

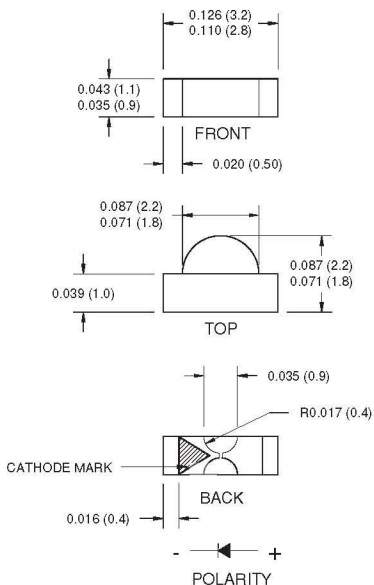


# SURFACE MOUNT LED LAMP RIGHT ANGLE

Low  $V_F$  Blue

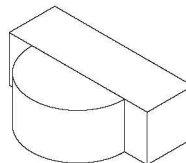
QTLP610CEBTR

## PACKAGE DIMENSIONS



### NOTE:

Dimensions for all drawings are in inches (mm).  
Tolerance is  $\pm 0.1$ mm unless otherwise noted.



## APPLICATIONS

- LCD edge-lighting
- Edge card lighting

## DESCRIPTION

This right angle surface mount chip LED emits light in the lateral direction. Small size and wide viewing angle make this LED an ideal choice for edge-lighting LCD displays. This device utilizes an InGaN/Sapphire blue LED.

## FEATURES

- Small footprint - 3.0(L) X 2.0(W) X 1.0(H) mm
- Wide viewing angle of  $120^\circ$
- Water clear optics
- Available in 0.315" (8mm) width tape on 7" (178mm) diameter reel; 2,000 units per reel



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### ABSOLUTE MAXIMUM RATINGS ( $T_A = 25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Rating	Unit
Operating Temperature	$T_{OPR}$	-40 to +85	$^\circ\text{C}$
Storage Temperature	$T_{STG}$	-40 to +90	$^\circ\text{C}$
Lead Soldering Time	$T_{SOL}$	260 for 5 sec	$^\circ\text{C}$
Continuous Forward Current	$I_F$	30	mA
Peak Forward Current ( $f = 1.0 \text{ KHz}$ , Duty Factor = 1/10)	$I_{FM}$	100	mA
Reverse Voltage	$V_R$	5	V
Power Dissipation	$P_D$	80	mW

### ELECTRICAL / OPTICAL CHARACTERISTICS ( $T_A = 25^\circ\text{C}$ )

Part Number	QTLP610CEBTR	Condition
Luminous Intensity (mcd)		
Bin I1	8 - 16	$I_F = 5 \text{ mA}$
Bin I2	13 - 26	
Forward Voltage (V)		
Bin V1	2.75 - 2.95	$I_F = 5 \text{ mA}$
Bin V2	2.95 - 3.15	
Dominant Wavelength (nm)		
Bin W2	470 - 475	$I_F = 5 \text{ mA}$
Bin W3	475 - 480	
Spectral Line Half Width (nm)	35	$I_F = 5 \text{ mA}$
Viewing Angle ( $^\circ$ )	120	$I_F = 5 \text{ mA}$
Reverse Current ( $\mu\text{A}$ )	50 max	$V_R = 5\text{V}$

Tolerance: Luminous Intensity =  $\pm 11\%$   
Forward Voltage =  $\pm 0.1\text{V}$   
Wavelength =  $\pm 1\text{nm}$



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## TYPICAL PERFORMANCE CURVES

Fig. 1 Forward Current vs. Forward Voltage

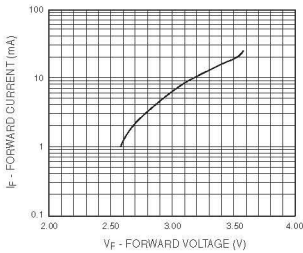


Fig. 2 Relative Luminous Intensity vs. DC Forward Current

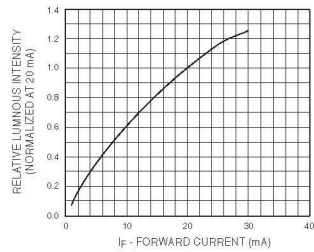


Fig. 3 Relative Intensity vs. Peak Wavelength

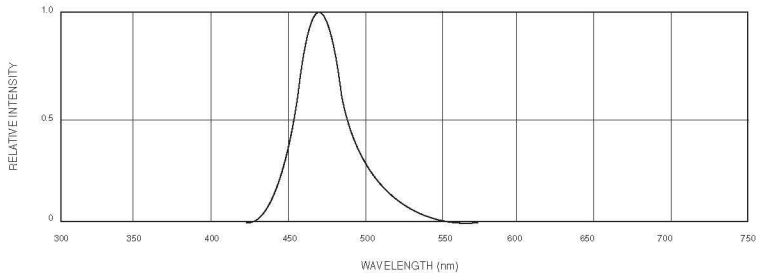


Fig.4 Radiation Diagram

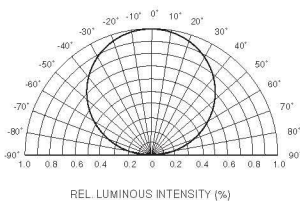
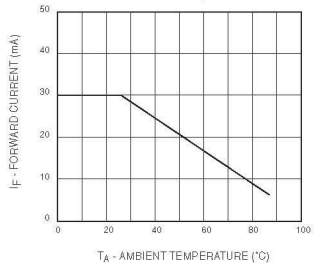


Fig.5 Maximum Forward Current vs. Ambient Temperature



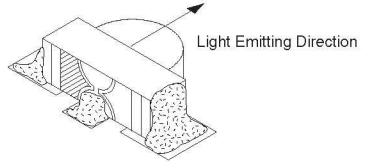
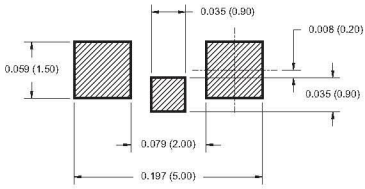


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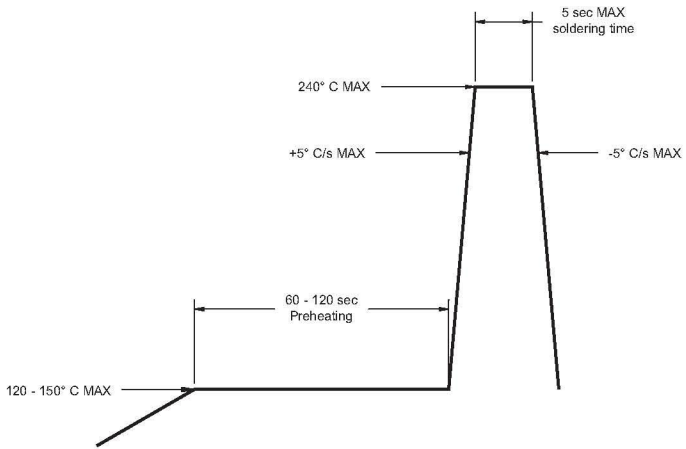
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## RECOMMENDED PRINTED CIRCUIT BOARD PATTERN



Mounting Example

## RECOMMENDED IR REFLOW SOLDERING PROFILE



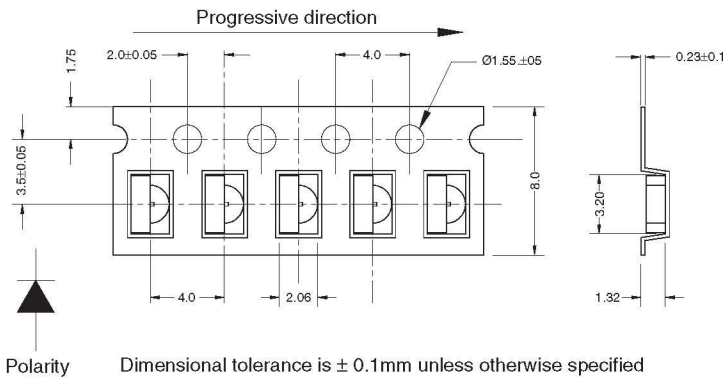
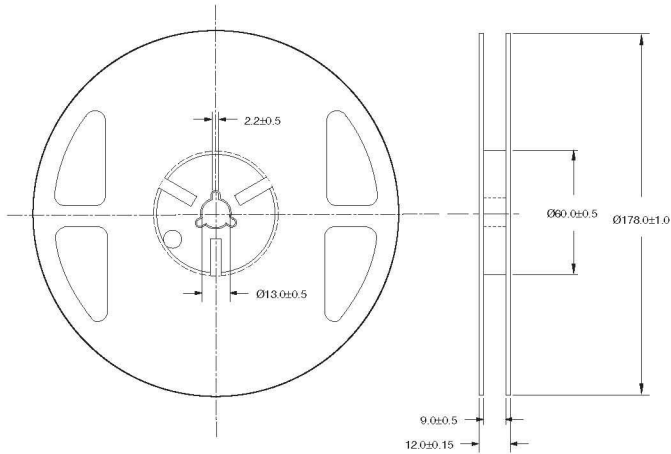


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## TAPE AND REEL DIMENSIONS



Polarity

Dimensional tolerance is  $\pm 0.1$ mm unless otherwise specified

Angle:  $\pm 0.5$

Unit: mm



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## RIGHT ANGLE

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