



WINSTAR Display Co.,Ltd.
華凌光電股份有限公司



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WEB: <https://www.winstar.com.tw> E-mail: sales@winstar.com.tw



SPECIFICATION

MODULE NO.:

WO12864T

General Specification

Item	Dimension	Unit
Number of dots	128 x 64	—
Module dimension	38.0 x 26.42 x 8.8	mm
View area	29.58 x 16.22	mm
Active area	25.58x 14.06	mm
Dot size	0.18 x 0.20	mm
Dot pitch	0.20 x 0.22	mm
Duty	1/65 DUTY,1/9 BIAS	
Backlight Type	LED	
IC	ST7565P	
Interface	6800/8080/4-Line SPI	

Absolute Maximum Ratings

Item	Symbol	Min	Typ	Max	Unit
Operating Temperature	T _{OP}	-20	—	+70	°C
Storage Temperature	T _{ST}	-30	—	+80	°C
Power Supply Voltage	V _{DD}	-0.3	—	3.6	V
Power supply voltage (VDD standard)	V ₀ , V _{OUT}	-0.3	—	14.5	V
Power supply voltage (VDD standard)	V ₁ , V ₂ , V ₃ , V ₄	-0.3	—	V ₀ +0.3	V

Electrical Characteristics

Item	Symbol	Condition	Min.	Typ.	Max.	Unit
Supply Voltage For Logic	V _{DD} -V _{SS}	—	3.0	—	3.3	V
Supply Voltage For LCD	V _{OP}	T _a =-20°C	—	—	—	V
		T _a =25°C	8.9	9.1	9.3	V
		T _a =70°C	—	—	—	V
Input High Volt.	V _{IH}	—	0.8 V _{DD}	—	V _{DD}	V
Input Low Volt.	V _{IL}	—	V _{SS}	—	0.2 V _{DD}	V
Output High Volt.	V _{OH}	—	0.8 V _{DD}	—	V _{DD}	V
Output Low Volt.	V _{OL}	—	V _{SS}	—	0.2 V _{DD}	V
Supply Current	I _{DD}	V _{DD} =3.3V	—	—	2.0	mA

Interface Pin Function

Pin No.	Symbol	I/O	Description											
1	VDD	—	Power supply pin for logic.											
2	VSS	—	Ground pin, connected to 0V											
3	/CS1	I	Chip select input pin. Interface access is enabled when CS1B is “L” and CB2 is “H”. When chip is non-active (CS1B=“H” or CS2=“L”), D[7:0] pins are high impedance.											
4	CS2													
5	/RES	I	Hardware reset input pin. When RSTB is “L”, internal initialization is executed and the internal registers will be initialized.											
6	A0	I	It determines whether the access is related to data or command. A0=“H”: Indicates that signals on D[7:0] are display data. A0=“L”: Indicates that signals on D[7:0] are command.											
7	R/W	I	Read/Write execution control pin. When PSB is “H”,											
			C86	MPU Type	RWR	Description	H	6800 series	R/W	Read/Write control input pin. R/W=“H”: read. R/W=“L”: write.	L	8080 series	/WR	Write enable input pin. Signals on D[7:0] will be latched at the rising edge of /WR signal.
			C86	MPU Type	RWR	Description								
			H	6800 series	R/W	Read/Write control input pin. R/W=“H”: read. R/W=“L”: write.								
L	8080 series	/WR	Write enable input pin. Signals on D[7:0] will be latched at the rising edge of /WR signal.											
RWR is not used in serial interface and should fix to “H” by VDD.														
8	E	I	Read/Write execution control pin. When PSB is “H”,											
			C86	MPU Type	ERD	Description	H	6800 series	E	Read/Write control input pin. R/W=“H”: When E is “H”, D[7:0] are in output mode. R/W=“L”: Signals on D[7:0] are latched at the falling edge of E signal.	L	8080 series	/RD	Read enable input pin. When /RD is “L”, D[7:0] are in output mode.
			C86	MPU Type	ERD	Description								
			H	6800 series	E	Read/Write control input pin. R/W=“H”: When E is “H”, D[7:0] are in output mode. R/W=“L”: Signals on D[7:0] are latched at the falling edge of E signal.								
L	8080 series	/RD	Read enable input pin. When /RD is “L”, D[7:0] are in output mode.											
ERD is not used in serial interface and should fix to “H” by VDD.														
9-16	D0-D7	I/O	Data bus line											

17	C86	I	C86 selects the microprocessor type in parallel interface mode.		
			PSB	C86	Selected Interface
			“H”	“H”	Parallel 6800 Series MPU Interface
			“H”	“L ”	Parallel 8080 Series MPU Interface
			“L ”	“X”	Serial 4-Line SPI Interface
			Please refer to “APPLICATION NOTES” and “Microprocessor Interface” (Section 6) for detailed connection of the selected interface.		
18	P/S	I	PSB selects the interface type: Serial or Parallel.		

Contour Drawing

