



2. Electrical spec

**LC1613**

16 Characters X 1 Lines  
1/8 DUTY 5x8 Font

**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 -LNA**

	<u>TN</u>		<u>STN</u>	
	<u>TEMPERATURE</u>		<u>TEMPERATURE</u>	
	<u>NORMAL</u>	<u>WIDE</u>	<u>NORMAL</u>	<u>WIDE</u>
Supply Current, (I <sub>DD</sub> ) Typ., mA	N/A	N/A	1	1
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	8.4
T <sub>a</sub> = 0°C	N/A	N/A	4.9	7.6
T <sub>a</sub> = 25°C	N/A	N/A	4.7	7.3
T <sub>a</sub> = 50°C	N/A	N/A	4.5	7.0
T <sub>a</sub> = 70°C	N/A	N/A	N/A	6.8

**ABSOLUTE MAXIMUM RATINGS**

	<u>NORMAL</u>		<u>WIDE</u>	
	<u>TEMPERATURE</u>		<u>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

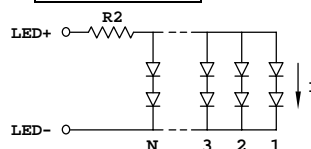
**INPUT VOLTAGE & CURRENT**

100 V<sub>RMS</sub> (400-800) Hz; 3.4mA

+ 5V DC; 460 mA R2= 2 Ohm 1 W

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

**SMT LED**



N= 46 , 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