



**WINSTAR Display Co.,Ltd.**  
**華凌光電股份有限公司**

## SPECIFICATION

**MODULE NO.: WG320240BP2**

### General Specification

Item	Dimension	Unit
Number of dots	320x240	—
Module dimension	160.0 x 109.0 x 13.0 (MAX)	mm
View area	122.0 x 92.0	mm
Active area	115.18 x 86.38	mm
Dot size	0.33 x 0.33	mm
Dot pitch	0.36 x 0.36	mm
Duty	1/240	
Backlight Type	LED	
IC	S1D13700	

# Absolute Maximum Ratings

Item	Symbol	Min	Typ	Max	Unit
Operating Temperature	T <sub>OP</sub>	-20	—	+70	°C
Storage Temperature	T <sub>ST</sub>	-30	—	+80	°C
Input Voltage	V <sub>IN</sub>	-0.3	—	V <sub>DD</sub> +0.5	V
Output Voltage	V <sub>OUT</sub>	-0.3	—	V <sub>DD</sub> +0.5	V
Supply Voltage For Logic	V <sub>DD</sub> -V <sub>SS</sub>	0	—	6.5	V
Supply Voltage For LCD	V <sub>DD</sub> -V <sub>0</sub>	0	—	32	V

# Electrical Characteristics

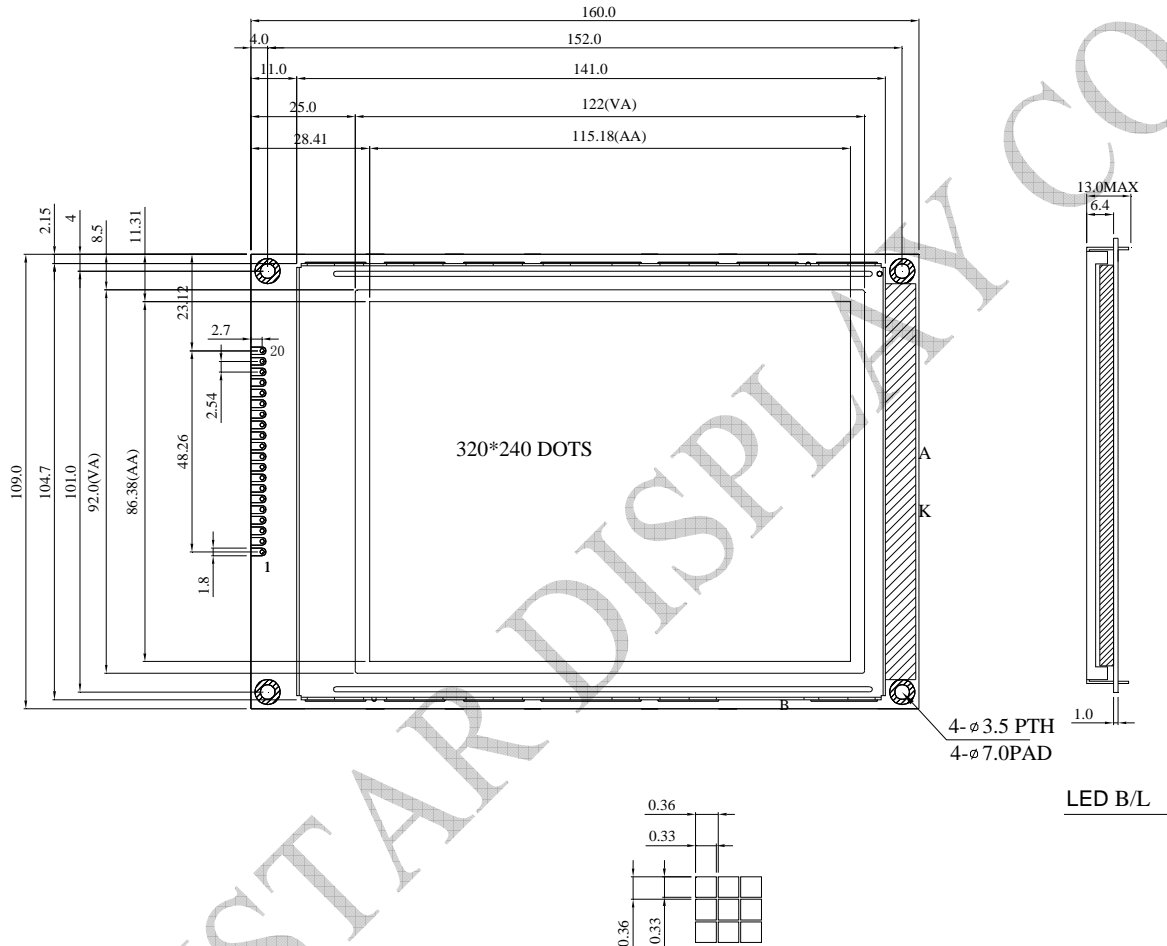
Item	Symbol	Condition	Min	Typ	Max	Unit
Supply Voltage For Logic	V <sub>DD</sub> -V <sub>SS</sub>	—	4.5	5.0	5.5	V
Supply Voltage For LCD * Note	V <sub>DD</sub> -V <sub>0</sub>	T <sub>a</sub> =-20°C	—	—	26.1	V
		T <sub>a</sub> =25°C	23.0	23.6	24.2	V
		T <sub>a</sub> =70°C	21.8	—	—	V
Input High Volt.	V <sub>IH</sub>	—	3.5	—	—	V
Input Low Volt.	V <sub>IL</sub>	—	—	—	1.0	V
Output High Volt.	V <sub>OH</sub>	—	V <sub>DD</sub> -0.4	—	—	V
Output Low Volt.	V <sub>OL</sub>	—	—	—	0.4	V
Supply Current	I <sub>DD</sub>	V <sub>DD</sub> =5.0V	90	100	110	mA

# Interface Pin Function

For 80 family

Pin No.	Symbol	Level	Description
1	V <sub>SS</sub>	0V	Ground
2	V <sub>DD</sub>	5.0V	Power supply for Logic
3	V <sub>O</sub>	(Variable)	Driving voltage for LCD
4	$\overline{\text{WR}}$	H/L	8080 family: Write signal, 6800 family: R/W signal
5	$\overline{\text{RD}}$	H/L	8080 family: Read signal, 6800 family: Enable clock
6	CS	H/L	Chip select ,Active L
7	A0	H/L	RD=L WR=H ,A0=L :Data Read    AO=H :Status read RD=H WR=L ,A0=L :Data Write    AO=H :Command write
8	RES	H/L	Controller reset signal, Active L
9~16	DB0~DB7	H/L	Data bus
17	VEE		Negative voltage output
18	SEL		8088,6800 interface selection (1:68 ,0:80)
19	WAIT		Check busy
20	A		Power supply for B/L +

# Contour Drawing



PIN NO.	SYMBOL
1	VSS
2	VDD
3	VO
4	WR
5	$\overline{RD}$
6	CS
7	AO
8	RES
9	DB0
10	DB1
11	DB2
12	DB3
13	DB4
14	DB5
15	DB6
16	DB7
17	VEE
18	SEL
19	WAIT
20	A

DOT SIZE  
SCALE 10/1

The non-specified tolerance of dimension is  $\pm 0.3\text{mm}$ .