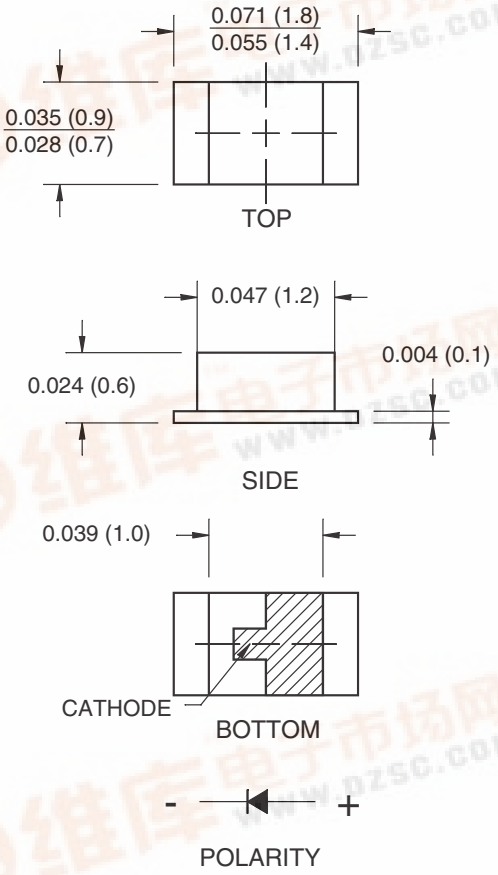
FAIRCHILD SEMICONDUCTOR®

# SURFACE MOUNT LED LAMP

## 0603 (0.6 mm Height)

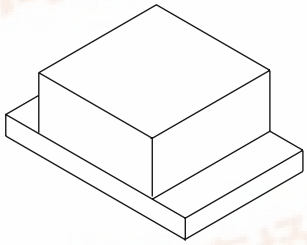
## Low $V_F$ Blue — QTLP601C-EB

### PACKAGE DIMENSIONS




NOTE:

Dimensions for all drawings are in inches (mm).



### APPLICATIONS

- Keypad backlighting
- Push-button backlighting
- LCD backlighting

### DESCRIPTION

This surface mount chip LED is designed to fit industry standard footprint. Small size, low profile and wide viewing angle make this LED an ideal choice for backlighting applications and panel illumination. This device utilizes an InGaN/Sapphire blue LED.

### FEATURES

- Miniature footprint - 1.6(L) X 0.8(W) X 0.6(H) mm
- Wide viewing angle of 100°
- Water clear optics
- Moisture-proof packaging
- 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** | **QTLP601CEB.7778D** | **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 | |
| Bin W3 | 475 - 480 | |
| Spectral Line Half Width (nm) | 35 | $I_F$ = 5 mA |
| Viewing Angle (°) | 120 | $I_F$ = 5 mA |

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### TYPICAL PERFORMANCE CURVES

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

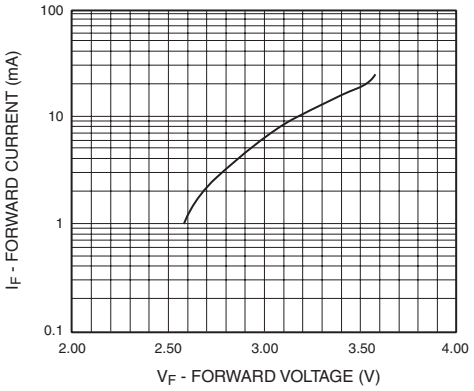



**Fig. 2 Relative Luminous Intensity vs. DC Forward Current**

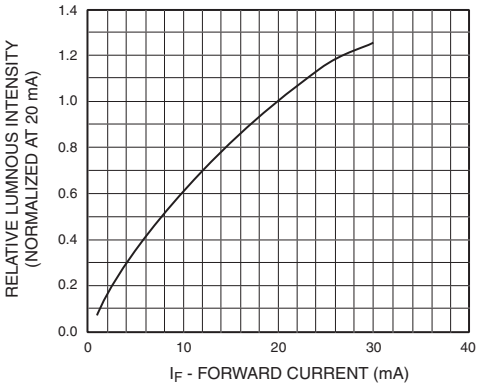



**Fig. 3 Relative Intensity vs. Peak Wavelength**

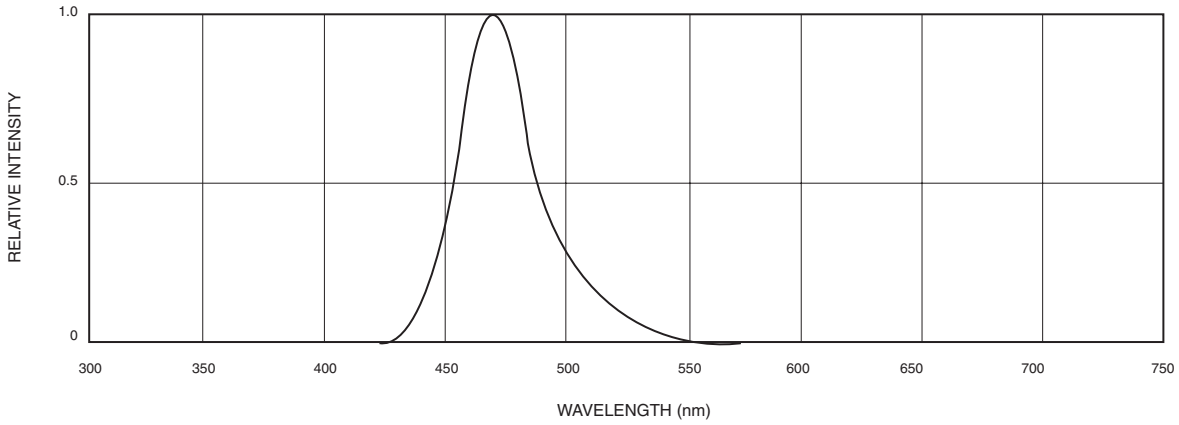



**Fig.4 Radiation Diagram**

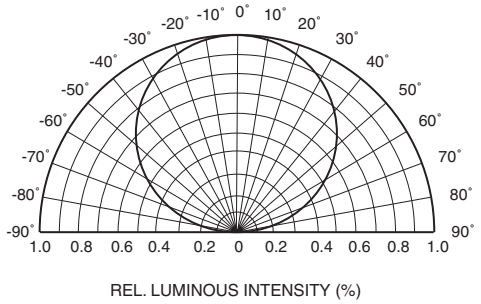
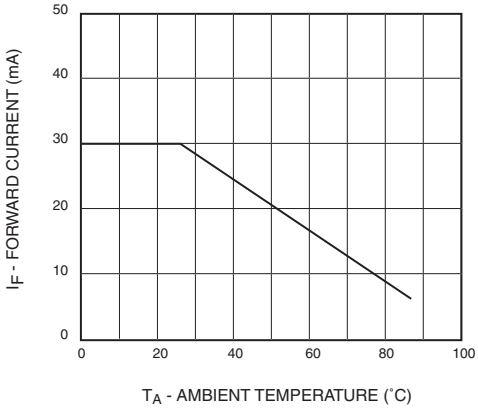



**Fig.5 Maximum Forward Current vs. Ambient Temperature**



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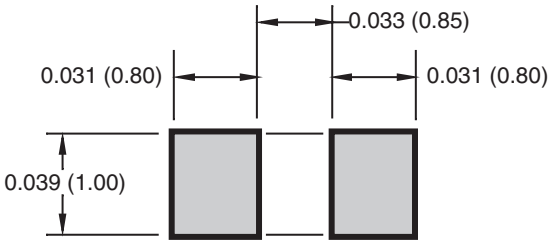
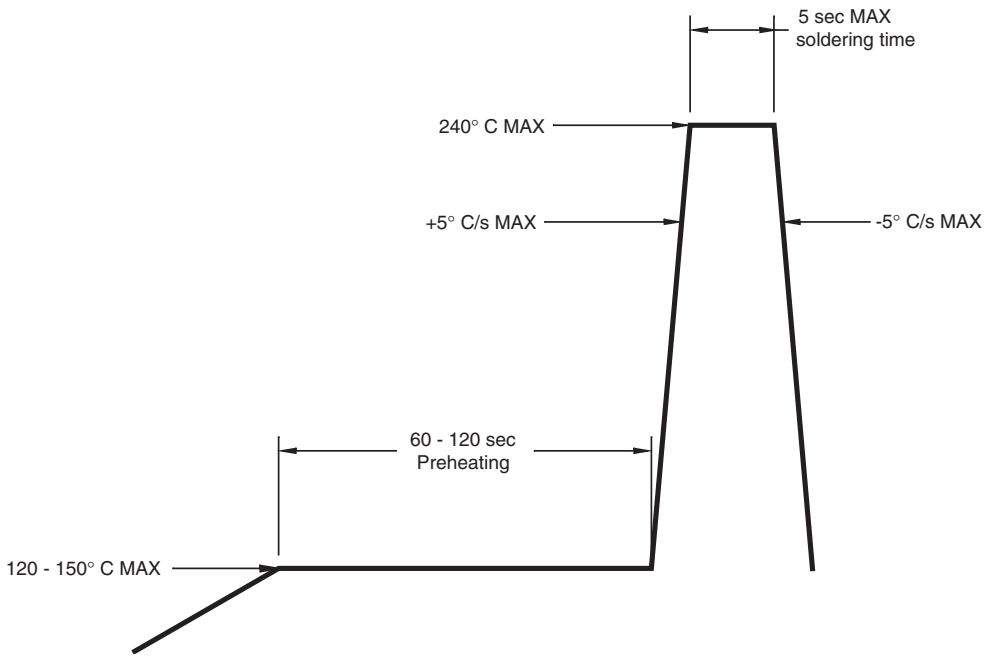
### RECOMMENDED PRINTED CIRCUIT BOARD PATTERN




### RECOMMENDED IR REFLOW SOLDERING PROFILE



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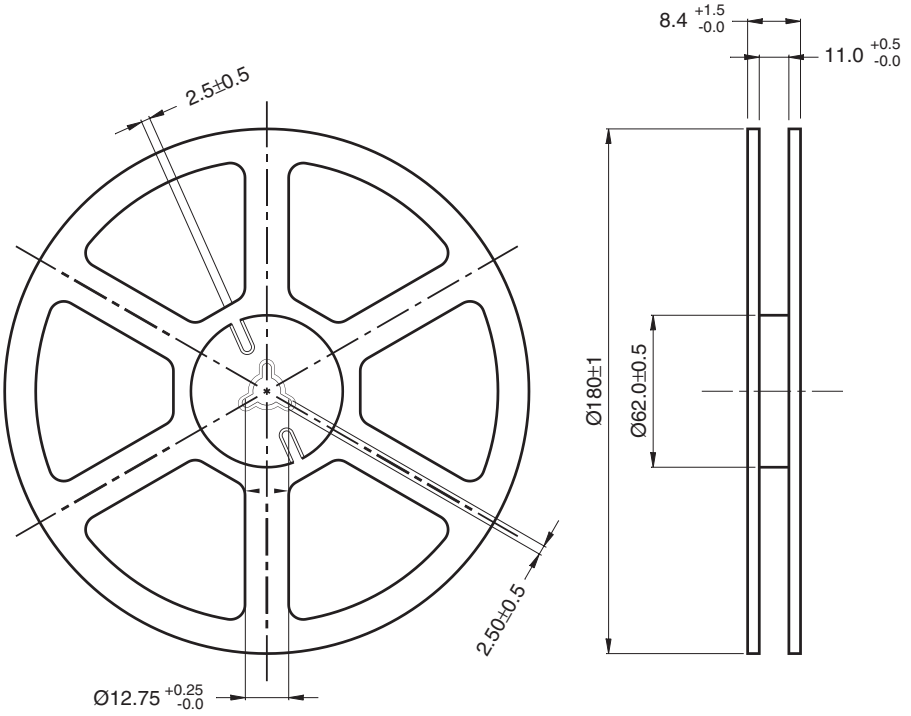
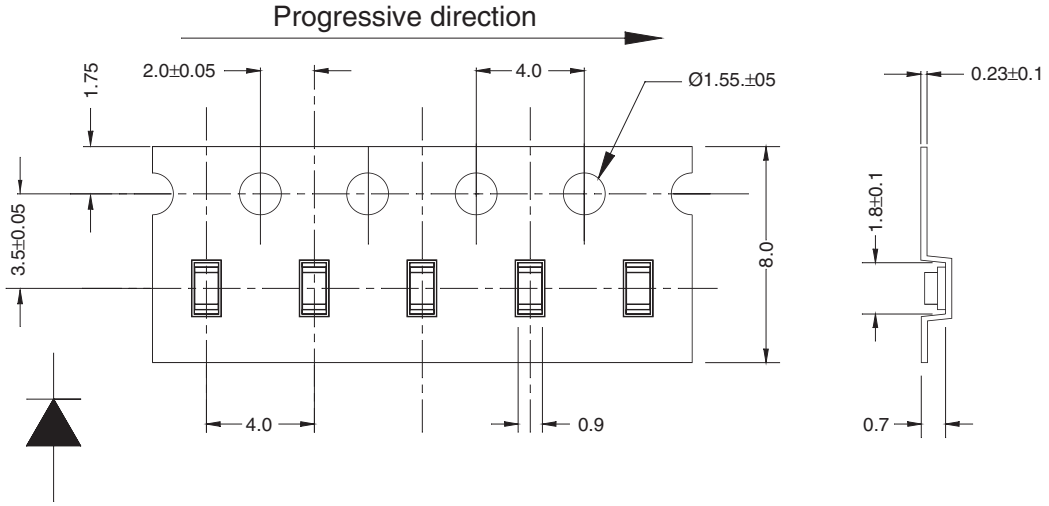
### TAPE AND REEL DIMENSIONS




Dimensional tolerance is ± 0.1mm unless otherwise specified

Angle: ± 0.5

Unit: mm

Polarity

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