

2. Electrical spec

LC4027

40 Characters X 2 Lines
1/16 DUTY 5x8 Font

ELECTRICAL CHARACTERISTICS

$T_a = 25^{\circ}\text{C}$ $V_{DD} = 5.0 \pm 0.25 \text{ v}$

Input "High" Voltage (V_{IH}) 2.2 V min

Input "Low " Voltage (V_{IL}) 0.6 V max

**APPLICABLE FOR -LHI(TN)
-LOP(STN)**

	<u>TN</u>		<u>STN</u>	
	<u>TEMPERATURE</u>	<u>TEMPERATURE</u>	<u>TEMPERATURE</u>	<u>TEMPERATURE</u>
	<u>NORMAL</u>	<u>WIDE</u>	<u>NORMAL</u>	<u>WIDE</u>
Supply Current, (I_{DD})Typ., mA	3	3	3	3
Recommend LCD drive Voltage:				
$(V_{DD}-V_O)$ at $T_a = -20^{\circ}\text{C}$, Volts	N/A	9.9	N/A	8.7
$T_a = 0^{\circ}\text{C}$	N/A	9.3	4.9	8.1
$T_a = 25^{\circ}\text{C}$	4.6	8.6	4.6	7.5
$T_a = 50^{\circ}\text{C}$	N/A	7.9	4.2	6.8
$T_a = 70^{\circ}\text{C}$	N/A	7.2	N/A	6.1

ABSOLUTE MAXIMUM RATINGS

	<u>NORMAL</u>		<u>WIDE</u>	
	<u>TEMPERATURE</u>	<u>TEMPERATURE</u>	<u>TEMPERATURE</u>	<u>TEMPERATURE</u>
	<u>MIN</u>	<u>MAX</u>	<u>MIN</u>	<u>MAX</u>
Input Voltage (V_I) V	0	V_{DD}	0	V_{DD}
Supply for Logic ($V_{DD}-V_{SS}$) V	0	7	0	7
Supply for LCD ($V_{DD}-V_O$) V	0	10	0	10
Operating Temperature T_{OP} , $^{\circ}\text{C}$	0	+50	-20	+70
Storage Temperature T_{ST} , $^{\circ}\text{C}$	-20	+70	-30	+80

OPTION

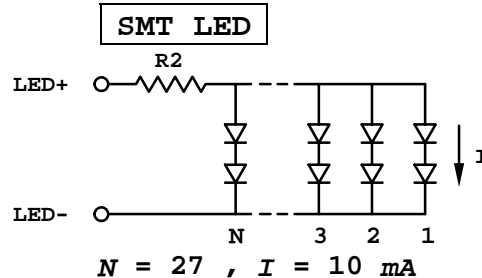
BACKLIGHT

- BEXX -- EL
- BLSXX -- LED SMT

INPUT VOLTAGE & CURRENT

100 V_{RMS} (400-800) Hz; 4.3mA
 + 5V DC; 270 mA $R_2 = 3.6 \text{ Ohm } 1/2 \text{ W}$

* R_2 : Suggest BL current limit resistor on customer board



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

SINGLE +5V OPERATION only

TEMPERATURE COMPENSATION

-- not available --

-- not available --

LC4027

40 Characters X 2 Lines
1/16 DUTY 5x8 Font

ELECTRICAL CHARACTERISTICS

$T_a = 25^{\circ}\text{C}$ $V_{DD} = 5.0 \pm 0.25 \text{ v}$

Input "High" Voltage (V_{IH}) 2.2 V min

Input "Low " Voltage (V_{IL}) 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_{DD})Typ., mA	3	3	3	3
Recommend LCD drive Voltage: ($V_{DD}-V_O$)at $T_a = -20^{\circ}\text{C}$, Volts	N/A	9.2	N/A	8.0
$T_a = 0^{\circ}\text{C}$	5.0	8.9	4.9	7.8
$T_a = 25^{\circ}\text{C}$	4.6	8.6	4.6	7.3
$T_a = 50^{\circ}\text{C}$	4.4	8.4	4.2	7.0
$T_a = 70^{\circ}\text{C}$	N/A	8.1	N/A	6.1

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_I) V	0	V_{DD}	0	V_{DD}
Supply for Logic ($V_{DD}-V_{SS}$) V	0	7	0	7
Supply for LCD ($V_{DD}-V_O$) V	0	10	0	10
Operating Temperature T_{OP} , $^{\circ}\text{C}$	0	+50	-20	+70
Storage Temperature T_{ST} , $^{\circ}\text{C}$	-20	+70	-30	+80

OPTION

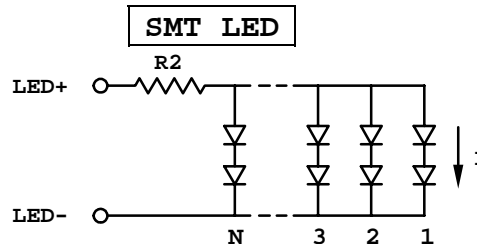
BACKLIGHT

- BEXX -- EL
- BLSXX -- LED SMT

INPUT VOLTAGE & CURRENT

100 V_{RMS} (400-800) Hz; 4.3mA
 + 5V DC; 270 mA $R_2 = 3.6 \text{ Ohm } 1/2 \text{ W}$

* R_2 : Suggest BL current limit resistor on customer board



$N = 27, I = 10 \text{ mA}$

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

SINGLE +5V OPERATION only

TEMPERATURE COMPENSATION

-- not available --

-- not available --

LC4027

40 Characters X 2 Lines
1/16 DUTY 5x8 Font

ELECTRICAL CHARACTERISTICS

$T_a = 25^\circ\text{C}$ $V_{DD} = 5.0 \pm 0.25 \text{ v}$

Input "High" Voltage (V_{IH})	2.2	V min
Input "Low" Voltage (V_{IL})	0.6	V max

APPLICABLE FOR -LNY

	<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_{DD})Typ., mA	N/A	N/A	3	3
Recommend LCD drive Voltage: ($V_{DD}-V_O$) at $T_a = -20^\circ\text{C}$, Volts	N/A	N/A	N/A	6.8
$T_a = 0^\circ\text{C}$	N/A	N/A	5.0	6.5
$T_a = 25^\circ\text{C}$	N/A	N/A	4.6	6.2
$T_a = 50^\circ\text{C}$	N/A	N/A	4.3	6.0
$T_a = 70^\circ\text{C}$	N/A	N/A	N/A	5.8

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_I) V	0	V_{DD}	0	V_{DD}
Supply for Logic ($V_{DD}-V_{SS}$) V	0	7	0	7
Supply for LCD ($V_{DD}-V_O$) V	0	10	0	10
Operating Temperature T_{OP} , $^\circ\text{C}$	0	+50	-20	+70
Storage Temperature T_{ST} , $^\circ\text{C}$	-20	+70	-30	+80

OPTION

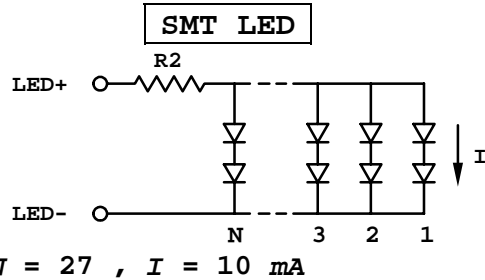
BACKLIGHT

- BEXX -- EL
- BLSXX -- LED SMT

INPUT VOLTAGE & CURRENT

100 V_{RMS} (400-800) Hz; 4.3mA
 + 5V DC; 270 mA $R_2 = 3.6 \text{ Ohm } 1/2 \text{ W}$

* R_2 : Suggest BL current limit resistor on customer board



$N = 27, I = 10 \text{ mA}$

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

SINGLE +5V OPERATION only

-- not available --

TEMPERATURE COMPENSATION

-- not available --