FAIRCHILD SEMICONDUCTOR®

# SURFACE MOUNT LED LAMP
## STANDARD BRIGHT 0603 (0.8 mm Height)
## QTLP600C

**QTLP600C-2** HER | **QTLP600C-3** Yellow | **QTLP600C-4** Green

**QTLP600C-7** AlGaAs Red | **QTLP600C-B** Blue

**ABSOLUTE MAXIMUM RATINGS** ($T_A$ =25°C Unless otherwise specified)

| Parameter | Symbol | QTLP600C | | | | | Units |
|---|---|---|---|---|---|---|---|
| | | -2 | -3 | -4 | -7 | -B | |
| Continuous Forward Current | $I_F$ | 30 | 30 | 30 | 30 | 30 | mA |
| Peak Forward Current (f = 1.0 KHz, Duty Factor = 1/10) | $I_{FM}$ | 160 | 160 | 160 | 180 | 100 | mA |
| Reverse Voltage ($I_R$ = 10 µA) | $V_R$ | 5 | 5 | 5 | 5 | 5 | V |
| Power Dissipation | $P_D$ | 84 | 84 | 84 | 72 | 135 | mW |
| 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 |

**ELECTRICAL / OPTICAL CHARACTERISTICS** ($T_A$ =25°C)

| Part Number | Symbol | QTLP600C | | | | | Condition |
|---|---|---|---|---|---|---|---|
| | | -2 | -3 | -4 | -7 | -B | |
| Luminous Intensity (mcd) | | | | | | | |
| Minimum | $I_V$ | 5 | 5 | 9 | 10 | 15 | $I_F$ = 20mA |
| Typical | | 9 | 9 | 18 | 20 | 20 | |
| Forward Voltage (V) | | | | | | | |
| Maximum | $V_F$ | 2.8 | 2.8 | 2.8 | 2.4 | 4.5 | $I_F$ = 20mA |
| Typical | | 2.0 | 2.0 | 2.1 | 1.9 | 3.8 | |
| Wavelength (nm) | | | | | | | |
| Peak | $\lambda_P$ | 635 | 585 | 565 | 660 | 430 | $I_F$ = 20mA |
| Dominant | $\lambda_D$ | 630 | 590 | 570 | 645 | 465 | |
| Spectral Line Half Width (nm) | $\Delta\lambda$ | 45 | 35 | 30 | 20 | 65 | $I_F$ = 20mA |
| Viewing Angle (°) | $2\Theta_{1/2}$ | 100 | 100 | 100 | 100 | 100 | $I_F$ = 20mA |

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## TYPICAL PERFORMANCE CURVES

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

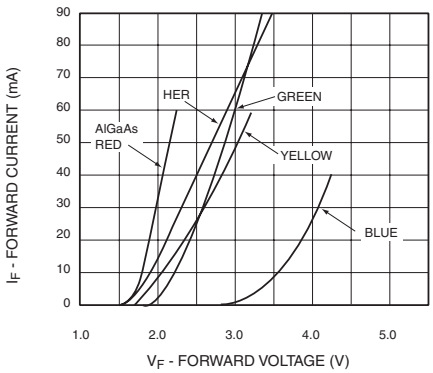



**Fig. 2 Relative Luminous Intensity vs. DC Forward Current**

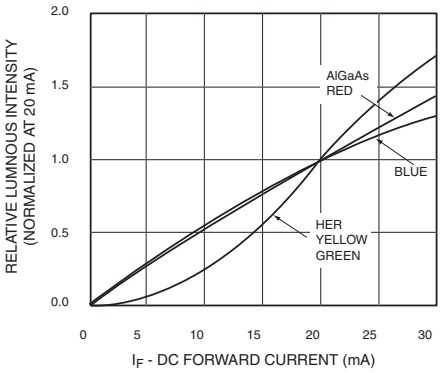



**Fig. 3 Relative Intensity vs. Peak Wavelength**

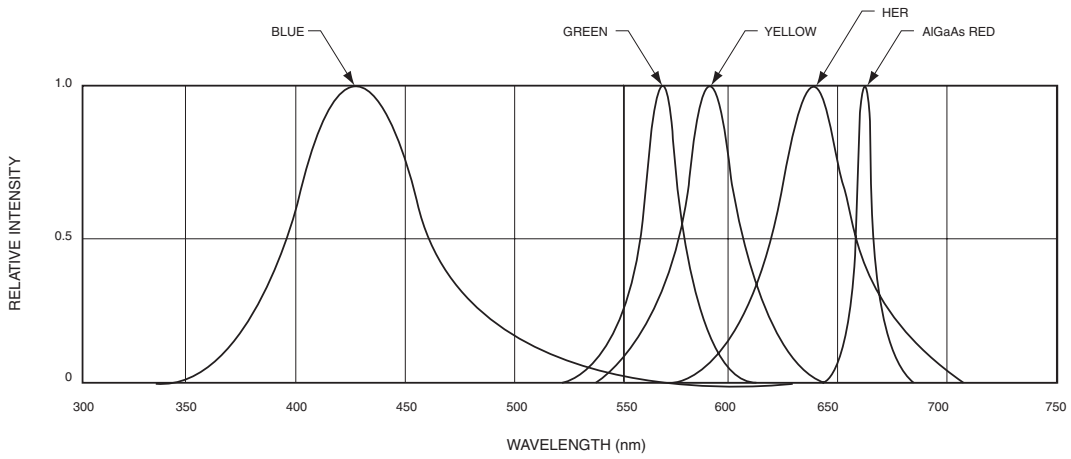
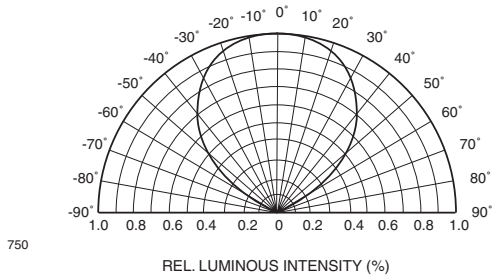
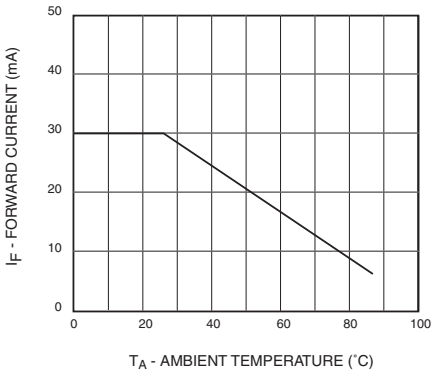



**Fig.4 Radiation Diagram**

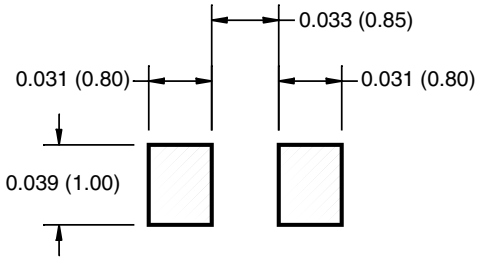



750

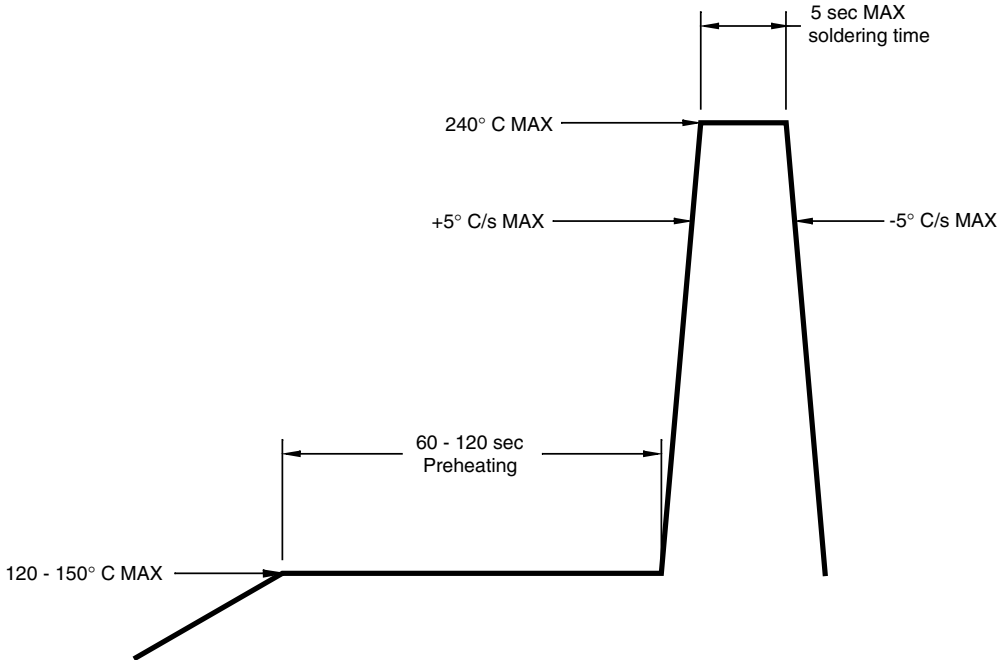
**Fig.5 Maximum Forward Current vs. Ambient Temperature**



## RECOMMENDED PRINTED CIRCUIT BOARD PATTERN




## RECOMMENDED IR REFLOW SOLDERING PROFILE



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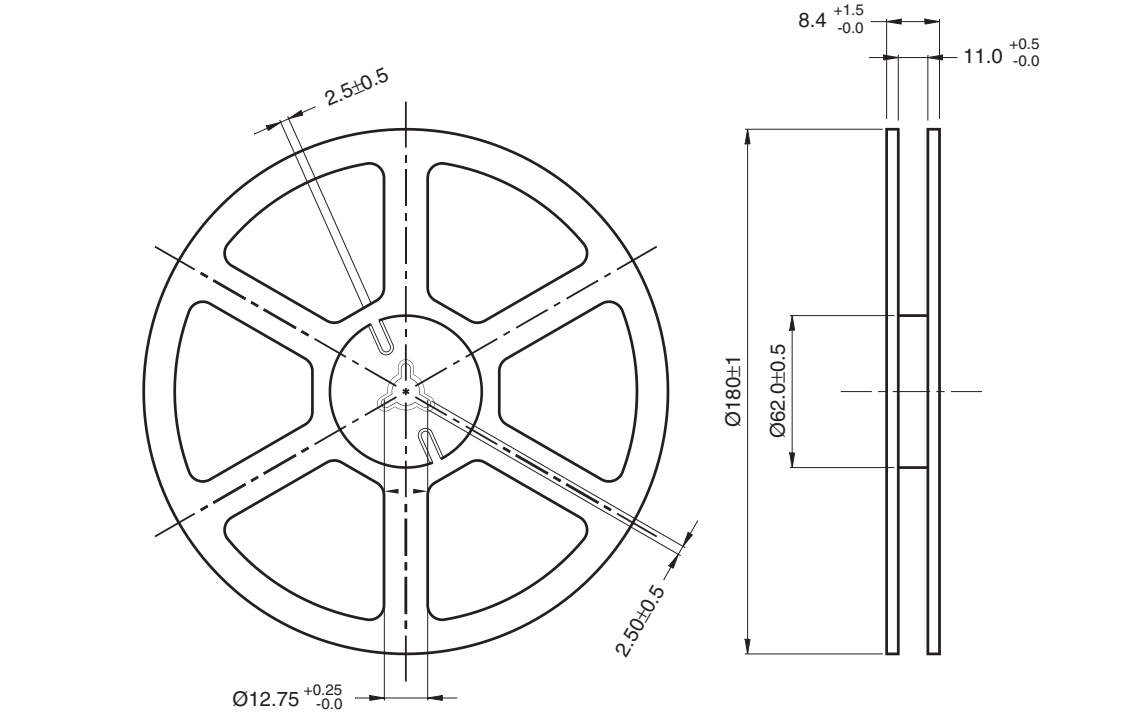
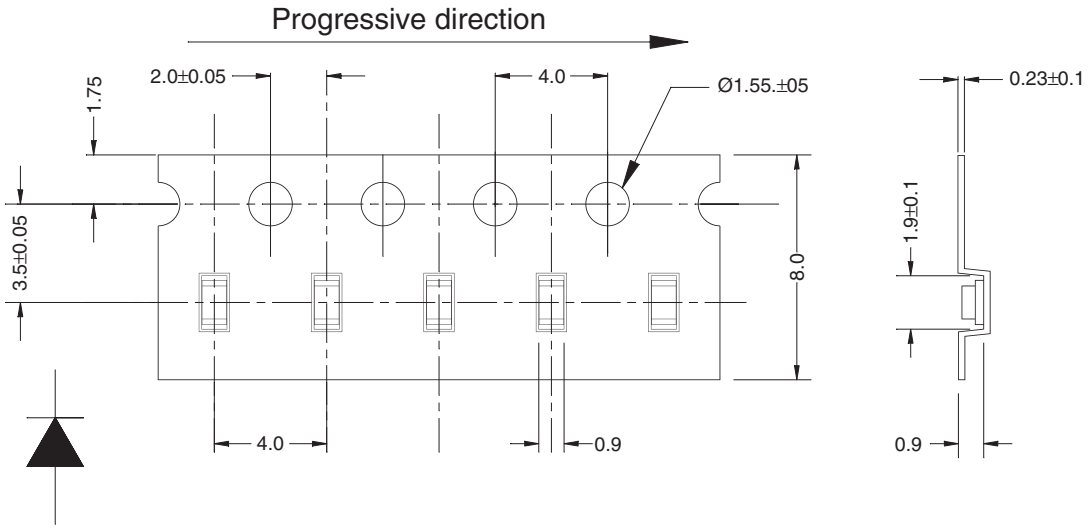
### TAPE AND REEL DIMENSIONS




for -2, -3, -4, -B and -7 Polarity

Dimensional tolerance is ± 0.1mm unless otherwise specified
Angle: ± 0.5
Unit: mm

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**DISCLAIMER**

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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.