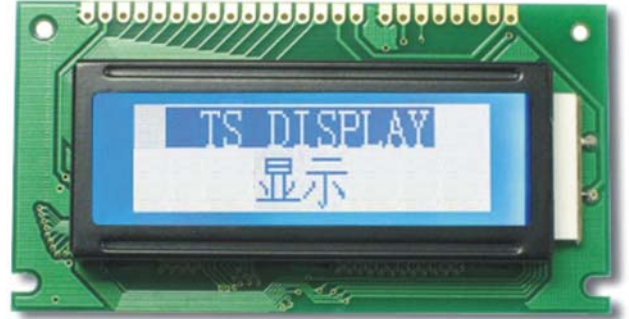


TSM12232Z Series

Display Feature

Item	Value
Structure	COB With Metal Frame
LCD Display Mode	STN-Blue,Negative,Transmissive
Viewing Angle	6H
Driving Method	1/32 duty, 1/5 bias
Backlight	White LED Backlight
Control/Driver IC	ST7920/ST7921



Mechanical Data

Item	Value
Outline	84.0 x 44.0 x 13.9Max.
Viewing Area	60.0 x 18.0
Active Area	48.76 x 14.36
Dot Pitch	0.4 x 0.45
Dot Size	0.36 x 0.41

Absolute Maximum

Item	MIN.	MAX.
Operating Voltage(V)	0	6.0
Operating Temperature(°C)	-20	+70
Storage Temperature(°C)	-30	+80

Electrical Characteristics

Item	Symbol	MIN.	TYP.	MAX
Operating Voltage(V)	VDD	4.7	5.0	5.3
Input High Voltage(V)	VIH	0.8V _{DD}	-	V _{DD}
Input Low Voltage(V)	VIL	V _{SS}	-	0.5
Operating Current(mA)	IDD	-	2.0	3.5
Forward Voltage(V)	Vf BL	-	5.0	-
Forward Current(mA)	If BL	-	45	60

Terminal Function(1~16 Parallel Interface)

No.	Pin Name	Descriptions	No.	Pin Name	Descriptions
1	VSS	Power Supply, (0V)	16	BLK	Backlight Power Supply Cathode
2	VDD	Positive Power Supply	17~24 Serial Interface		
3	V0	LCD Contrast Reference Supply	17	VSS	Power Supply, (0V)
4	RS	Register Select	18	VDD	Positive Power Supply
5	R/W	Read/write Signal	19	V0	LCD Contrast Reference Supply
6	E	Enable Trigger	20	SCLK	Serial Clock
7	DB0	Data Bus Line	21	SID	Serial Input Data
:	:		22	CS	Chip Select
14	DB7		23	BLA	Backlight Power Supply Anode
15	BLA		24	BLK	Backlight Power Supply Cathode

Outline Drawing

