



WINSTAR Display Co.,Ltd.
華凌光電股份有限公司

SPECIFICATION

MODULE NO.: WG19232B

General Specification

Item	Dimension	Unit
Number of dots	192 x 32	—
Module dimension	116.0 x 37.0 x 13.9(MAX)	mm
View area	85.0 x 18.6	mm
Active area	80.6 x 15.96	mm
Dot size	0.38 x 0.46	mm
Dot pitch	0.42 x 0.50	mm
Duty	1/32	
Backlight Type	LED	
IC	ST7920	
Interface	6800	

Absolute Maximum Ratings

Item	Symbol	Min	Typ	Max	Unit
Operating Temperature	T_{OP}	-20	—	+70	°C
Storage Temperature	T_{ST}	-30	—	+80	°C
Input Voltage	V_{IN}	-0.3	—	$V_{DD}+0.3$	V
Supply Voltage For Logic	$V_{DD}-V_{SS}$	-0.3	—	5.5	V
Supply Voltage For LCD	V_O-V_{SS}	0	—	7.0	V

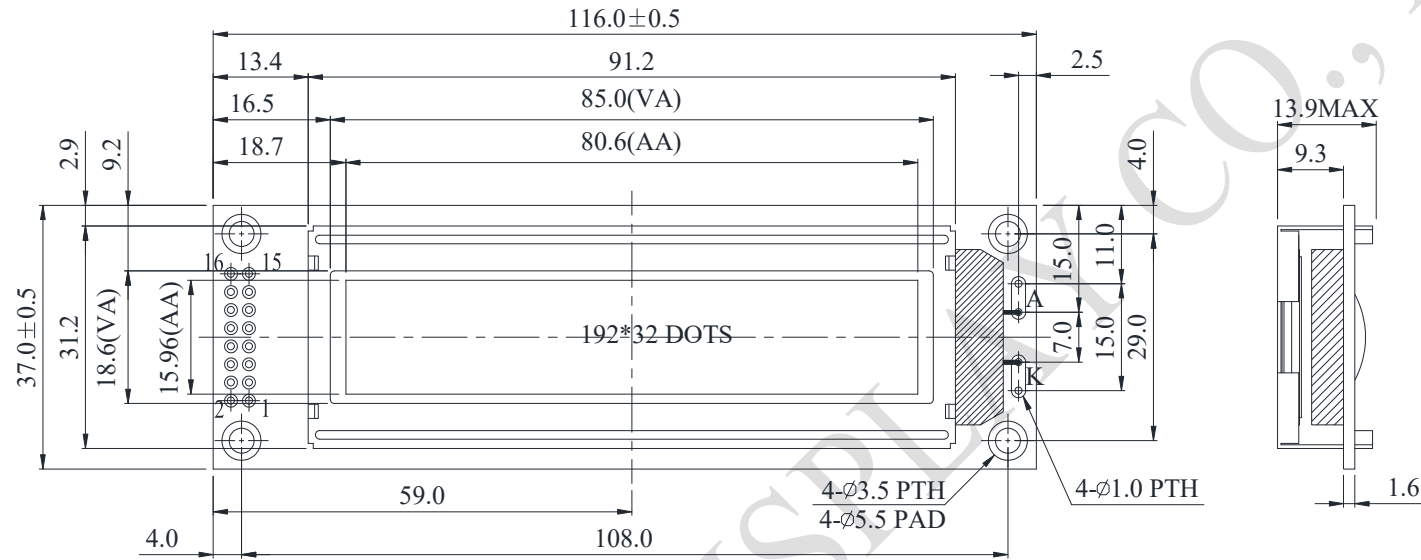
Electrical Characteristics

Item	Symbol	Condition	Min	Typ	Max	Unit
Supply Voltage For Logic	$V_{DD}-V_{SS}$	—	4.5	5.0	5.5	V
Supply Voltage For LCD	V_O-V_{SS}	$T_a=-20^{\circ}\text{C}$	—	—	5.4	V
		$T_a=25^{\circ}\text{C}$	4.4	4.5	4.6	V
		$T_a=+70^{\circ}\text{C}$	3.8	—	—	V
Input High Volt.	V_{IH}	—	$0.7V_{DD}$	—	V_{DD}	V
Input Low Volt.	V_{IL}	—	-0.3	—	0.6	V
Output High Volt.	V_{OH}	—	$0.8 V_{DD}$	—	V_{DD}	V
Output Low Volt.	V_{OL}	—	—	—	0.4	V
Supply Current	I_{DD}	$V_{DD}=5.0\text{V}$	1.5	2.0	2.8	mA

Interface Pin Function

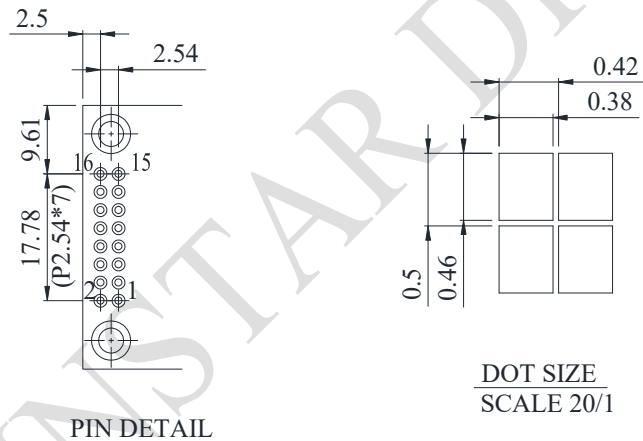
Pin No.	Symbol	Level	Description
1	VSS	0V	Ground
2	VDD	5.0V	Supply voltage for logic
3	V0	—	Contrast Adjustment
4	RS	—	H: Data , L : Instruction
5	R/W	H/L	H: Read (MPU←Module) , L: Write (MPU→Module)
6	E	H/L	ENABLE SIGNAL
7	DB0	H/L	Data bus line
8	DB1	H/L	Data bus line
9	DB2	H/L	Data bus line
10	DB3	H/L	Data bus line
11	DB4	H/L	Data bus line
12	DB5	H/L	Data bus line
13	DB6	H/L	Data bus line
14	DB7	H/L	Data bus line
15	Vout	—	Positive voltage output
16	NC	—	No connection

Contour Drawing



LED B/L

PIN NO.	SYMBOL
1	V _{SS}
2	V _{DD}
3	V ₀
4	RS
5	R/ \bar{W}
6	E
7	DB ₀
8	DB ₁
9	DB ₂
10	DB ₃
11	DB ₄
12	DB ₅
13	DB ₆
14	DB ₇
15	V _{out}
16	NC



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