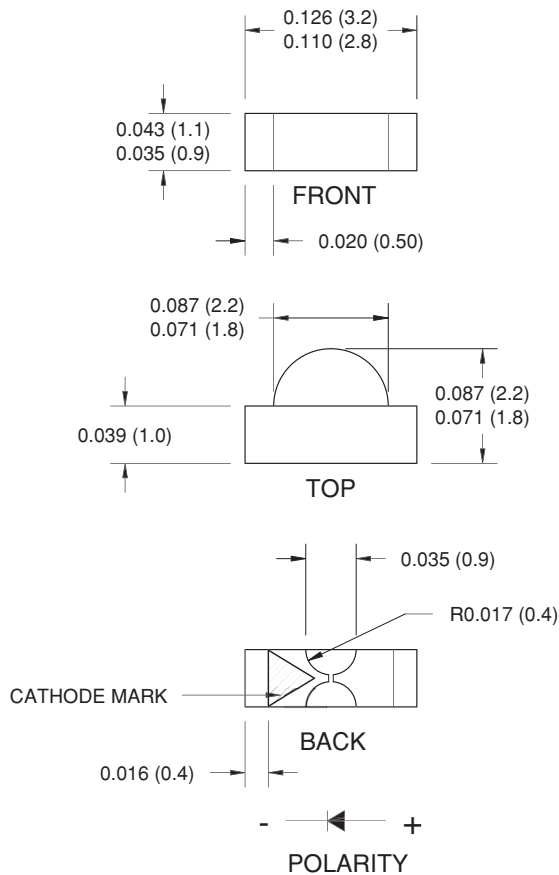


Low  $V_F$  Blue

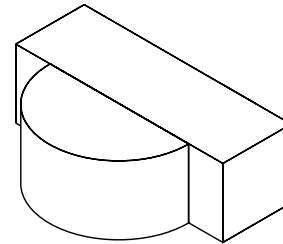
QTLP610CEBTR

### 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°
- Water clear optics
- Available in 0.315" (8mm) width tape on 7" (178mm) diameter reel; 2,000 units per reel

**Low  $V_F$  Blue**

**QTLP610CEBTR**

**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

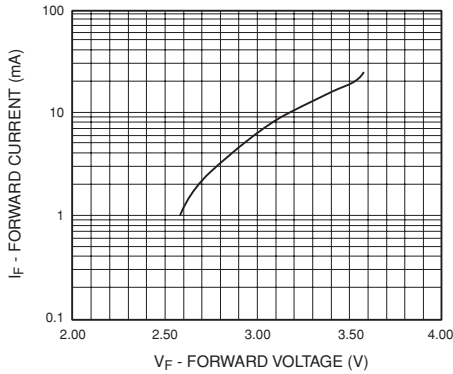
**ELECTRICAL / OPTICAL CHARACTERISTICS** ( $T_A = 25^\circ\text{C}$ )

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	$V_R = 5\text{V}$

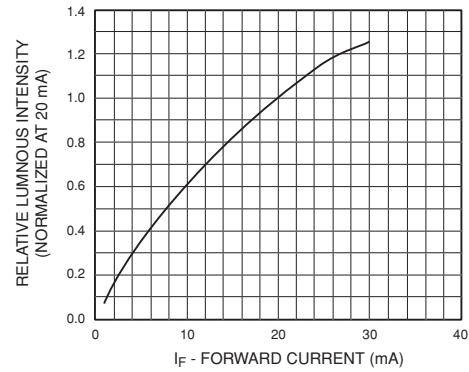
Tolerance: Luminous Intensity =  $\pm 11\%$   
 Forward Voltage =  $\pm 0.1\text{V}$   
 Wavelength =  $\pm 1\text{nm}$

**TYPICAL PERFORMANCE CURVES**

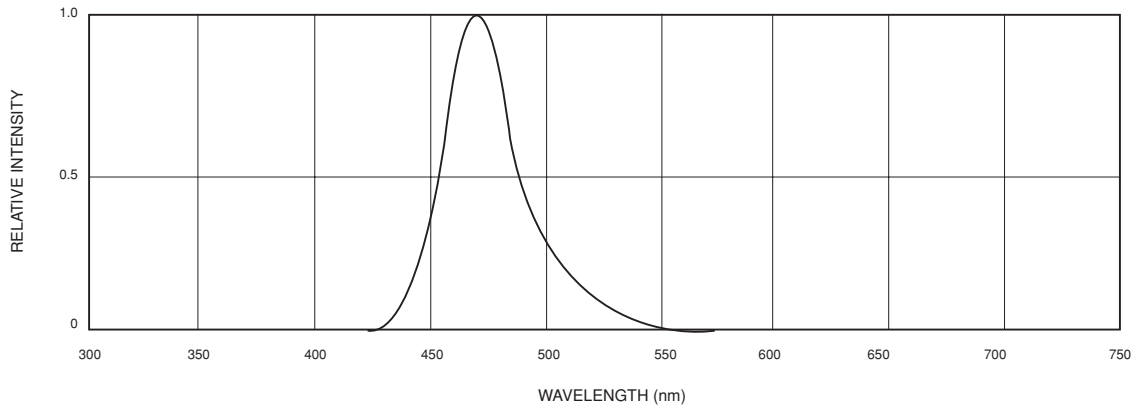
**Fig. 1 Forward Current vs. Forward Voltage**



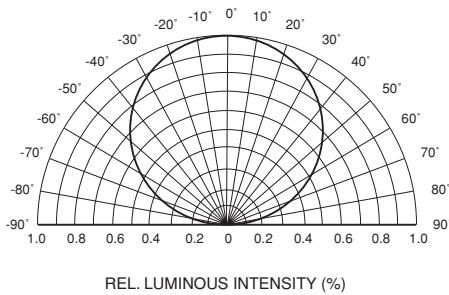
**Fig. 2 Relative Luminous Intensity vs. DC Forward Current**



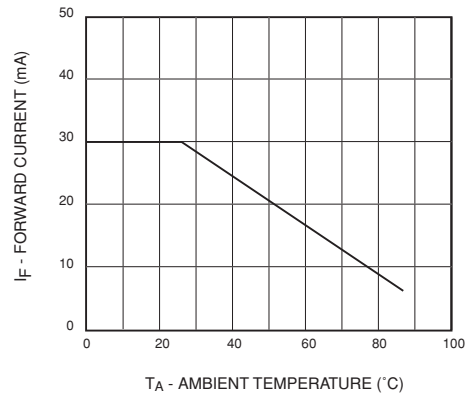
**Fig. 3 Relative Intensity vs. Peak Wavelength**



**Fig.4 Radiation Diagram**



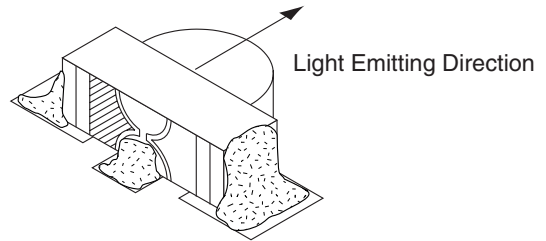
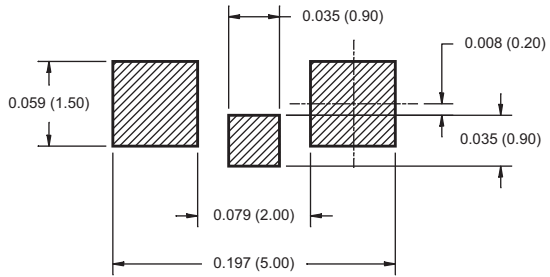
**Fig.5 Maximum Forward Current vs. Ambient Temperature**



**Low  $V_F$  Blue**

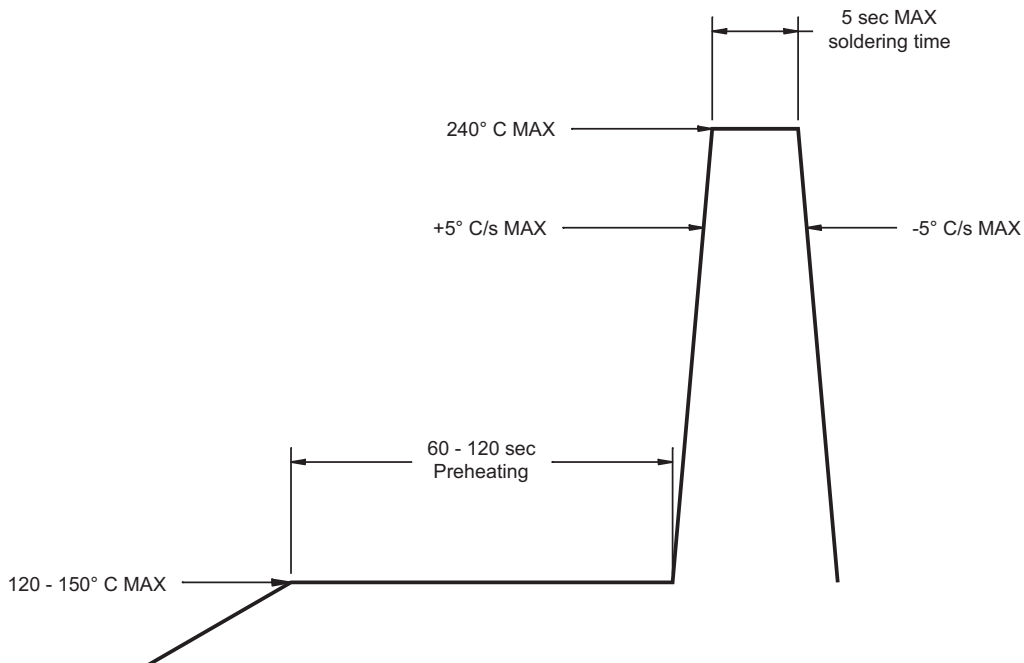
**QTLP610CEBTR**

**RECOMMENDED PRINTED CIRCUIT BOARD PATTERN**



Mounting Example

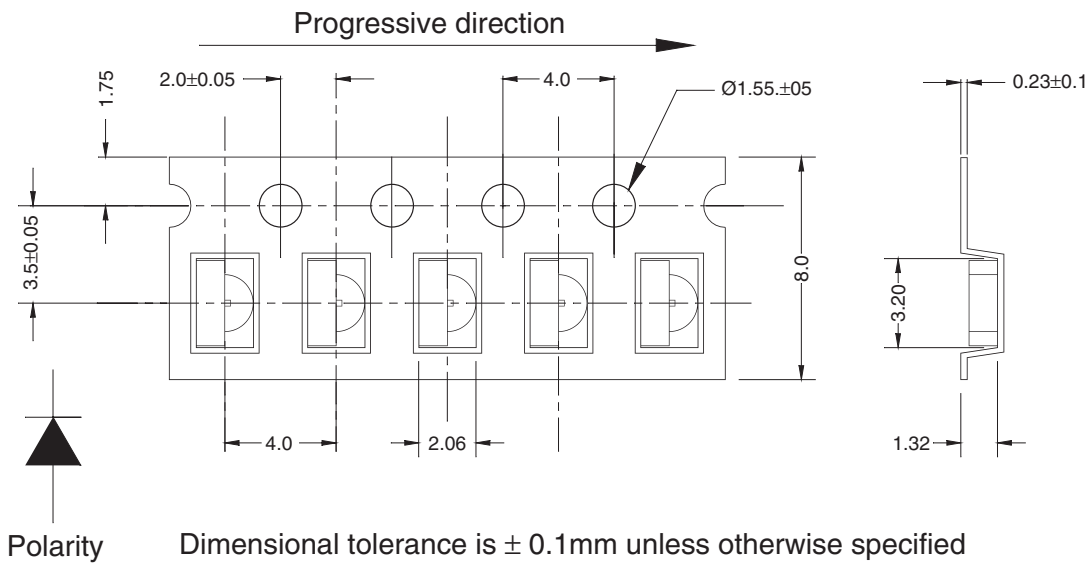
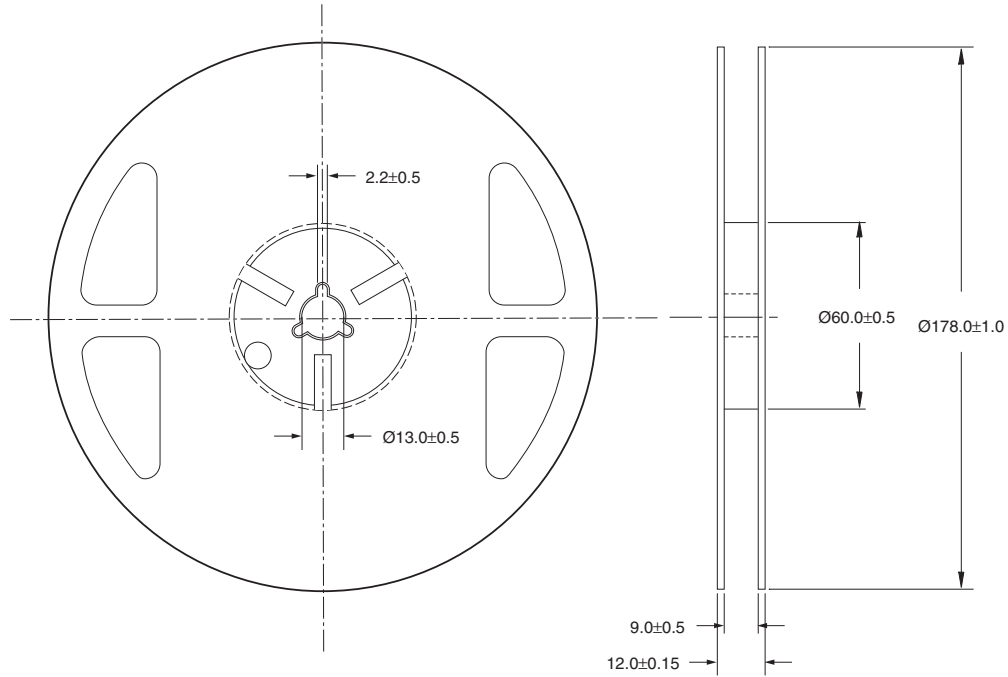
**RECOMMENDED IR REFLOW SOLDERING PROFILE**



**Low  $V_F$  Blue**

**QTLP610CEBTR**

**TAPE AND REEL DIMENSIONS**



Polarity

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

Angle:  $\pm 0.5$

Unit: mm

---

**Low  $V_F$  Blue**

**QTLP610CEBTR**

---

**DISCLAIMER**

FAIRCHILD SEMICONDUCTOR RESERVES THE RIGHT TO MAKE CHANGES WITHOUT FURTHER NOTICE TO ANY PRODUCTS HEREIN TO IMPROVE RELIABILITY, FUNCTION OR DESIGN. FAIRCHILD DOES NOT ASSUME ANY LIABILITY ARISING OUT OF THE APPLICATION OR USE OF ANY PRODUCT OR CIRCUIT DESCRIBED HEREIN; NEITHER DOES IT CONVEY ANY LICENSE UNDER ITS PATENT RIGHTS, NOR THE RIGHTS OF OTHERS.

**LIFE SUPPORT POLICY**

FAIRCHILD'S PRODUCTS ARE NOT AUTHORIZED FOR USE AS CRITICAL COMPONENTS IN LIFE SUPPORT DEVICES OR SYSTEMS WITHOUT THE EXPRESS WRITTEN APPROVAL OF THE PRESIDENT OF FAIRCHILD SEMICONDUCTOR CORPORATION. As used herein:

1. Life support devices or systems are devices or systems which, (a) are intended for surgical implant into the body, or (b) support or sustain life, and (c) whose failure to perform when properly used in accordance with instructions for use provided in the labeling, can be reasonably expected to result in a significant injury of the user.
2. A critical component in any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.