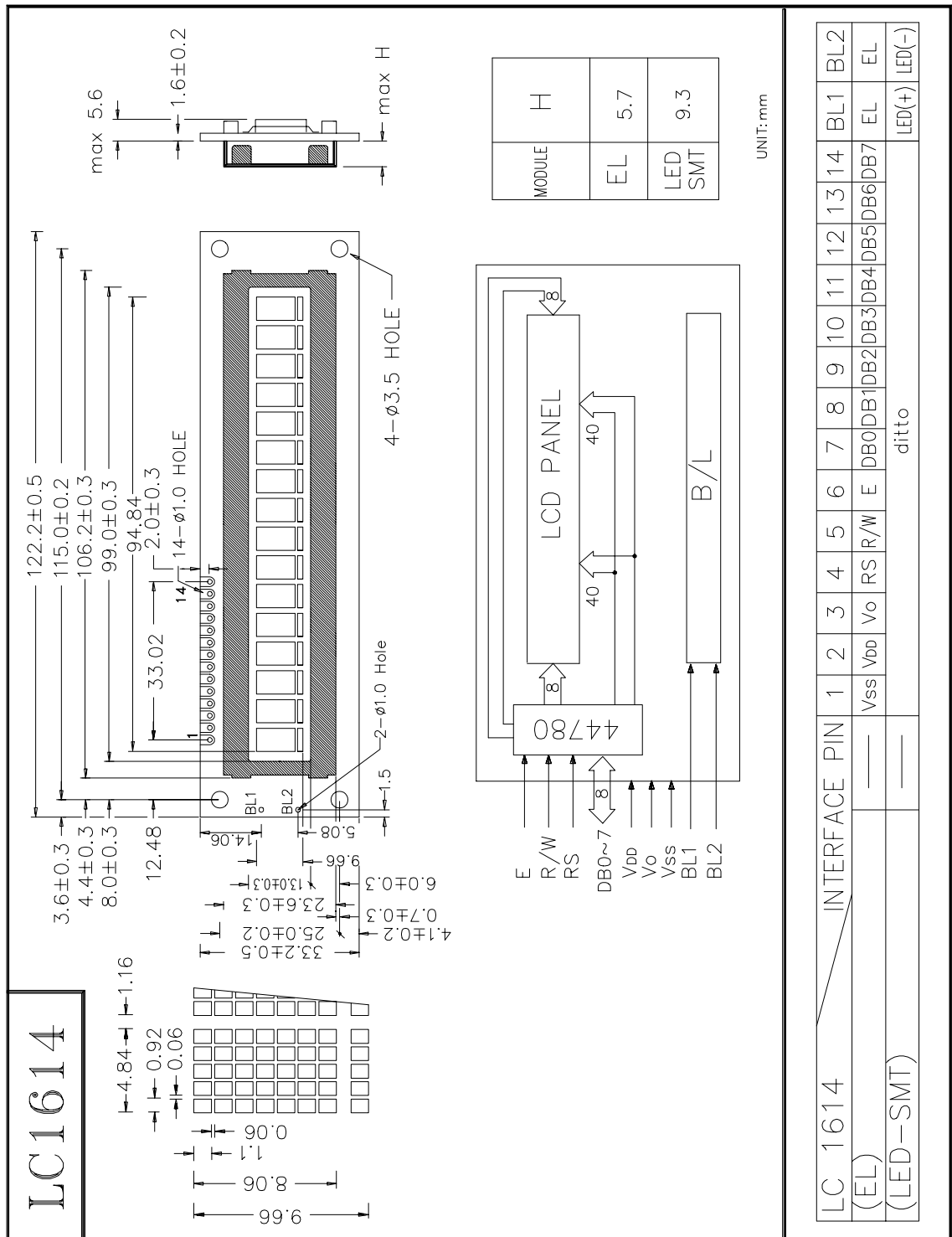


1. LCM Drawing



2. Electrical spec

LC1614

16 Characters X 1 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 -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	1	N/A
Recommend LCD drive Voltage: ($V_{DD}-V_O$) at $T_a = -20^{\circ}\text{C}$, Volts	N/A	N/A	N/A	N/A
$T_a = 0^{\circ}\text{C}$	N/A	N/A	4.7	N/A
$T_a = 25^{\circ}\text{C}$	N/A	N/A	4.4	N/A
$T_a = 50^{\circ}\text{C}$	N/A	N/A	4.1	N/A
$T_a = 70^{\circ}\text{C}$	N/A	N/A	N/A	N/A

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

INPUT VOLTAGE &

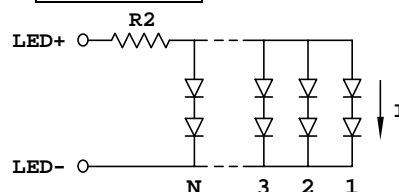
CURRENT

-BEXX -- EL
 -BLSXX -- LED SMT

100 V_{RMS} (400-800) Hz; 2.3mA
 + 5V DC; 190 mA R2= 4.7 Ohm 1/2 W

*R2: Suggest BL current limit resistor on customer board

SMT LED



$N = 19, I = 10 \text{ mA}$

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

SINGLE +5V OPERATION only

TEMPERATURE COMPENSATION

-- not available --

-- not available --

LC1614

16 Characters X 1 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 -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	1	1	1	N/A
Recommend LCD drive Voltage: ($V_{DD}-V_O$)at $T_a = -20^{\circ}\text{C}$,Volts	N/A	9.8	N/A	N/A
$T_a = 0^{\circ}\text{C}$	5.0	9.3	4.1	N/A
$T_a = 25^{\circ}\text{C}$	4.6	8.8	3.9	N/A
$T_a = 50^{\circ}\text{C}$	4.3	8.3	3.7	N/A
$T_a = 70^{\circ}\text{C}$	N/A	7.9	N/A	N/A

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

INPUT VOLTAGE & CURRENT

-BEXX -- EL

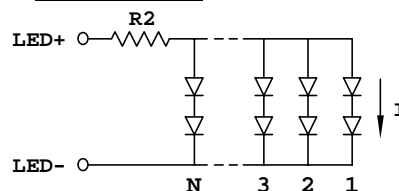
-BLSXX -- LED SMT

100 V_{RMS} (400-800) Hz; 2.3mA

+ 5V DC; 190 mA $R_2 = 4.7 \text{ Ohm } 1/2 \text{ W}$

* R_2 : Suggest BL current limit resistor on customer board

SMT LED



$N = 19$, $I = 10 \text{ mA}$

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

SINGLE +5V OPERATION only

-- not available --

TEMPERATURE COMPENSATION

-- not available --

LC1614

16 Characters X 1 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 -LEP

	<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	1	1	1	1
Recommend LCD drive Voltage: ($V_{DD}-V_O$)at $T_a = -20^{\circ}\text{C}$,Volts	N/A	8.8	N/A	7.5
$T_a = 0^{\circ}\text{C}$	5.0	8.4	4.7	7.2
$T_a = 25^{\circ}\text{C}$	4.8	8.1	4.4	6.9
$T_a = 50^{\circ}\text{C}$	4.6	7.7	4.1	6.6
$T_a = 70^{\circ}\text{C}$	N/A	7.4	N/A	6.3

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 INPUT VOLTAGE & CURRENT

-BEXX -- EL

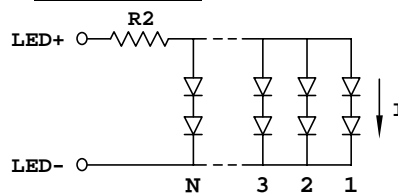
-BLSXX -- LED SMT

100 V_{RMS} (400-800) Hz; 2.3mA

+ 5V DC; 190 mA $R_2 = 4.7 \text{ Ohm } 1/2 \text{ W}$

* R_2 : Suggest BL current limit resistor on customer board

SMT LED



$N = 19, I = 10 \text{ mA}$

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

SINGLE +5V OPERATION only

-- not available --

TEMPERATURE COMPENSATION

-- not available --