

1. LCM Drawing

# LC2025

180.0±0.5  
 172.0±0.2  
 162.0±0.3  
 149.0±0.3  
 142.8  
 4.0±0.2  
 5.9±0.3  
 12.4±0.3  
 1.6±0.2  
 17.46  
 5.08  
 1.5  
 4-φ1.0 HOLE  
 4-φ3.5 HOLE  
 2-φ1.0 Hole  
 max 5.6  
 Note 2  
 rmax H

4.0±0.2  
 5.9±0.3  
 12.4±0.3  
 1.6±0.2  
 17.46  
 5.08  
 1.5  
 4-φ1.0 HOLE  
 4-φ3.5 HOLE  
 2-φ1.0 Hole  
 max 5.6  
 Note 2  
 rmax H

HJST Post:BB3B-XH-A  
 Base Housing:HP-3  
 VV-1 Silicone Rubber  
 3KV-DC 150°C  
 16  
 2  
 2.5px2=5  
 BL1  
 BL2  
 120.0±10  
 2.54  
 CCFT DIRECTLY

LCD PANEL  
 DRIVER  
 DRIVER  
 TO LSI  
 B/L  
 E  
 R/W  
 RS  
 DB0~7  
 VSS  
 VDD  
 VEE  
 VO  
 BL1  
 BL2

MODULE	H
EL	5.2
LED SMT	11.7
CCFT DIRECTLY	16.3

UNIT:mm

LC 2025	INTERFACE PIN	1	2	3	4	5	6	7	~14	15	16	BL1	BL2
( EL )	*( NV )	** ( TC )	*** ( NT )	VSS	VDD	Vo	RS	R/W	E	DB0~DB7	NC(VEE)	NC	EL
( LED-SMT )	*( NV )	** ( TC )	*** ( NT )	ditto									
( CCFT DIRECTLY )	*( NV )	** ( TC )	*** ( NT )	ditto									

\* Negative Voltage Built in ,pin 3,pin 15 to external contrast VR.  
 \*\* Temperature Compensation Built in,Pin 3 N/C;Pin 17(V<sub>EE</sub>) To External Voltage  
 \*\*\* Negative Voltage & Temperature Compensation Built in, Both pin 3 & pin 15N/C .

2. Electrical spec

**LC2025**

20 Characters X 2 Lines 1/16  
DUTY 5x8Font

**ELECTRICAL CHARACTERISTICS**

T<sub>a</sub>= 25°C V<sub>DD</sub>=5.0+-0.25 v

Input "High" Voltage (V<sub>IH</sub>) 2.2 V min  
Input "Low " Voltage (V<sub>IL</sub>) 0.6 V max

**APPLICABLE FOR -LEP**

	<u>FSTN</u>		<u>STN</u>		<u>TN</u>	
	<u>TEMPERATURE</u>		<u>TEMPERATURE</u>		<u>TEMPERATURE</u>	
	<u>NORMAL</u>	<u>WIDE</u>	<u>NORMAL</u>	<u>WIDE</u>	<u>NORMAL</u>	<u>WIDE</u>
Supply Current, (I <sub>DD</sub> )Typ.,mA	3	N/A	3	3	3	N/A
Recommend LCD drive Voltage: (V <sub>DD</sub> -V <sub>O</sub> )at T <sub>a</sub> = -20°C,Volts	N/A	N/A	N/A	7.9	N/A	N/A
T <sub>a</sub> = 0°C	4.9	N/A	4.9	7.5	4.9	N/A
T <sub>a</sub> = 25°C	4.6	N/A	4.6	7.2	4.5	N/A
T <sub>a</sub> = 50°C	4.1	N/A	4.1	6.8	4.2	N/A
T <sub>a</sub> = 70°C	N/A	N/A	N/A	6.4	N/A	N/A

**ABSOLUTE MAXIMUM RATINGS**

	<u>NORMAL</u>		<u>WIDE TEMPERATURE</u>	
	<u>MIN</u>	<u>MAX</u>	<u>MIN</u>	<u>MAX</u>
Input Voltage (V <sub>I</sub> ) V	0	V <sub>DD</sub>	0	V <sub>DD</sub>
Supply for Logic (V <sub>DD</sub> -V <sub>SS</sub> ) V	0	7	0	7
Supply for LCD (V <sub>DD</sub> -V <sub>O</sub> ) V	0	10	0	10
Operating Temperature T <sub>OP</sub> , °C	0	+50	-20	+70
Storage Temperature T <sub>ST</sub> , °C	-20	+70	-30	+80

**OPTION**

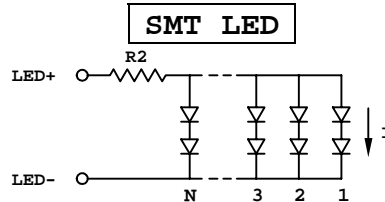
**BACKLIGHT**

- BEXX -- EL
- BLSXX -- LED SMT
- BFSXX -- CCFT DIRECT

**INPUT VOLTAGE & CURRENT**

100 V<sub>RMS</sub> (400-800) Hz; 13.0mA  
+ 5V DC; 560 mA R2= 1.8 Ohm 2 W  
250 VRMS ; 6.0 mA

\*R2:Suggest BL current limit resistor on customer board



N = 56 , I = 10 mA

----- Single +5V for wide temperature operation -----

**SINGLE +5V OPERATION** only

- VNV
- V<sub>EE</sub> self-generate --

**TEMPERATURE COMPENSATION**

- VNVTC (-VNT)
- V<sub>DD</sub>-V<sub>O</sub> self-generate & compensated