Winstar Display Co., LTD
華凌光電股份有限公司
住址: 407 台中市中清路 163 號
No.163 Chung Ching RD.,
Taichune, Taiwan, R.O.C
WEB: http://www.winstar.com.tw
E-mail: sales@winstar.com.tw
Tel:886-4-24262208 Fax：886-4-24262207

SPECIFICATION

CUSTOMER ： _____

MODULE NO.: WO1602AT-05HH#FC

General Specification

Item	Dimension	Unit
Number of Characters	16 characters x 2 Lines	—
Module dimension	54.6x 20.8 x 2.8(MAX)	mm
View area	51.5 x 12.2	mm
Active area	47.6 x 9.7	mm
Dot size	0.48 x 0.54	mm
Dot pitch	0.53 x 0.59	mm
Character size	2.60 x 4.67	mm
Character pitch	3.00 x 5.07	mm
LCD type	FSTN Positive, Transflective (In LCD production, It will occur slightly color difference. We can only guarantee the same color in the same batch.)	
Duty	1/16 , 1/5 Bias	
View direction	6 o'clock	
Backlight Type	Without backlight	

Absolute Maximum Ratings

Item	Symbol	Min	Typ	Max	Unit
Operating Temperature	T_{OP}	-20	—	+70	℃
Storage Temperature	T_{ST}	-30	—	+80	℃
Supply voltage for Logic	V_{DD}	-0.3	—	6.0	V
LCD Driver Voltage	V_{LCD}	7.0- V_{SS}		-0.3+ V_{SS}	V

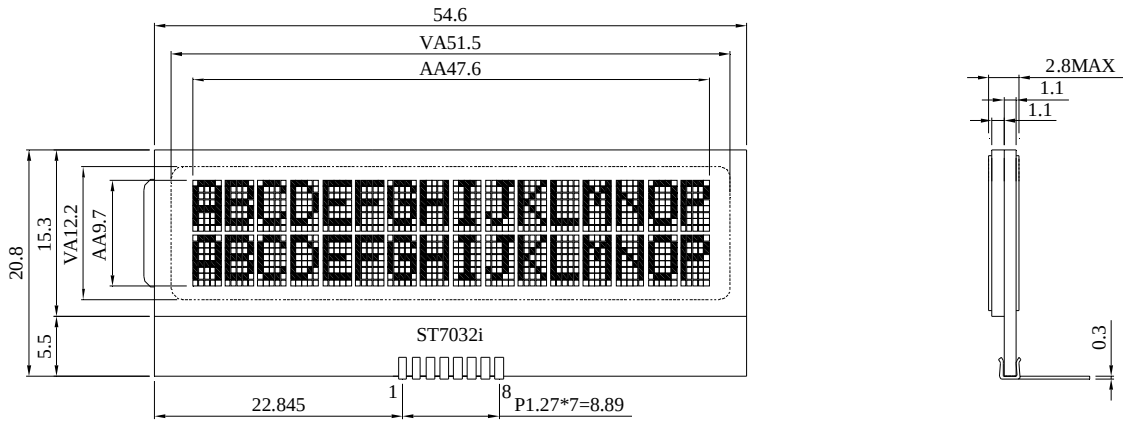
Electrical Characteristics

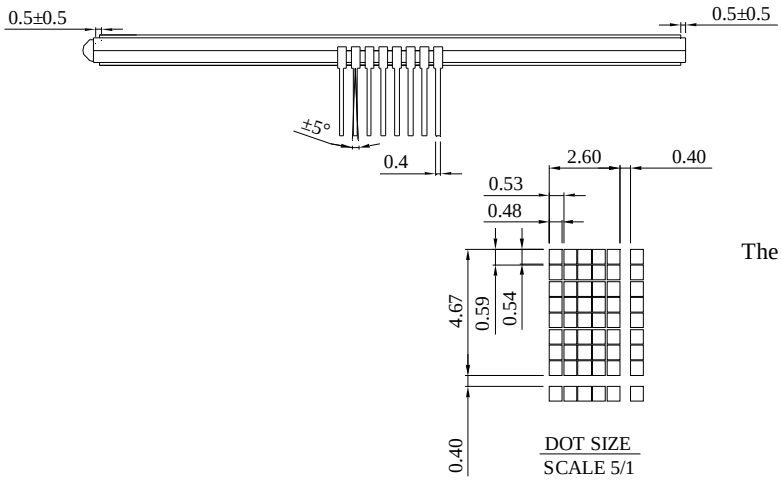
Item	Symbol	Condition	Min	Typ	Max	Unit
Supply Voltage For Logic	V_{DD}-V_{SS}	—	3	3.3	5 (bon=1 max=3.5V)	V
Supply Voltage For LCD	V_{LCD}	Ta=-20℃ Ta=25℃ Ta=70℃	— — —	— 4.5 —	— — —	V V V
Input High Volt.	V_{IH}	—	0.7 V_{DD}	—	V_{DD}	V
Input Low Volt.	V_{IL}	—	—	—	0.2 V_{DD}	V
Output High Volt.	V_{OH}	—	0.8 V_{DD}	—	V_{DD}	V
Output Low Volt.	V_{OL}	—	—	—	0.2V_{DD}	V
Supply Current(No include LED Backlight)	I_{DD}	—	—	0.18	—	mA

Interface Pin Function

Pin No.	Symbol	Level	Description
1	VOUT		DC/DC voltage converter. Connect a capacitor between this terminal and VIN when the built-in booster is used.
2	CAP1N		For voltage booster circuit(VDD-VSS) External capacitor about 0.1u~4.7uf
3	CAP1P		
4	VDD	3.0/5.0V	Power supply
5	VSS		GND
6	SDA		(In I2C interface DB7 (SDA) is input data. SDA and SCL must connect to I2C bus (I2C bus is to connect a resister between SDA/SCL and the power of I2C bus).
7	SCL		(In I2C interface DB6 (SCL) is clock input. SDA and SCL must connect to I2C bus (I2C bus is to connect a resister between SDA/SCL and the power of I2C bus).
8	RST		RESET

Contour Drawing





PIN NO.	SYMBOL
1	VOUT
2	CAP1N
3	CAP1P
4	VDD
5	VSS
6	SDA
7	SCL
8	RST

The non-specified tolerance of dimension is ±0.2mm.