



WINSTAR Display Co.,Ltd.
華凌光電股份有限公司

SPECIFICATION

MODULE NO.:

WO2002A

General Specification

Item	Dimension	Unit
Number of Characters	20 characters x 2 Lines	—
Module dimension	74.2 x 25.2 x 6.3	mm
View area	61.0 x 15.1	mm
Active area	58.5 x 9.84	mm
Dot size	0.45 x 0.54	mm
Dot pitch	0.50 x 0.59	mm
Character size	2.45 x 4.67	mm
Character pitch	2.95 x 5.17	mm
Duty	1/16DUTY,1/5BIAS	
Backlight Type	LED	
IC	ST7036i	
Interface	I2C	

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}	-0.3	—	+7.0	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 ($\text{bon}=1$ $\text{max}=3.5\text{V}$)	V
Supply Voltage For LCD	V_{LCD}	$T_a=-20^{\circ}\text{C}$	—	—	—	V
		$T_a=25^{\circ}\text{C}$	—	4.5	—	V
		$T_a=70^{\circ}\text{C}$	—	—	—	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}	—	$0.7V_{DD}$	—	—	V
Output Low Volt.	V_{OL}	—	—	—	0.8	V
Supply Current(No include LED Backlight)	I_{DD}	—	—	0.2	—	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)
3	CAP1P		External capacitor about 0.1u~4.7uf
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

