

2. Electrical spec

LC2421

24 Characters X 2 Lines
1/16 DUTY 5x8Font

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 -LOP

	<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	9.3	N/A	8.4
$T_a = 0^{\circ}\text{C}$	4.6	9.0	4.8	8.0
$T_a = 25^{\circ}\text{C}$	4.2	8.5	4.5	7.7
$T_a = 50^{\circ}\text{C}$	3.9	7.8	4.2	7.4
$T_a = 70^{\circ}\text{C}$	N/A	6.9	N/A	7.0

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

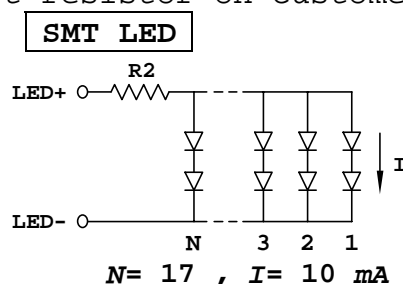
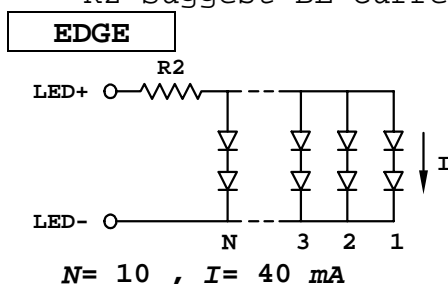
BACKLIGHT

- BEXX -- EL
- BLEXX -- LED EDGE
- BLSXX -- LED SMT

INPUT VOLTAGE & CURRENT

100 V_{RMS} (400-800) Hz; 2.6mA
 + 5V DC; 400 mA $R_2 = 2 \text{ Ohm } 1/2 \text{ W}$
 + 5V DC; 170 mA $R_2 = 5.6 \text{ Ohm } 1/2 \text{ W}$

* R_2 : Suggest BL current limit resistor on customer board



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

SINGLE +5V OPERATION only

-- not available --

TEMPERATURE COMPENSATION

-- not available --

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ELECTRICAL CHARACTERISTICS

T_a = 25°C V_{DD} = 5.0 ± 0.25 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°C, Volts	N/A	N/A	N/A	7.0
T _a = 0°C	N/A	N/A	4.8	6.7
T _a = 25°C	N/A	N/A	4.2	6.4
T _a = 50°C	N/A	N/A	4.0	6.1
T _a = 70°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} , °C	0	+50	-20	+70
Storage Temperature T _{ST} , °C	-20	+70	-30	+80

OPTION

BACKLIGHT

- BEXX -- EL
- BLEXX -- LED EDGE
- BLSXX -- LED SMT

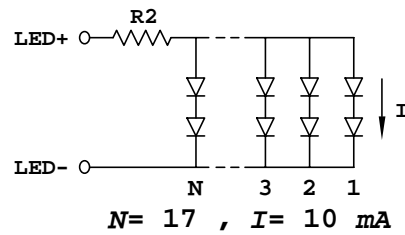
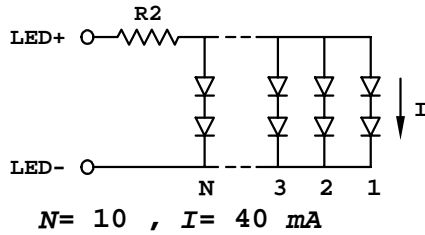
INPUT VOLTAGE & CURRENT

100 V_{RMS} (400-800) Hz; 2.6mA
 + 5V DC; 400 mA R2= 2 Ohm 1/2 W
 + 5V DC; 170 mA R2= 5.6 Ohm 1/2 W

*R2: Suggest BL current limit resistor on customer board

EDGE

SMT LED



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

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	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	7.6
$T_a = 0^\circ\text{C}$	N/A	N/A	4.3	7.5
$T_a = 25^\circ\text{C}$	N/A	N/A	4.3	7.5
$T_a = 50^\circ\text{C}$	N/A	N/A	4.2	7.5
$T_a = 70^\circ\text{C}$	N/A	N/A	N/A	7.2

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

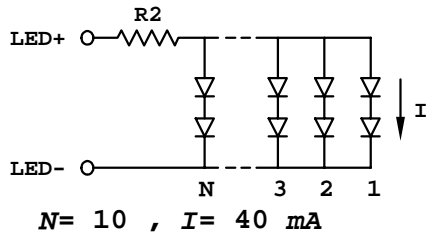
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INPUT VOLTAGE & CURRENT

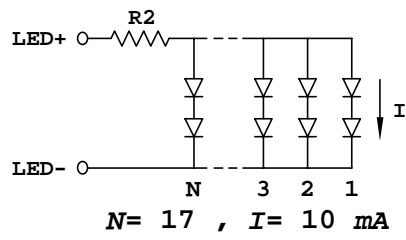
100 V_{RMS} (400-800) Hz; 2.6mA
 + 5V DC; 400 mA R2= 2 Ohm 1/2 W
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