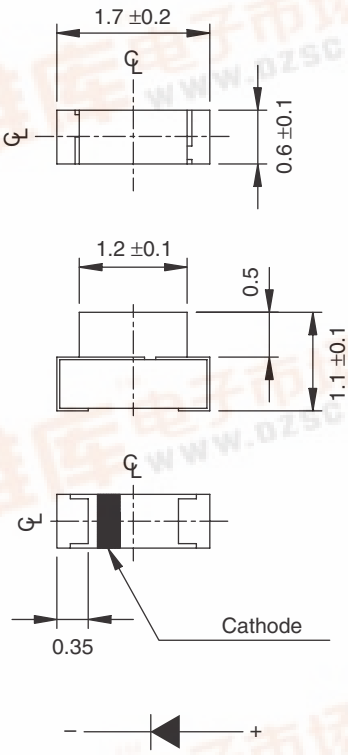
FAIRCHILD SEMICONDUCTOR®

# SURFACE MOUNT LED LAMP

## PRELIMINARY RIGHT ANGLE

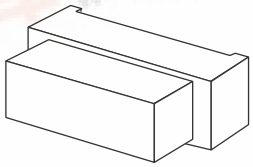
## Low $V_F$ Blue QTLP613C-EB

### PACKAGE DIMENSIONS




NOTE:

Dimensions for all drawings are in millimeters.



### APPLICATIONS

- LCD edge-lighting
- Edge card lighting

### DESCRIPTION

This right angle surface mount chip LED emits light in the lateral direction. Miniature 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

- Miniature footprint - 1.7 (L) X 1.1 (W) X 0.6(H) mm
- Low $V_F$
- Wide viewing angle of 140°
- 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°C unless otherwise specified) | | | |
|---|---|---|---|
| **Parameter** | **Symbol** | **Rating** | **Unit** |
| Operating Temperature | $T_{OPR}$ | -40 to +85 | °C |
| Storage Temperature | $T_{STG}$ | -40 to +90 | °C |
| Lead Soldering Time | $T_{SOL}$ | 260 for 5 sec | °C |
| Continuous Forward Current | $I_F$ | 30 | mA |
| Peak Forward Current (f = 1.0 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°C) | | |
|---|---|---|
| **Part Number** | **QTLP613C-EB** | **Condition** |
| Luminous Intensity (mcd) | | |
| Bin I1 | 8 - 16 | $I_F$ = 5 mA |
| Bin I2 | 13 - 26 | |
| Forward Voltage (V) | | |
| Bin V1 | 2.75 - 2.95 | $I_F$ = 5 mA |
| Bin V2 | 2.95 - 3.15 | |
| Dominant Wavelength (nm) | | |
| Bin W1 | 465 - 470 | $I_F$ = 5 mA |
| Bin W2 | 470 - 475 | |
| Spectral Line Half Width (nm) | 35 | $I_F$ = 5 mA |
| Viewing Angle (°) | 140 | $I_F$ = 5 mA |

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### TYPICAL PERFORMANCE CURVES

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

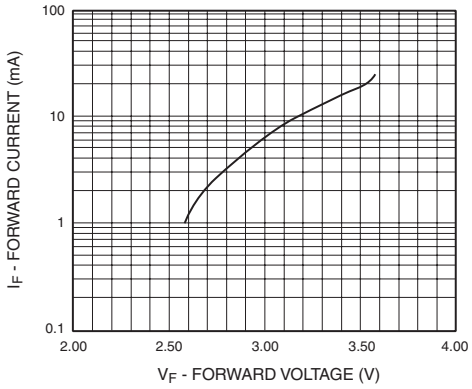



**Fig. 2 Relative Luminous Intensity vs. DC Forward Current**

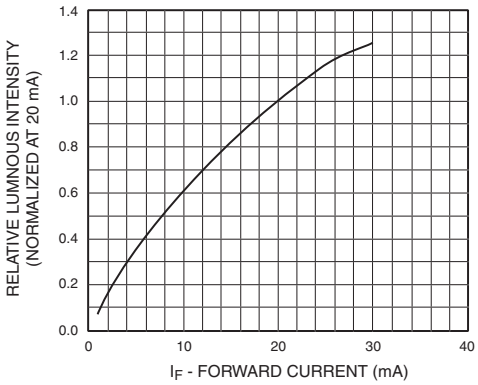



**Fig. 3 Relative Intensity vs. Peak Wavelength**

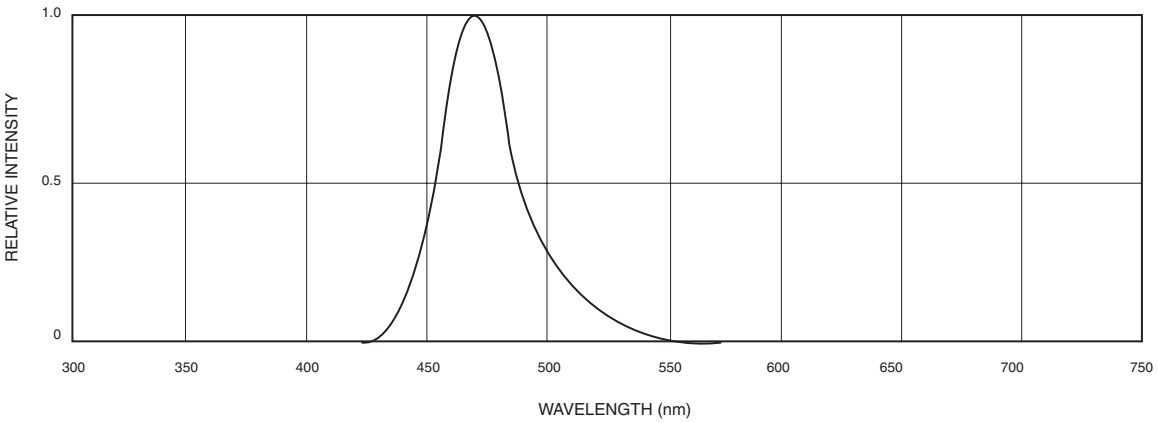



**Fig.4 Radiation Diagram**

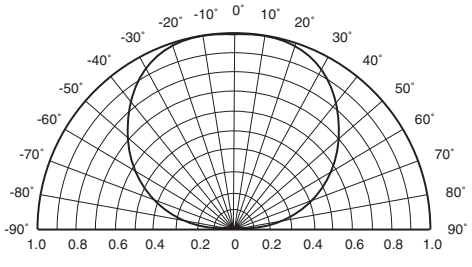
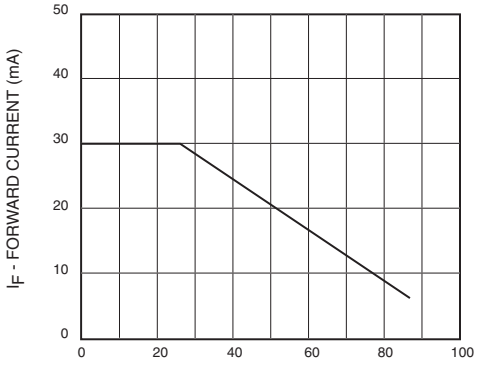



**Fig.5 Maximum Forward Current vs. Ambient Temperature**



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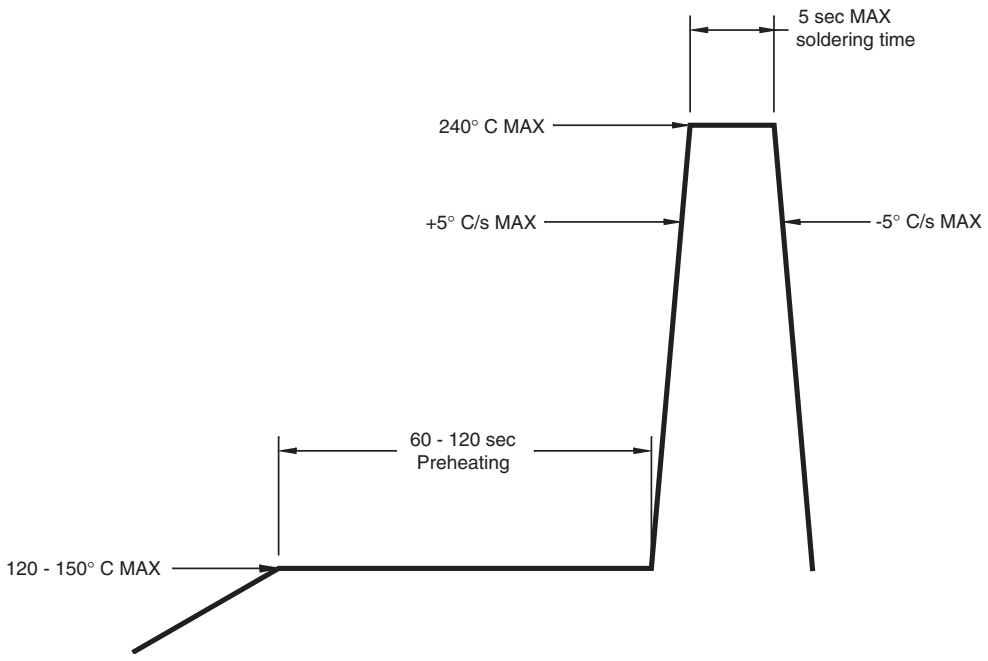
### RECOMMENDED PRINTED CIRCUIT BOARD PATTERN

### RECOMMENDED IR REFLOW SOLDERING PROFILE



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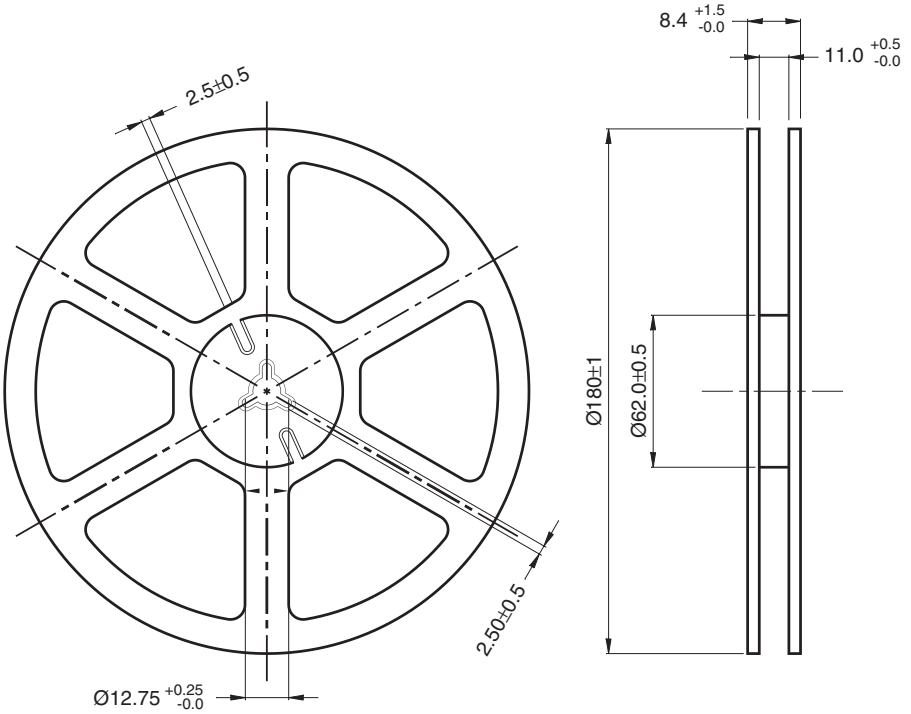
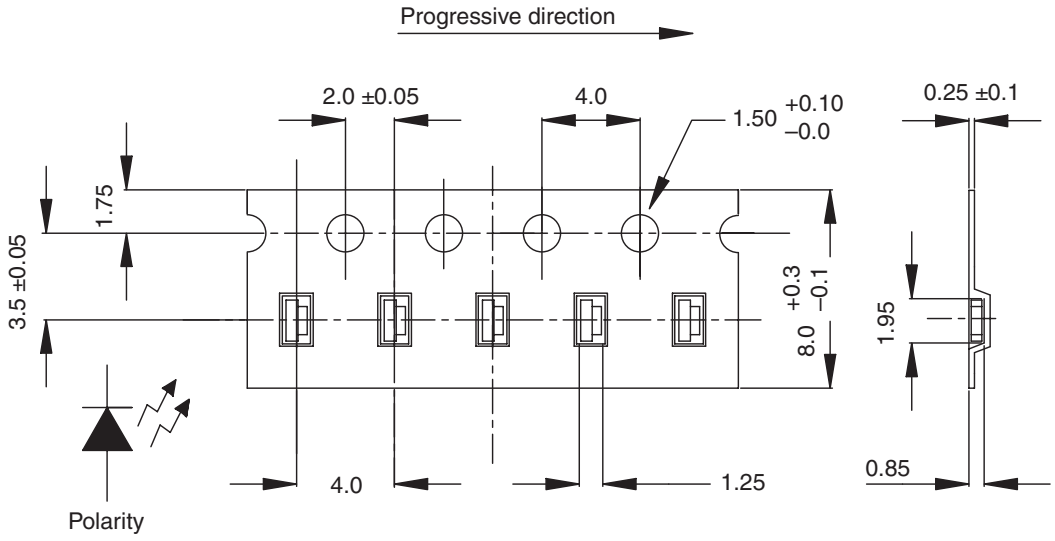
### TAPE AND REEL DIMENSIONS



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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.