



WINSTAR Display Co.,Ltd.
華凌光電股份有限公司



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SPECIFICATION

MODULE NO.: WO24064C-TFH#

General Specification

Item	Dimension	Unit
Number of dots	240 x 64	—
Module dimension	111.4 x 45.5 x 5.6	mm
View area	106.2 x 31.2	mm
Active area	103.17 x 27.49	mm
Dot size	0.40 x 0.40	mm
Dot pitch	0.43 x 0.43	mm
Duty	1/64	
Backlight Type	LED	
IC	ST7586S	
Interface	6800/8080/3-Line/4-Line	

Absolute Maximum Ratings

Item	Symbol	Min	Typ	Max	Unit
Operating Temperature	T _{OP}	-20	—	+70	°C
Storage Temperature	T _{ST}	-30	—	+80	°C
Digital Power Supply Voltage	V _{DDI}	-0.3	—	3.6	V
Analog Power supply voltage	V _{DDA}	-0.3	—	3.6	V
LCD Power supply voltage	V _{0-XV0}	-0.3	—	19	V
LCD Power supply voltage	V _G	-0.3	—	5.5	V

Electrical Characteristics

Item	Symbol	Condition	Min	Typ	Max	Unit
Supply Voltage For Logic	V _{DD-VSS}	—	3.0	3.3	3.4	V
Supply Voltage For LCM	V _{0-XV0}	T _a =-20°C	—	—	—	V
		T _a =25°C	9.8	10.0	10.2	V
		T _a =+70°C	—	—	—	V
Input High Volt.	V _{IH}	—	0.7V _{DD}	—	V _{DD}	V
Input Low Volt.	V _{IL}	—	V _{SS}	—	0.3 V _{DD}	V
Output High Volt.	V _{OH}	—	0.8 V _{DD}	—	V _{DD}	V
Output Low Volt.	V _{OL}	—	V _{SS}	—	0.2V _{DD}	V
Supply Current(No include LED Backlight)	I _{DD}	V _{DD} =3.3V	0.1	1.5	3.0	mA

Interface Pin Function

Pin No.	Symbol	I/O	Description																				
1	VG	P	VG is the power of SEG-drivers.																				
2	XV0	P	Negative operating voltage of COM-drivers.																				
3	V0	P	Positive operating voltage of COM-drivers. V0O is the output of the positive Vop generator. V0I is the positive Vop supply of LCD drivers. V0S is the sensor of the positive Vop generator. V0O, V0I & V0S should be separated on ITO and be connected together by FPC.																				
4	VM	P	VM is the non-select voltage level of COM-drivers.																				
5	VDDA	P	Analog power for internal booster.																				
6	VSS	P	Ground																				
7	VD1	P	VD1I is the power source of digital circuits.																				
8	VDDI	P	Power of interface I/O circuit.																				
9	CSB	Input	Chip select input pin. CSB="L": This chip is selected and the MPU interface is active.																				
10	IF3	Input	These pins select interface operation mode. <table><tr><th>IF3</th><th>IF2</th><th>IF1</th><th>MPU interface type</th></tr><tr><td>H</td><td>H</td><td>L</td><td>80 series 8-bit parallel</td></tr><tr><td>H</td><td>L</td><td>L</td><td>68 series 8-bit parallel</td></tr><tr><td>L</td><td>H</td><td>H</td><td>8-bit serial (4-Line)</td></tr><tr><td>L</td><td>H</td><td>L</td><td>9-bit serial (3-Line)</td></tr></table>	IF3	IF2	IF1	MPU interface type	H	H	L	80 series 8-bit parallel	H	L	L	68 series 8-bit parallel	L	H	H	8-bit serial (4-Line)	L	H	L	9-bit serial (3-Line)
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11	IF2																						
12	IF1																						
Note: Refer to "Interface Selection" for detailed information.																							
13	RSTB	Input	Reset input pin. When RSTB is "L", internal initialization procedure is executed.																				
14	/RD(E)	Input	Read / Write execution control pin. (This pin is only used in parallel interface)																				
15	D7	I/O	The bi-directional data bus of the MPU interface. When CSB is "H", they are high impedance. If using serial interface: D0 is the SDA signal in 4-Line & 3-Line interface. D1 is the A0 signal in 4-Line interface																				
16	D6																						
17	D5																						
18	D4																						
19	D3																						
20	D2																						
21	D1																						
22	D0																						
23	NC		No connection																				

24	/WR(R/W)	Input	Read / Write execution control pin. (This pin is only used in parallel interface)
25	A0(SCL)	Input	The function of this pin is different in parallel and serial interface. In parallel interface: A0 is register selection input.
26	VSS	P	Ground

Contour Drawing

