, 100KHz	Ripple current (mA rms) 105°C, 100KHz
560	561	6.3 × 8	0.08	280	7	5900	6.3 × 8	0.08	448	9	5900
680	681						6.3 × 8	0.08	544	9	5900
820	821	6.3 × 8 (8 × 8)	0.08 (0.08)	410 (410)	7 (7)	5900 (5900)	6.3 × 11	0.08	656	7	6150
1000	102	6.3 × 8	0.08	500	7	5900					
1200	122						6.3 × 11	0.08	960	7	6150
1500	152	8 × 8	0.08	750	7	6100					

WV (V)		6.3 (0J)					10 (1A)				
Cap. (μF)	Parameter	Case size ∅D×L (mm)	Dissipation factor (tan δ)	Leakage current (μA)	ESR (mΩ) max. 20°C, 100KHz	Ripple current (mA rms) 105°C, 100KHz	Case size ∅D×L (mm)	Dissipation factor (tan δ)	Leakage current (μA)	ESR (mΩ) max. 20°C, 100KHz	Ripple current (mA rms) 105°C, 100KHz
270	271	5 × 8	0.08	340	10	3200	6.3 × 8	0.08	540	10	4100
330	331	5 × 8 (6.3 × 5) (6.3 × 6) (6.3 × 8)	0.08 (0.08) (0.08) (0.08)	415 (415) (415) (415)	10 (9) (9) (9)	3200 (4800) (4800) (5000)	6.3 × 8 (8 × 8)	0.08 (0.08)	660 (660)	12 (12)	4500 (4620)
390	391	6.3 × 8 (8 × 8)	0.08 (0.08)	491 (491)	12 (12)	3100 (3300)					
470	471	5 × 9 (6.3 × 8)	0.08 (0.08)	592 (592)	12 (9)	3600 (5900)	6.3 × 8 (8 × 8)	0.08 (0.08)	940 (940)	9 (10)	5400 (5600)
560	561	6.3 × 8 (8 × 8)	0.08 (0.08)	705 (705)	9 (8)	5900 (5900)	8 × 8	0.08	1120	9	5600
680	681	5 × 12 (6.3 × 8)	0.08 (0.08)	857 (857)	15 (9)	5500 (5900)	6 × 12 (8 × 8) (8 × 11)	0.08 (0.08) (0.08)	1360 (1360) (1360)	13 (9) (9)	3650 (5600) (6100)
820	821	6.3 × 9 (6.3 × 11) (8 × 8) (8 × 11)	0.08 (0.08) (0.08) (0.08)	1033 (1033) (1033) (1033)	9 (7) (9) (9)	5900 (6150) (5900) (6150)	8 × 11	0.08	1640	9	6100
1000	102	6 × 11 (8 × 8) (8 × 11)	0.08 (0.08) (0.08)	1260 (1260) (1260)	12 (10) (9)	6150 (6000) (6150)	8 × 11	0.08	2000	9	6200
1200	122	6.3 × 12 (8 × 12)	0.08 (0.08)	1512 (1512)	9 (9)	6100 (6150)					
1500	152	8 × 12 (10 × 12)	0.08 (0.08)	1890 (1890)	9 (9)	6150 (6200)	8 × 12 (10 × 12)	0.08 (0.08)	3000 (3000)	10 (9)	5700 (6100)
2200	222	10 × 12	0.08	2772	9	6200	10 × 12	0.08	4400	9	6500

WV (V)		7.5 (0T)					12 (1R)				
Cap. (μF)	Parameter	Case size ∅D×L (mm)	Dissipation factor (tan δ)	Leakage current (μA)	ESR (mΩ) max. 20°C, 100KHz	Ripple current (mA rms) 105°C, 100KHz	Case size ∅D×L (mm)	Dissipation factor (tan δ)	Leakage current (μA)	ESR (mΩ) max. 20°C, 100KHz	Ripple current (mA rms) 105°C, 100KHz
330	331						5 × 9 (5.5 × 9) (6.3 × 8)	0.08 (0.08) (0.08)	792 (792) (792)	14 (14) (12)	3800 (3800) (2690)
500	501	5 × 9 (6.3 × 9)	0.08 (0.08)	750 (750)	11 (9)	3800 (5900)					
560	561	5 × 9 (6.3 × 9)	0.08 (0.08)	840 (840)	11 (9)	4000 (5900)					
680	681	6.3 × 9	0.08	1020	9	5900					
820	821	6.3 × 9	0.08	1230	9	5900					

■寸法表/CASE SIZE TABLE

■Impedance[Max.Value Ω] at 20°C 100kHz  
 ■Ripple Current [Max. value mA] at 105°C 100kHz

WV (V)		16 (1C)				
Cap. (μF)	Parameter	Case size ∅D×L (mm)	Dissipation factor (tan δ)	Leakage current (μA)	ESR (mΩ) max. 20°C, 100KHz	Ripple current (mA rms) 105°C, 100KHz
100	101	6.3 × 7	0.08	320	16	3250
270	271	6 × 8 (8 × 8) (8 × 11)	0.08 (0.08) (0.08)	864 (864) (864)	10 (10) (10)	4100 (5000) (5000)
330	331	6.3 × 9 (6.3 × 11) (8 × 8) (8 × 11) (10 × 12)	0.08 (0.08) (0.08) (0.08) (0.08)	1056 (1056) (1056) (1056) (1056)	12 (12) (10) (9)	4500 (4300) (5000) (6100)
390	391	8 × 8	0.08	1248	10	5000
470	471	6.3 × 11 (6.3 × 12) (8 × 8) (8 × 11) (10 × 12)	0.08 (0.08) (0.08) (0.08) (0.08)	1504 (1504) (1504) (1504) (1504)	12 (10) (13) (10) (9)	4100 (5200) (5000) (5400) (5800)
560	561	8 × 9 (8 × 11)	0.08 (0.08)	1792 (1792)	12 (10)	5200 (5400)
680	681	8 × 11	0.08	2176	10	5400
820	821	8 × 12 (10 × 12)	0.08 (0.08)	2624 (2624)	10 (10)	5700 (5800)
1000	102	8 × 12 (10 × 12)	0.08 (0.08)	3200 (3200)	10 (9)	6000 (6500)
1200	122	10 × 12	0.08	3840	9	6500
1500	152	10 × 12 (10 × 16)	0.08 (0.08)	4800 (4800)	9 (9)	6500 (6500)

●125°C高温, 高可靠品  
**OPRシリーズ**

JIS C 5101  
CE-04

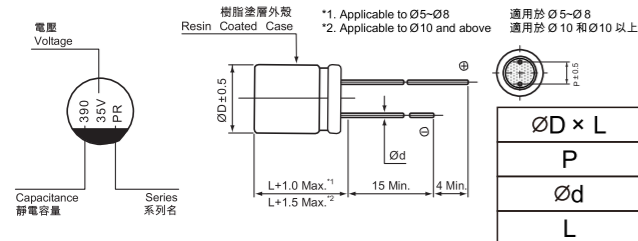
●125°C High Temperature, High Reliability  
TYPE **OPR**

JIS C 5101  
CE-04

■FEATURES

- Operating with wide temperature range -55~+125°C
- High reliability, low ESR, high ripple current
- Load life of 3000 hours
- RoHS & REACH compliant, Halogen-free

■寸法図/DIAGRAM OF DIMENSIONS



ØD × L	5×8	8×8	8×9	8×12	10×13
P	2.0	3.5	3.5	3.5	5.0
Ød	0.5	0.6	0.6	0.6	0.6
L	8.0	9.0	9.0	12.0	13.0

■性能/PERFORMANCE SPECIFICATIONS

カテゴリー温度範囲	CATEGORY TEMPERATURE RANGE	-55 ~ +125°C										
標準静電容量許容差	STANDARD CAPACITANCE TOLERANCE	±20% at 120Hz, 20°C										
漏れ電流 (最大値)	LEAKAGE CURRENT (MAX.VALUE)	≤Specified value (after 2 minutes application of rated voltage at 20°C)										
損失角の正接 (最大値)	DISSIPATION FACTOR (MAX.VALUE)	≤Specified value at 120KHz, 20°C.										
E.S.R.	E.S.R.	≤Specified value at 100KHz, 20°C.										
低温特性	Stability at Low Temperature	Measurement frequency 測試頻率: 100KHz Impedance Ratio 阻抗比 $Z(+125°C)/Z(20°C) \leq 1.25$ $Z(-55°C)/Z(20°C) \leq 1.25$										
耐久性	LOAD LIFE TEST	<table border="1"> <tr><td>Capacitance Change</td><td>Within ±20% of initial value</td></tr> <tr><td>Dissipation Factor</td><td>150% or less of initial specified value</td></tr> <tr><td>ESR</td><td>150% or less of initial specified value</td></tr> <tr><td>Leakage Current</td><td>Initial specified value or less</td></tr> </table> <p>After 3000 hours application of the rated voltage at 125°C, they meet the characteristics listed below.</p>	Capacitance Change	Within ±20% of initial value	Dissipation Factor	150% or less of initial specified value	ESR	150% or less of initial specified value	Leakage Current	Initial specified value or less		
Capacitance Change	Within ±20% of initial value											
Dissipation Factor	150% or less of initial specified value											
ESR	150% or less of initial specified value											
Leakage Current	Initial specified value or less											
	MOISTURE RESISTANCE	After reflow soldering and restored at room temperature, they meet the characteristics listed below.										
定格リプル電流補正係数	RIPPLE CURRENT & FREQUENCY MULTIPLIERS	<table border="1"> <tr> <th>Frequency(Hz)</th> <th>120Hz ≤ f ≤ 1KHz</th> <th>1KHz ≤ f ≤ 10KHz</th> <th>10KHz ≤ f ≤ 100KHz</th> <th>100KHz ≤ f ≤ 300KHz</th> </tr> <tr> <td>Coefficient</td> <td>0.10</td> <td>0.40</td> <td>0.70</td> <td>1.00</td> </tr> </table>	Frequency(Hz)	120Hz ≤ f ≤ 1KHz	1KHz ≤ f ≤ 10KHz	10KHz ≤ f ≤ 100KHz	100KHz ≤ f ≤ 300KHz	Coefficient	0.10	0.40	0.70	1.00
Frequency(Hz)	120Hz ≤ f ≤ 1KHz	1KHz ≤ f ≤ 10KHz	10KHz ≤ f ≤ 100KHz	100KHz ≤ f ≤ 300KHz								
Coefficient	0.10	0.40	0.70	1.00								

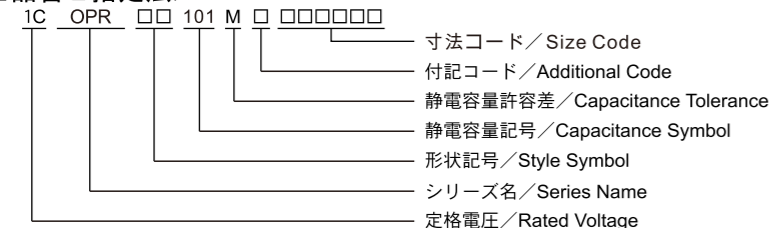
■定格リプル電流補正係数

リプル周波数が標準品一覧表の規定値と異なる場合には、下表の係数を乗じた値以下でご使用下さい。  
When the ripple frequency differs from the spicification shown in the list of standard products, multiply the value with the coefficient shown below, and use the products under the obtained value.

周波数補正係数/FREQUENCY CORRECTION FACTOR

Cap.(µF)	Frequency (Hz)			
	120	1K	10K	100K
27~180	0.40	0.75	0.90	1.00
220~560	0.50	0.85	0.94	1.00
680~1800	0.60	0.87	0.95	1.00
2200~3900	0.75	0.90	0.95	1.00
4700~10000	0.85	0.95	0.98	1.00

■品番ご指定法/HOW TO SPECIFY ITEM NUMBER



■寸法表/CASE SIZE TABLE

■Impedance [Max.Value Ω] at 20°C 100kHz  
■Ripple Current [Max. value mA] at 105°C 100kHz

Cap. (µF)	Parameter	6.3 (0J)						16 (1C)					
		Case size ØD×L (mm)	Dissipation factor (tan δ)	Leakage current (µA)	ESR (mΩ) max. 20°C, 100KHz	Ripple current (mA rms)		Case size ØD×L (mm)	Dissipation factor (tan δ)	Leakage current (µA)	ESR (mΩ) max. 20°C, 100KHz	Ripple current (mA rms)	
						≤105°C (3)	105°C≤125°C (3)					≤105°C (3)	105°C≤125°C (3)
100	101	5 × 8	0.12	126	18	1900	730	5 × 8	0.12	320	13	2000	770
150	151							8 × 9	0.12	480	26	2100	810
220	221							8 × 12	0.12	704	25	2400	930
330	331	5 × 8	0.12	415	14	2300	880	8 × 8	0.12	1056	13	4700	1570
390	391							10 × 13	0.12	1248	23	2900	1130
1000	102							10 × 13	0.12	3200	12	4500	1730

Cap. (µF)	Parameter	20 (1D)						25 (1E)					
		Case size ØD×L (mm)	Dissipation factor (tan δ)	Leakage current (µA)	ESR (mΩ) max. 20°C, 100KHz	Ripple current (mA rms)		Case size ØD×L (mm)	Dissipation factor (tan δ)	Leakage current (µA)	ESR (mΩ) max. 20°C, 100KHz	Ripple current (mA rms)	
						≤105°C (3)	105°C≤125°C (3)					≤105°C (3)	105°C≤125°C (3)
82	820							8 × 9	0.12	410	28	2000	780
120	121	8 × 9	0.12	480	27	2000	800	8 × 12	0.12	600	27	2300	890
150	151	8 × 12	0.12	600	26	2300	910						
180	181							10 × 13	0.12	900	25	2800	1080
270	271	10 × 13	0.12	1080	24	2800	1110						

Cap. (µF)	Parameter	35 (1V)						50 (1H)					
		Case size ØD×L (mm)	Dissipation factor (tan δ)	Leakage current (µA)	ESR (mΩ) max. 20°C, 100KHz	Ripple current (mA rms)		Case size ØD×L (mm)	Dissipation factor (tan δ)	Leakage current (µA)	ESR (mΩ) max. 20°C, 100KHz	Ripple current (mA rms)	
						≤105°C (3)	105°C≤125°C (3)					≤105°C (3)	105°C≤125°C (3)
22	220							8 × 9	0.12	220	35	1800	700
27	270							8 × 12	0.12	270	33	2000	810
39	390	8 × 9	0.12	273	33	1800	720						
47	470							10 × 13	0.12	470	29	2600	1020
56	560	8 × 12	0.12	392	31	2100	830						
100	101	10 × 13	0.12	700	28	2700	1040						



●長寿命品

OPSシリーズ

JIS C 5101  
CE-04

●Long Life Assurance

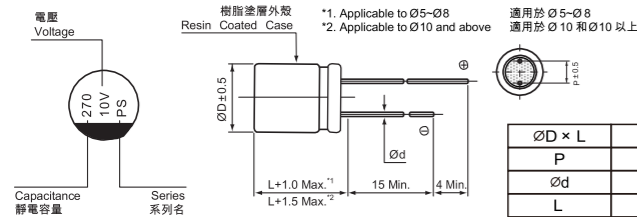
TYPE OPS

JIS C 5101  
CE-04

■FEATURES

- Operating with wide temperature range -55~+105°C
- Long life assurance
- Load life of 5000 hours
- RoHS & REACH compliant, Halogen-free

■寸法図/DIAGRAM OF DIMENSIONS



■性能/PERFORMANCE SPECIFICATIONS

カテゴリー温度範囲	CATEGORY TEMPERATURE RANGE	-55 ~ +105°C										
標準静電容量許容差	STANDARD CAPACITANCE TOLERANCE	±20% at 120Hz, 20°C										
漏れ電流 (最大値)	LEAKAGE CURRENT (MAX.VALUE)	≤Specified value (after 2 minutes application of rated voltage at 20°C)										
損失角の正接 (最大値)	DISSIPATION FACTOR (MAX.VALUE)	≤Specified value at 120KHz, 20°C.										
E.S.R	E.S.R.	≤Specified value at 100KHz, 20°C.										
低温特性	Stability at Low Temperature	Measurement frequency 測試頻率: 100KHz Impedance Ratio 阻抗比 $Z(+105°C)/Z(20°C) \leq 1.25$ $Z(-55°C)/Z(20°C) \leq 1.25$										
耐久性	LOAD LIFE TEST	<table border="1"> <tr><td>Capacitance Change</td><td>Within ±20% of initial value</td></tr> <tr><td>Dissipation Factor</td><td>150% or less of initial specified value</td></tr> <tr><td>ESR</td><td>150% or less of initial specified value</td></tr> <tr><td>Leakage Current</td><td>Initial specified value or less</td></tr> </table> After 3000 hours application of the rated voltage at 105°C, they meet the characteristics listed below.	Capacitance Change	Within ±20% of initial value	Dissipation Factor	150% or less of initial specified value	ESR	150% or less of initial specified value	Leakage Current	Initial specified value or less		
	Capacitance Change	Within ±20% of initial value										
Dissipation Factor	150% or less of initial specified value											
ESR	150% or less of initial specified value											
Leakage Current	Initial specified value or less											
	MOISTURE RESISTANCE	After reflow soldering and restored at room temperature, they meet the characteristics listed below.										
定格リプル電流補正係数	RIPPLE CURRENT & FREQUENCY MULTIPLIERS	<table border="1"> <tr> <th>Frequency(Hz)</th> <th>120Hz ≤ f ≤ 1KHz</th> <th>1KHz ≤ f ≤ 10KHz</th> <th>10KHz ≤ f ≤ 100KHz</th> <th>100KHz ≤ f ≤ 300KHz</th> </tr> <tr> <td>Coefficient</td> <td>0.10</td> <td>0.40</td> <td>0.70</td> <td>1.00</td> </tr> </table>	Frequency(Hz)	120Hz ≤ f ≤ 1KHz	1KHz ≤ f ≤ 10KHz	10KHz ≤ f ≤ 100KHz	100KHz ≤ f ≤ 300KHz	Coefficient	0.10	0.40	0.70	1.00
Frequency(Hz)	120Hz ≤ f ≤ 1KHz	1KHz ≤ f ≤ 10KHz	10KHz ≤ f ≤ 100KHz	100KHz ≤ f ≤ 300KHz								
Coefficient	0.10	0.40	0.70	1.00								

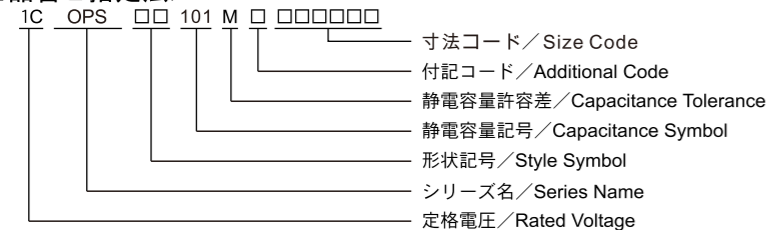
■定格リプル電流補正係数

リプル周波数が標準品一覧表の規定値と異なる場合には、下表の係数を乗じた値以下でご使用下さい。  
When the ripple frequency differs from the spicification shown in the list of standard products, multiply the value with the coefficient shown below, and use the products under the obtained value.

周波数補正係数/FREQUENCY CORRECTION FACTOR

Cap.(μF)	Frequency (Hz)			
	120	1K	10K	100K
27~180	0.40	0.75	0.90	1.00
220~560	0.50	0.85	0.94	1.00
680~1800	0.60	0.87	0.95	1.00
2200~3900	0.75	0.90	0.95	1.00
4700~10000	0.85	0.95	0.98	1.00

■品番ご指定法/HOW TO SPECIFY ITEM NUMBER



■寸法表/CASE SIZE TABLE

- Impedance [Max. Value Ω] at 20°C 100kHz
- Ripple Current [Max. value mA] at 105°C 100kHz

Cap. (μF)	Parameter	2.5 (0E)					4 (0G)				
		Case size ∅D×L (mm)	Dissipation factor (tan δ)	Leakage current (μA)	ESR (mΩ) max. 20°C, 100KHz	Ripple current (mA rms) 105°C, 100KHz	Case size ∅D×L (mm)	Dissipation factor (tan δ)	Leakage current (μA)	ESR (mΩ) max. 20°C, 100KHz	Ripple current (mA rms) 105°C, 100KHz
270	271						6.3 × 9	0.08	216	8	4800
330	331	6.3 × 9	0.08	165	8	4800					
560	561						8 × 7 (8 × 9)	0.08 (0.08)	448 (448)	15 (7)	3900 (5200)
680	681	8 × 7	0.08	340	15	3900	8 × 12	0.08	544	7	5800
820	821	6.3 × 9 (8 × 9) (8 × 12)	0.08 (0.08) (0.08)	410 (410) (410)	8 (7) (7)	4800 (5200) (5800)					
1200	122						10 × 13	0.08	960	8	5500
1500	152	10 × 13	0.08	750	8	5500					

Cap. (μF)	Parameter	6.3 (0J)					10 (1A)				
		Case size ∅D×L (mm)	Dissipation factor (tan δ)	Leakage current (μA)	ESR (mΩ) max. 20°C, 100KHz	Ripple current (mA rms) 105°C, 100KHz	Case size ∅D×L (mm)	Dissipation factor (tan δ)	Leakage current (μA)	ESR (mΩ) max. 20°C, 100KHz	Ripple current (mA rms) 105°C, 100KHz
150	151						6.3 × 10.5	0.08	300	20	3000
270	271						8 × 12	0.08	540	8	4900
330	331	6.3 × 10.5	0.08	416	20	3000					
390	391	8 × 7	0.08	491	15	3900					
470	471	8 × 12	0.08	592	7	5500	10 × 13	0.08	940	8	5500
560	561	6.3 × 9 (8 × 9)	0.08 (0.08)	706 (706)	9 (8)	4300 (5000)					
820	821	10 × 13	0.08	1033	8	5500					

Cap. (μF)	Parameter	16 (1C)				
		Case size ∅D×L (mm)	Dissipation factor (tan δ)	Leakage current (μA)	ESR (mΩ) max. 20°C, 100KHz	Ripple current (mA rms) 105°C, 100KHz
100	101	6.3 × 10.5	0.08	320	24	2800
270	271	8 × 12	0.08	864	9	4500
330	331	10 × 13	0.08	1056	9	4700
470	471	10 × 13	0.08	1504	9	4700

●超長寿命品

OPXシリーズ

JIS C 5101  
CE-04

●Ultra Long Life Assurance

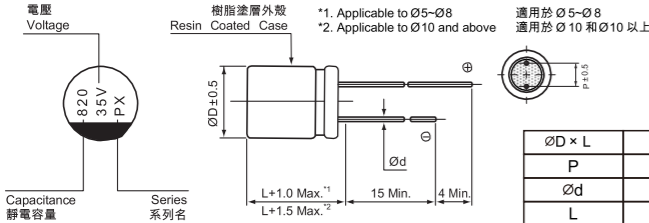
TYPE OPX

JIS C 5101  
CE-04

■FEATURES

- Operating with wide temperature range -55~+105°C
- Ultra-low ESR, High Ripple Current
- Load life of 20000 hours
- RoHS & REACH compliant, Halogen-free

■寸法図/DIAGRAM OF DIMENSIONS



■性能/PERFORMANCE SPECIFICATIONS

カテゴリー温度範囲	CATEGORY TEMPERATURE RANGE	-55 ~ +105°C										
標準静電容量許容差	STANDARD CAPACITANCE TOLERANCE	±20% at 120Hz, 20°C										
漏れ電流 (最大値)	LEAKAGE CURRENT (MAX.VALUE)	≤Specified value (after 2 minutes application of rated voltage at 20°C)										
損失角の正接 (最大値)	DISSIPATION FACTOR (MAX.VALUE)	≤Specified value at 120KHz, 20°C.										
E.S.R.	E.S.R.	≤Specified value at 100KHz, 20°C.										
低温特性	Stability at Low Temperature	Measurement frequency 測試頻率: 100KHz Impedance Ratio 阻抗比 $\frac{Z(+105^\circ\text{C})/Z(20^\circ\text{C})}{Z(-55^\circ\text{C})/Z(20^\circ\text{C})} \leq 1.25$										
耐久性	LOAD LIFE TEST	<table border="1"> <tr><td>Capacitance Change</td><td>Within ±20% of initial value</td></tr> <tr><td>Dissipation Factor</td><td>150% or less of initial specified value</td></tr> <tr><td>ESR</td><td>150% or less of initial specified value</td></tr> <tr><td>Leakage Current</td><td>Initial specified value or less</td></tr> </table> <p>After 20000 hours application of the rated voltage at 105°C, they meet the characteristics listed below.</p>	Capacitance Change	Within ±20% of initial value	Dissipation Factor	150% or less of initial specified value	ESR	150% or less of initial specified value	Leakage Current	Initial specified value or less		
	Capacitance Change	Within ±20% of initial value										
Dissipation Factor	150% or less of initial specified value											
ESR	150% or less of initial specified value											
Leakage Current	Initial specified value or less											
	MOISTURE RESISTANCE	After reflow soldering and restored at room temperature, they meet the characteristics listed below.										
定格リプル電流補正係数	RIPPLE CURRENT & FREQUENCY MULTIPLIERS	<table border="1"> <tr> <th>Frequency(Hz)</th> <th>120Hz ≤ f ≤ 1KHz</th> <th>1KHz ≤ f ≤ 10KHz</th> <th>10KHz ≤ f ≤ 100KHz</th> <th>100KHz ≤ f ≤ 300KHz</th> </tr> <tr> <td>Coefficient</td> <td>0.10</td> <td>0.40</td> <td>0.70</td> <td>1.00</td> </tr> </table>	Frequency(Hz)	120Hz ≤ f ≤ 1KHz	1KHz ≤ f ≤ 10KHz	10KHz ≤ f ≤ 100KHz	100KHz ≤ f ≤ 300KHz	Coefficient	0.10	0.40	0.70	1.00
Frequency(Hz)	120Hz ≤ f ≤ 1KHz	1KHz ≤ f ≤ 10KHz	10KHz ≤ f ≤ 100KHz	100KHz ≤ f ≤ 300KHz								
Coefficient	0.10	0.40	0.70	1.00								

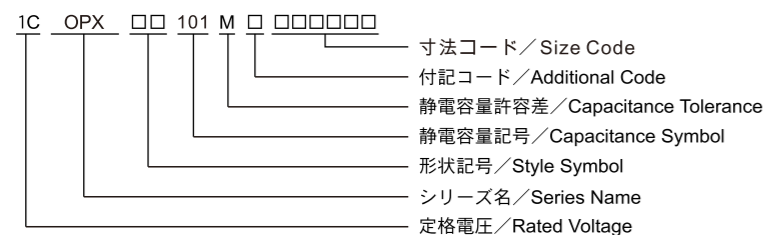
■定格リプル電流補正係数

リプル周波数が標準品一覧表の規定値と異なる場合には、下表の係数を乗じた値以下でご使用下さい。  
When the ripple frequency differs from the specification shown in the list of standard products, multiply the value with the coefficient shown below, and use the products under the obtained value.

周波数補正係数/FREQUENCY CORRECTION FACTOR

Cap.(μF)	Frequency (Hz)			
	120	1K	10K	100K
27 ~ 180	0.40	0.75	0.90	1.00
220 ~ 560	0.50	0.85	0.94	1.00
680 ~ 1800	0.60	0.87	0.95	1.00
2200 ~ 3900	0.75	0.90	0.95	1.00
4700 ~ 10000	0.85	0.95	0.98	1.00

■品番ご指定法 / HOW TO SPECIFY ITEM NUMBER



■寸法表/CASE SIZE TABLE

■Impedance [Max.Value Ω] at 20°C 100kHz  
■Ripple Current [Max. value mA] at 105°C 100kHz

Cap. (μF)	Parameter	4 (0G)					6.3 (0J)				
		Case size ØD' L (mm)	Dissipation factor (tan δ)	Leakage current (μA)	ESR (mΩ) max. 20°C, 100KHz	Ripple current (mA rms) 105°C, 100KHz	Case size ØD' L (mm)	Dissipation factor (tan δ)	Leakage current (μA)	ESR (mΩ) max. 20°C, 100KHz	Ripple current (mA rms) 105°C, 100KHz
270	271	6.3 × 9	0.08	216	8	4800					
330	331						6.3 × 10.5	0.08	416	20	3000
390	391						8 × 7	0.08	491	15	3900
470	471						8 × 12	0.08	592	7	5500
560	561	8 × 7 (8 × 9)	0.08 (0.08)	448 (448)	15 (7)	3900 (5200)	6 × 9 (8 × 9)	0.08 (0.08)	706 (706)	9 (8)	4300 (5000)
680	681	8 × 12	0.08	544	7	5500					
820	821						10 × 13	0.08	1033	8	5500
1200	122	10 × 13	0.08	960	8	5800					

Cap. (μF)	Parameter	10 (1A)					16 (1C)				
		Case size ØD' L (mm)	Dissipation factor (tan δ)	Leakage current (μA)	ESR (mΩ) max. 20°C, 100KHz	Ripple current (mA rms) 105°C, 100KHz	Case size ØD' L (mm)	Dissipation factor (tan δ)	Leakage current (μA)	ESR (mΩ) max. 20°C, 100KHz	Ripple current (mA rms) 105°C, 100KHz
100	101						6.3 × 10.5	0.08	320	24	2800
150	151	6.3 × 10.5	0.08	300	20	3000					
270	271	8 × 12	0.08	540	8	4900	8 × 12	0.08	864	9	4500
330	331						10 × 13	0.08	1056	9	4700
470	471	10 × 13	0.08	940	8	5500	10 × 13	0.08	1504	9	4700

●高圧長寿命品

OPVシリーズ

JIS C 5101  
CE-04

●High Voltage, Long Life Assurance

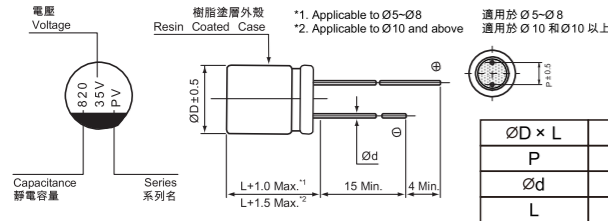
TYPE OPV

JIS C 5101  
CE-04

■FEATURES

- Operating with wide temperature range -55~+105°C
- High voltage, low ESR, high ripple current
- Load life of 3000 hours
- RoHS & REACH compliant, Halogen-free

■寸法図/DIAGRAM OF DIMENSIONS



■性能/PERFORMANCE SPECIFICATIONS

カテゴリー温度範囲	CATEGORY TEMPERATURE RANGE	-55 ~ +105°C										
標準静電容量許容差	STANDARD CAPACITANCE TOLERANCE	±20% at 120Hz, 20°C										
漏れ電流 (最大値)	LEAKAGE CURRENT (MAX.VALUE)	≤Specified value (after 2 minutes application of rated voltage at 20°C)										
損失角の正接 (最大値)	DISSIPATION FACTOR (MAX.VALUE)	≤Specified value at 120KHz, 20°C.										
E.S.R.	E.S.R.	≤Specified value at 100KHz, 20°C.										
低温特性	Stability at Low Temperature	Measurement frequency 測試頻率: 100KHz Impedance Ratio 阻抗比 $Z(+105°C)/Z(20°C) \leq 1.25$ $Z(-55°C)/Z(20°C) \leq 1.25$										
耐久性	LOAD LIFE TEST	<table border="1"> <tr> <td>Capacitance Change</td> <td>Within ±20% of initial value</td> </tr> <tr> <td>Dissipation Factor</td> <td>150% or less of initial specified value</td> </tr> <tr> <td>ESR</td> <td>150% or less of initial specified value</td> </tr> <tr> <td>Leakage Current</td> <td>Initial specified value or less</td> </tr> </table> <p>After 2000 hours application of the rated voltage at 105°C, they meet the characteristics listed below.</p>	Capacitance Change	Within ±20% of initial value	Dissipation Factor	150% or less of initial specified value	ESR	150% or less of initial specified value	Leakage Current	Initial specified value or less		
	Capacitance Change	Within ±20% of initial value										
Dissipation Factor	150% or less of initial specified value											
ESR	150% or less of initial specified value											
Leakage Current	Initial specified value or less											
	MOISTURE RESISTANCE	After reflow soldering and restored at room temperature, they meet the characteristics listed below.										
定格リプル電流補正係数	RIPPLE CURRENT & FREQUENCY MULTIPLIERS	<table border="1"> <tr> <th>Frequency(Hz)</th> <th>120Hz ≤ f ≤ 1KHz</th> <th>1KHz ≤ f ≤ 10KHz</th> <th>10KHz ≤ f ≤ 100KHz</th> <th>100KHz ≤ f ≤ 300KHz</th> </tr> <tr> <td>Coefficient</td> <td>0.10</td> <td>0.40</td> <td>0.70</td> <td>1.00</td> </tr> </table>	Frequency(Hz)	120Hz ≤ f ≤ 1KHz	1KHz ≤ f ≤ 10KHz	10KHz ≤ f ≤ 100KHz	100KHz ≤ f ≤ 300KHz	Coefficient	0.10	0.40	0.70	1.00
Frequency(Hz)	120Hz ≤ f ≤ 1KHz	1KHz ≤ f ≤ 10KHz	10KHz ≤ f ≤ 100KHz	100KHz ≤ f ≤ 300KHz								
Coefficient	0.10	0.40	0.70	1.00								

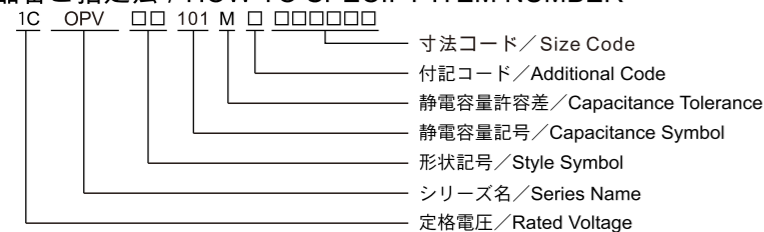
■定格リプル電流補正係数

リプル周波数が標準品一覧表の規定値と異なる場合には、下表の係数を乗じた値以下でご使用下さい。  
When the ripple frequency differs from the specification shown in the list of standard products, multiply the value with the coefficient shown below, and use the products under the obtained value.

周波数補正係数/FREQUENCY CORRECTION FACTOR

Cap.(μF)	Frequency (Hz)			
	120	1K	10K	100K
27 ~ 180	0.40	0.75	0.90	1.00
220 ~ 560	0.50	0.85	0.94	1.00
680 ~ 1800	0.60	0.87	0.95	1.00
2200 ~ 3900	0.75	0.90	0.95	1.00
4700 ~ 10000	0.85	0.95	0.98	1.00

■品番ご指定法 / HOW TO SPECIFY ITEM NUMBER



■寸法表/CASE SIZE TABLE

■Impedance [Max. Value Ω] at 20°C 100kHz  
■Ripple Current [Max. value mA] at 105°C 100kHz

Cap. (μF)	Parameter	16 (1C)					20 (1D)				
		Case size ∅D×L (mm)	Dissipation factor (tan δ)	Leakage current (μA)	ESR (mΩ) max. 20°C, 100KHz	Ripple current (mA rms) 105°C, 100KHz	Case size ∅D×L (mm)	Dissipation factor (tan δ)	Leakage current (μA)	ESR (mΩ) max. 20°C, 100KHz	Ripple current (mA rms) 105°C, 100KHz
150	151						8 × 9	0.12	600	27	2000
220	221	8 × 9	0.12	704	26	2100	8 × 12	0.12	880	25	2400
270	271	8 × 12	0.12	864	24	2500					
330	331						10 × 13	0.12	1320	24	2800
470	471	10 × 13	0.12	1504	23	2900					
680	681	10 × 13	0.12	2176	23	2900					
2200	222	10 × 21	0.12	7040	14	4800					

Cap. (μF)	Parameter	25 (1E)					35 (1V)				
		Case size ∅D×L (mm)	Dissipation factor (tan δ)	Leakage current (μA)	ESR (mΩ) max. 20°C, 100KHz	Ripple current (mA rms) 105°C, 100KHz	Case size ∅D×L (mm)	Dissipation factor (tan δ)	Leakage current (μA)	ESR (mΩ) max. 20°C, 100KHz	Ripple current (mA rms) 105°C, 100KHz
10							5 × 8	0.12	70	65	1000
47							5 × 8 (6.3 × 6)	0.12 (0.12)	329 (329)	55 (35)	1700 (1800)
56	560						8 × 9	0.12	392	29	1900
82	820						8 × 12	0.12	574	27	2300
100	101						6.3 × 8 (8 × 8)	0.12 (0.12)	700 (700)	28 (28)	2500 (2500)
120	121	8 × 9	0.12	600	28	2000					
150	151	6.3 × 9 (8 × 12)	0.12 (0.12)	750 (750)	23 (26)	3300 (2400)	10 × 13	0.12	1050	26	2700
220	221	8 × 8 (8 × 11)	0.12 (0.12)	1100 (1100)	22 (22)	2400 (2600)	8 × 11 (8 × 12)	0.12 (0.12)	1540 (1540)	16 (16)	2800 (2800)
270	271	6.3 × 12 (10 × 13)	0.12 (0.12)	1350 (1350)	27 (25)	2300 (2800)					
330	331	6.3 × 12 (10 × 10) (10 × 12)	0.12 (0.12) (0.12)	1650 (1650) (1650)	27 (22) (22)	2300 (3100) (3300)	10 × 12	0.12	2310	20	3600
470	471	8 × 12	0.12	2350	20	3300	10 × 10	0.12	3290	20	3600
560	561	8 × 12	0.12	2800	15	3400					
680	681	8 × 12 (10 × 13)	0.12 (0.12)	3400 (3400)	15 (15)	3700 (3900)	10 × 13	0.12	4760	20	3600
1000	102	10 × 16	0.12	5000	25	4500	10 × 21	0.12	7000	16	4700

Cap. (μF)	Parameter	50 (1H)					63 (1J)				
		Case size ∅D×L (mm)	Dissipation factor (tan δ)	Leakage current (μA)	ESR (mΩ) max. 20°C, 100KHz	Ripple current (mA rms) 105°C, 100KHz	Case size ∅D×L (mm)	Dissipation factor (tan δ)	Leakage current (μA)	ESR (mΩ) max. 20°C, 100KHz	Ripple current (mA rms) 105°C, 100KHz
22	220						8 × 9	0.12	277	35	1800
27	270						8 × 12	0.12	340	33	2100
33	330	8 × 9	0.12	330	32	1900					
39	390	8 × 12	0.12	390	29	2200					
47	470						10 × 13	0.12	592	29	2600
56	560						10 × 12	0.12	705	29	2600
68	680	10 × 13	0.12	680	28	2600					
180	181						10 × 12	0.12	2268	27	3400
220	221	10 × 12	0.12	2200	22	3500					
330	331						10 × 21	0.12	4158	20	4600



■寸法表/CASE SIZE TABLE

■Impedance[Max.Value Ω] at 20°C 100kHz

■Ripple Current [Max. value mA] at 105°C 100kHz

Cap. (μF)	WV (V) Parameter	80 (1K)					100 (2A)				
		Case size ∅D×L (mm)	Dissipation factor (tan δ)	Leakage current (μA)	ESR (mΩ) max. 20°C, 100KHz	Ripple current (mA rms) 105°C, 100KHz	Case size ∅D×L (mm)	Dissipation factor (tan δ)	Leakage current (μA)	ESR (mΩ) max. 20°C, 100KHz	Ripple current (mA rms) 105°C, 100KHz
6.8	6R8						8 × 9	0.12	136	45	1600
10	100	8 × 9	0.12	160	40	1700	8 × 12	0.12	200	42	1800
12	120	8 × 12	0.12	192	38	1900					
15	150										
18	180						10 × 13	0.12	360	38	2200
22	220	10 × 13	0.12	352	35	2300					