



WINSTAR Display Co.,Ltd.
華凌光電股份有限公司

SPECIFICATION

MODULE NO.: WG12232N

General Specification

Item	Dimension	Unit
Number of Characters	122 x 32	—
Module dimension	59.0 x 29.3 x 5.5(MAX)	mm
View area	52.0 x 15.0	mm
Active area	45.72x 11.97	mm
Dot size	0.345 x 0.345	mm
Dot pitch	0.375 x 0.375	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
LCD Driver Voltage	V_{LCD}	-0.3	—	7.0	V

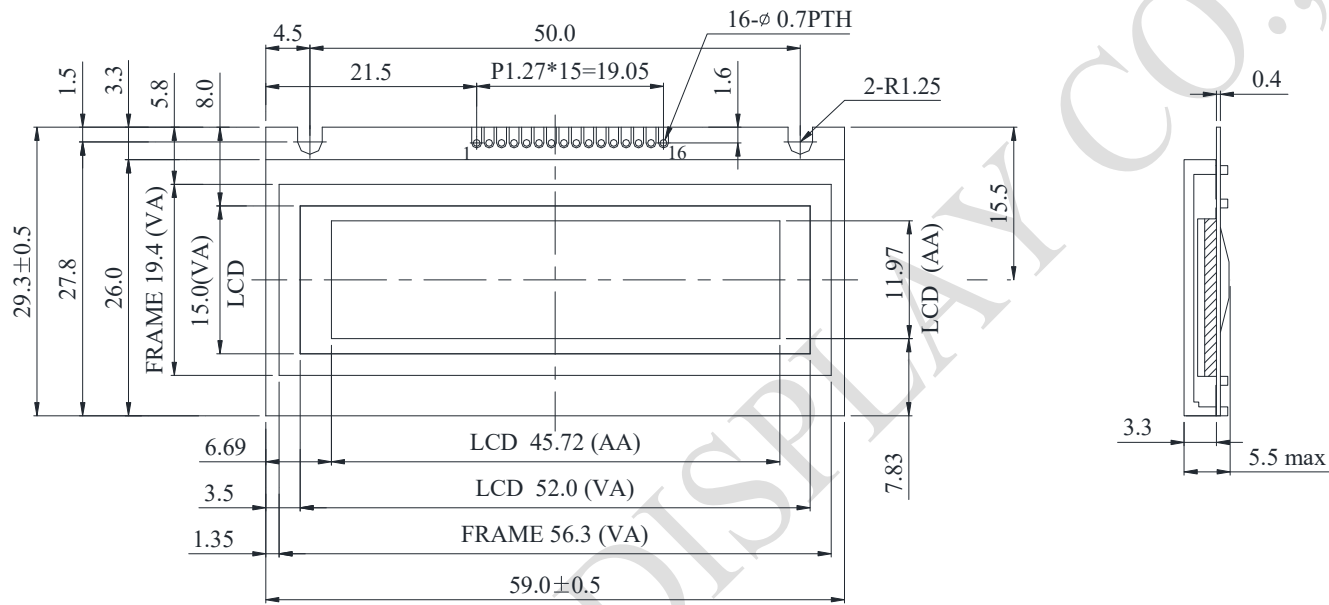
Electrical Characteristics

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_0-V_{SS}	$T_a=-20^{\circ}C$	—	—	—	V
		$T_a=25^{\circ}C$	4.2	4.35	4.5	V
		$T_a=+70^{\circ}C$	—	—	—	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}	$V_{DD}=5.0V$	0.8	1.0	1.5	mA

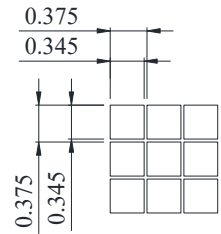
Interface Pin Function

Pin No.	Symbol	Level	Description
1	$\overline{\text{VLED}}$	0V	B/L Selected
2	V _{SS}	0V	Ground
3	V _{DD}	5.0V	Power supply for logic
4	V _o	(Variable)	Operating voltage for LCD
5	RS	H/L	H: Data , L : Instruction
6	E	H/L	ENABLE SIGNAL
7	VO _{UT}		Positive Voltage Output
8	DB0	H/L	Data bus line
9	DB1	H/L	Data bus line
10	DB2	H/L	Data bus line
11	DB3	H/L	Data bus line
12	DB4	H/L	Data bus line
13	DB5	H/L	Data bus line
14	DB6	H/L	Data bus line
15	DB7	H/L	Data bus line
16	R/W	H/L	H : Read ; L : Write

Contour Drawing



PIN NO.	SYMBOL
1	VLED
2	VSS
3	VDD
4	V0
5	RS
6	E
7	VOUT
8	DB0
9	DB1
10	DB2
11	DB3
12	DB4
13	DB5
14	DB6
15	DB7
16	R/W



DOT SIZE
SCALE 15/1

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