



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

## SPECIFICATION

**MODULE NO.: WO1602I3**

### General Specification

Item	Dimension	Unit
Number of Characters	16 Characters x 2 Lines	—
Module dimension	66.0 x 28.0 x 9.3	mm
View area	40.0 x 9.98	mm
Active area	38.0 x 7.98	mm
Dot size	0.36 x 0.43	mm
Dot pitch	0.41 x 0.48	mm
Character size	2.00 x 3.79	mm
Character pitch	2.40 x 4.19	mm
Duty	1/16 Duty , 1/5 Bias	
Backlight Type	LED	
IC	ST7032i	

# 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
Power Supply Voltage	$V_{DD}-V_{SS}$	-0.3	—	+6.0	V
LCD Driver Voltage	$V_{LCD}$	2.7	—	7.0	V

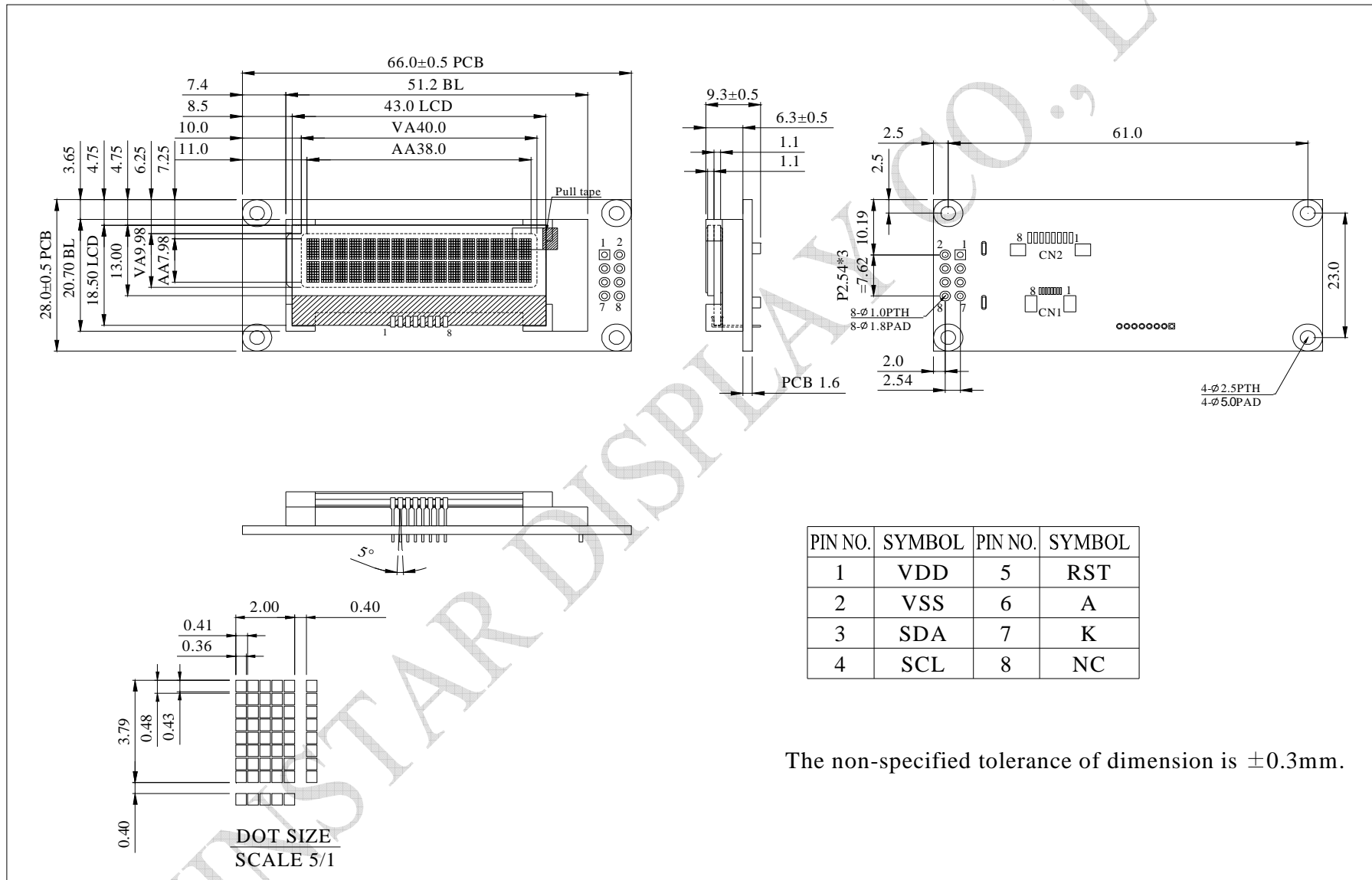
# Electrical Characteristics

Item	Symbol	Condition	Min	Typ	Max	Unit
Supply Voltage For Logic	$V_{DD}-V_{SS}$	—	3	3.3	3.5	V
Supply Voltage For LCD	$V_{LCD}$	$T_a=-20^{\circ}C$	—	—	—	V
		$T_a=25^{\circ}C$	4.3	4.5	4.7	V
		$T_a=70^{\circ}C$	—	—	—	V
Input High Volt.	$V_{IH}$	—	$0.7 V_{DD}$	—	$V_{DD}$	V
Input Low Volt.	$V_{IL}$	—	—	—	$0.2 V_{DD}$	V
Output High Volt.	$V_{OH}$	—	$0.8 V_{DD}$	—	$V_{DD}$	V
Output Low Volt.	$V_{OL}$	—	—	—	$0.2V_{DD}$	V
Supply Current(No include LED Backlight)	$I_{DD}$	—	—	0.2	1	mA

# Interface Pin Function

Pin No.	Symbol	Level	Description
1	VDD	P	Power supply
2	VSS	P	Ground
3	SDA	-	(In I2C interface DB7 (SDA) is input data. SDA and SCL must connect to I2C bus (I2C bus is to connect a resistor between SDA/SCL and the power of I2C bus ).
4	SCL	-	(In I2C interface DB6 (SCL) is clock input. SDA and SCL must connect to I2C bus (I2C bus is to connect a resistor between SDA/SCL and the power of I2C bus ).
5	RST	-	RESET (Low active)
6	A	-	LED+
7	K	-	LED-
8	NC	-	No Connection

# Contour Drawing



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