

# SG240128A ( 240 DOTS X 128 DOTS )

## FEATURES

- BUILT-IN CONTROLLER (T6963C OR EQUIVALENT)
- +5 V POWER SUPPLY
- 1/128 DUTY CYCLE
- 8-BIT PARALLEL INTERFACE

## MECHANICAL DATA

ITEM	DIMENSIONS	UNIT
Module Size ( W x H x T )	170.0 x 102.0 x 14.0 (15.5)	mm
Viewing Area ( W x H )	132.0 x 76.0	mm
Active Area ( W x H )	119.97 x 63.97	mm
Dot Size ( W x H )	0.47 x 0.47	mm
Dot Pitch ( W x H )	0.50 x 0.50	mm

## INTERFACE PIN CONNECTIONS

NO.	SYMBOL	LEVEL	FUNCTION
1	FGND	-	Frame Ground
2	V <sub>SS</sub>	0V	Power Supply Ground
3	V <sub>DD</sub>	5V	Power Supply Voltage
4	V <sub>o</sub>	-	Contrast Adjustment Voltage
5	/WR	L	Write Signal
6	/RD	L	Read Signal
7	/CE	L	Enable Signal
8	C/D	H/L	H : Instruction Code , L : Data Code
9	NC	-	No Connection
10	/RST	L	Reset Signal
11~18	DB0-DB7	H/L	Data Bus Line
19	FS	H/L	H : 6*8 , L : 8*8 Select Of Columns
20	RV	H/L	H : Reverse display ; L : Normal display

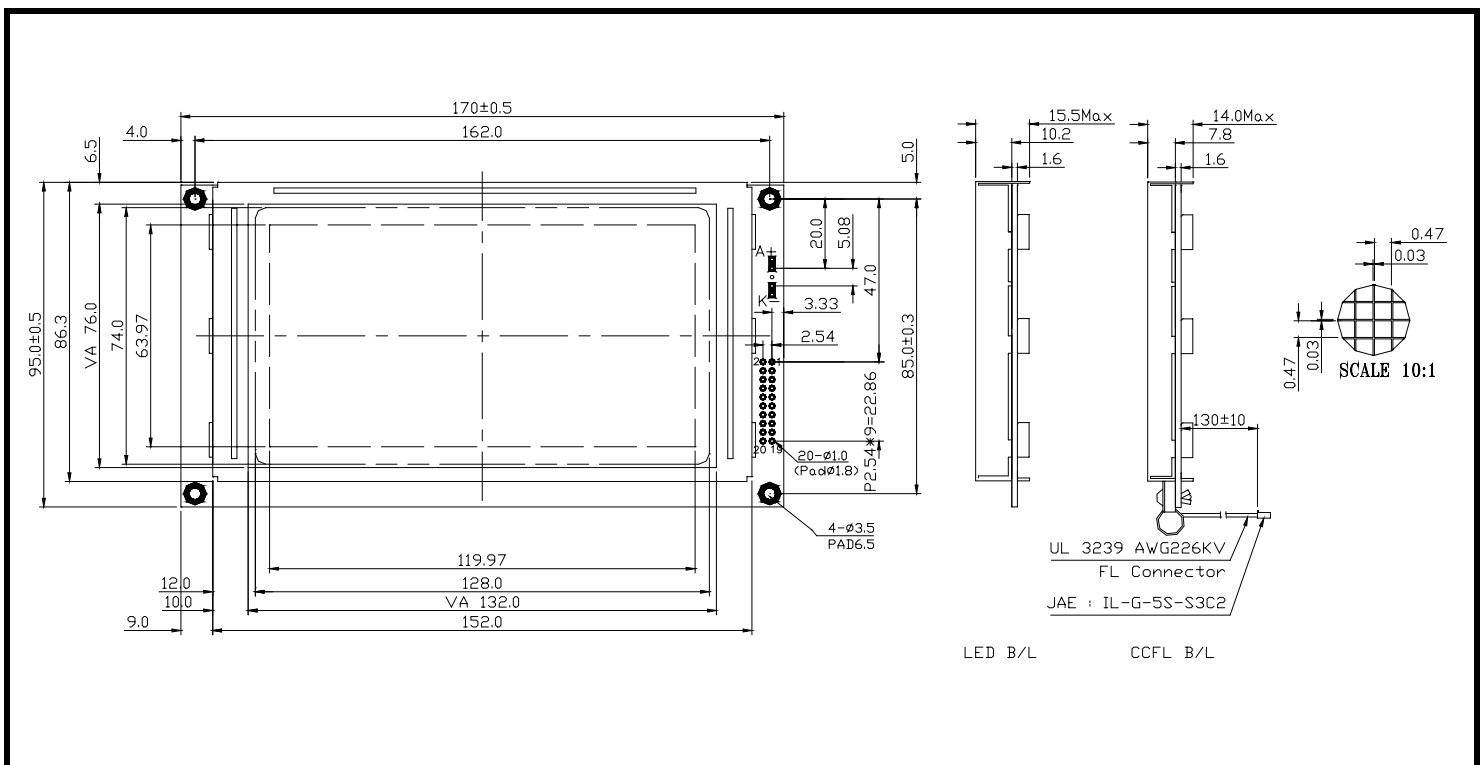
## ABSOLUTE MAXIMUM RATINGS

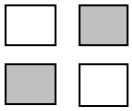
ITEM	SYMBOL	MIN.	TYP.	MAX.	UNIT
Supply Voltage For Logic	V <sub>DD</sub> -V <sub>SS</sub>	0	-	7	V
Supply Voltage For LCD Drive	V <sub>DD</sub> -V <sub>o</sub>	0	-	28	V
Input Voltage	V <sub>I</sub>	V <sub>SS</sub>	-	V <sub>DD</sub>	V

## ELECTRICAL CHARACTERISTICS

ITEM	SYMBOL	CONDITION	MIN.	TYP.	MAX.	UNIT	
Supply Voltage For Logic	V <sub>DD</sub> -V <sub>SS</sub>	-	4.5	5	5.5	V	
LCD Supply Voltage	V <sub>DD</sub> -V <sub>o</sub>	V <sub>DD</sub> =5V Ta=25	16.9	18	19.2	V	
Supply Current	I <sub>DD</sub>	V <sub>DD</sub> =5V	-	15	24	mA	
Input Voltage	"HIGH" Level	V <sub>IH</sub>	-	2.2	-	V <sub>DD</sub>	V
	"LOW" Level	V <sub>IL</sub>	-	-	-	0.6	V
Output Voltage	"HIGH" Level	V <sub>OH</sub>	-	2.4	-	-	V
	"LOW" Level	V <sub>OL</sub>	-	-	-	0.4	V

## EXTERNAL DIMENSIONS



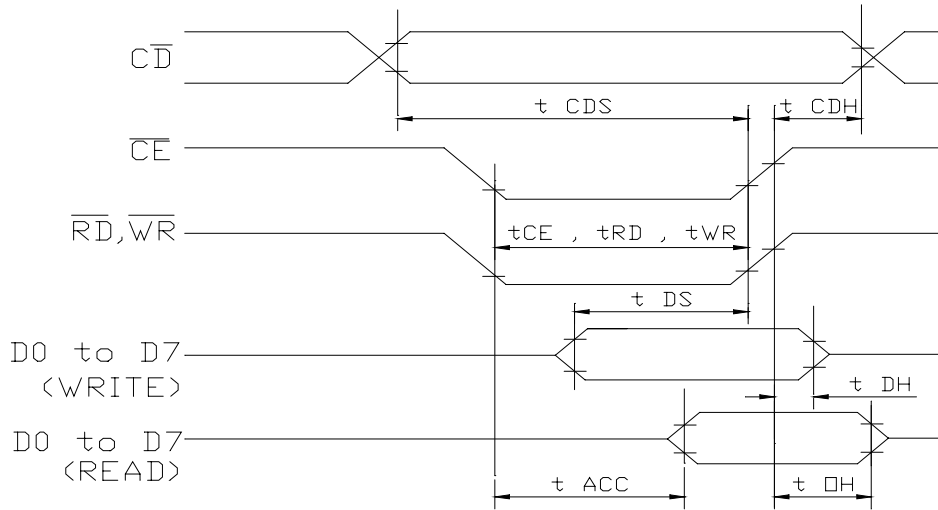


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## TIMING CHARACTERISTICS

ITEM	SYMBOL	MIN.	MAX.	UNIT.
C/D Setup Time	$t_{CDS}$	100	-	ns
C/D Hold Time	$t_{CDH}$	10	-	ns
CE, RD, WR Pulse Width	$t_{CE}, t_{RD}, t_{WR}$	80	-	ns
Data Setup Time	$t_{DS}$	80	-	ns
Data Hold Time	$t_{DH}$	40	-	ns
Access Time	$t_{ACC}$	-	150	ns
Output Hold Time	$t_{OH}$	10	50	ns

### Bus Timing



## BLOCK DIAGRAM

