



WINSTAR Display Co.,Ltd.
華凌光電股份有限公司

SPECIFICATION

MODULE NO.: WH2004AR

General Specification

Item	Dimension	Unit
Number of Characters	20 characters x 4Lines	—
Module dimension	98.0 x 60.0 x 13.6(MAX)	mm
View area	77.0 x 25.2	mm
Active area	70.4 x 20.8	mm
Dot size	0.55 x 0.55	mm
Dot pitch	0.60 x 0.60	mm
Character size	2.95 x 4.75	mm
Character pitch	3.55 x 5.35	mm
Duty	1/16	
Backlight Type	LED	
Controller IC	ST7066	
Interface	UART	

Absolute Maximum Ratings

Item	Symbol	Min	Typ	Max	Unit
Operating Temperature	T _{OP}	-20	—	+70	°C
Storage Temperature	T _{ST}	-30	—	+80	°C
Supply Voltage	—	V _{SS} -0.3	—	6.0	V
EEPROM Cell Endurance	—	100K	—	—	E/W
Input Voltage	—	V _{SS} -0.3	—	V _{DD} +0.3	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 _{DD} -V _O	T _a =25°C	3.75	4.05	4.35	V
Input High Voltage	V _{IH}	—	3.5	—	5.0	V
Input Low Voltage	V _{IL}	—	0	—	1.5	V
Supply Current (Module + Backlight)	I _{DD}	V _{DD} =5.0V	—	—	65	mA

Interface Pin Function

CON1

Pin No.	Symbol	Description
1	RX	UART: serial data input (full duplex communication)
2	VSS	Ground
3	VDD	Supply Voltage
4	TX	UART: serial data output
5	CS	SPI: chip select
6	SDO	SPI: serial data output
7	SCK/SCL	SPI: serial clock I2C: serial clock
8	SDI/SDA	SPI: serial data input I2C: serial data input/output
9	VSS	Ground
10	VDD	Supply Voltage

Contour Drawing

