

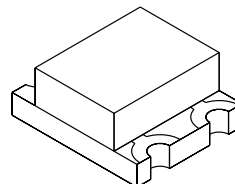
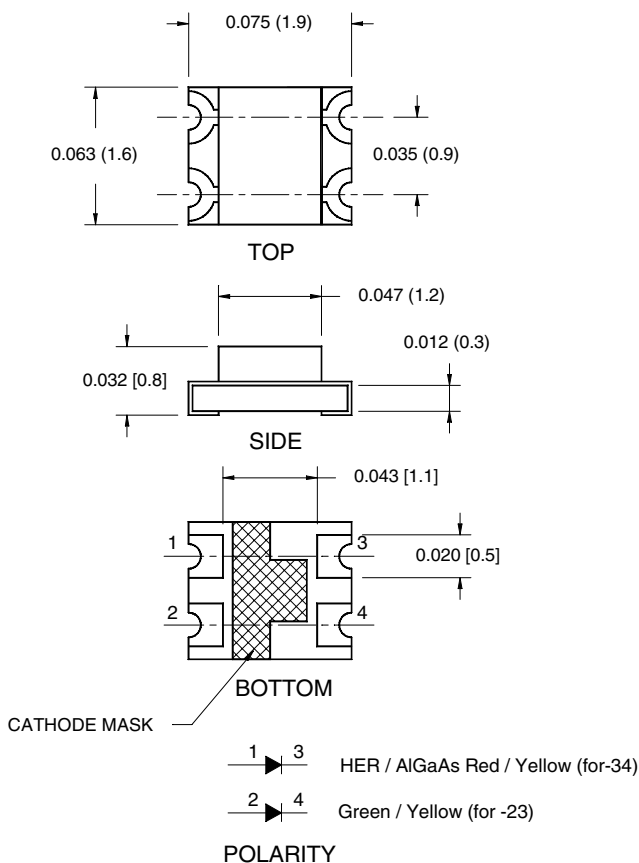
**QTLP600C-23** HER/Yellow

**QTLP600C-24** HER/Green

**QTLP600C-34** Yellow/Green

**QTLP600C-74** AlGaAs Red/Green

### PACKAGE DIMENSIONS



#### NOTE:

Dimensions for all drawings are in inches (mm).

### APPLICATIONS

- Keypad backlighting
- Push-button backlighting
- LCD backlighting

### DESCRIPTION

These bi-color surface mount chip LEDs are designed to fit industry standard footprint. Small size, low profile and wide viewing angle make these LEDs ideal for backlighting applications and panel illumination.

### FEATURES

- Miniature footprint - 1.9(L) X 1.6(W) X 0.8(H) mm
- Wide viewing angle of 130°
- 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<sub>A</sub> = 25°C Unless otherwise specified)

| Parameter   | Symbol           | QTLP600C      |           |           |           | Units |
|---|------------------|---------------|-----------|-----------|-----------|-------|
|   |                  | -23           | -24       | -34       | -74       |       |
| Continuous Forward Current                                | I <sub>F</sub>   | 30 / 30       | 30 / 30   | 30 / 30   | 30 / 30   | mA    |
| Peak Forward Current<br>(f = 1.0 KHz, Duty Factor = 1/10) | I <sub>FM</sub>  | 160 / 160     | 160 / 160 | 160 / 160 | 180 / 160 | mA    |
| Reverse Voltage   | V <sub>R</sub>   | 5             | 5         | 5         | 5         | V     |
| Power Dissipation   | P <sub>D</sub>   | 84 / 84       | 84 / 84   | 84 / 84   | 72 / 84   | mW    |
| Operating Temperature                                     | T <sub>OPR</sub> | -40 to +85    |           |           |           | °C    |
| Storage Temperature                                       | T <sub>STG</sub> | -40 to +90    |           |           |           | °C    |
| Lead Soldering Time                                       | T <sub>SOL</sub> | 260 for 5 sec |           |           |           | °C    |

### ELECTRICAL / OPTICAL CHARACTERISTICS (T<sub>A</sub> = 25°C)

| Parameter                     | Symbol            | QTLP600C  |           |           |           | Units                 |
|-------------------------------|-------------------|-----------|-----------|-----------|-----------|-----------------------|
|                               |                   | -23       | -24       | -34       | -74       |                       |
| Luminous Intensity (mcd)      | I <sub>V</sub>    | 4 / 2.5   | 4 / 7.5   | 2.5 / 7.5 | 10 / 7.5  | I <sub>F</sub> = 20mA |
| Minimum                       |                   | 7 / 4     | 7 / 12.5  | 4 / 12.5  | 20 / 12.5 |                       |
| Forward Voltage (V)           | V <sub>F</sub>    | 2.8 / 2.8 | 2.8 / 2.8 | 2.8 / 2.8 | 2.4 / 2.8 | I <sub>F</sub> = 20mA |
| Maximum                       |                   | 2.0 / 2.0 | 2.0 / 2.1 | 2.0 / 2.1 | 1.9 / 2.1 |                       |
| Wavelength (nm)               | λ <sub>P</sub>    | 635 / 585 | 635 / 565 | 585 / 565 | 660 / 565 | I <sub>F</sub> = 20mA |
| Peak                          |                   | 630 / 590 | 630 / 570 | 590 / 570 | 645 / 570 |                       |
| Dominant                      | λ <sub>D</sub>    | 630 / 590 | 630 / 570 | 590 / 570 | 645 / 570 | I <sub>F</sub> = 20mA |
| Spectral Line Half Width (nm) | Δλ                | 45 / 35   | 45 / 30   | 35 / 30   | 20 / 30   | I <sub>F</sub> = 20mA |
| Viewing Angle (°)             | 2θ <sub>1/2</sub> | 130       | 130       | 130       | 130       | I <sub>F</sub> = 20mA |

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### TYPICAL PERFORMANCE CURVES

Fig. 1 Forward Current vs. Forward Voltage

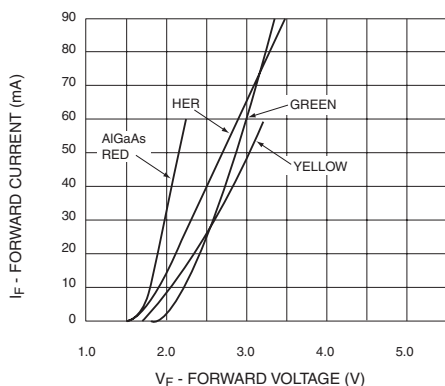


Fig. 2 Relative Luminous Intensity vs. DC Forward Current

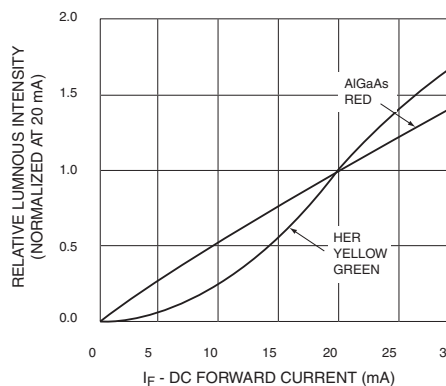


Fig. 3 Relative Intensity vs. Peak Wavelength

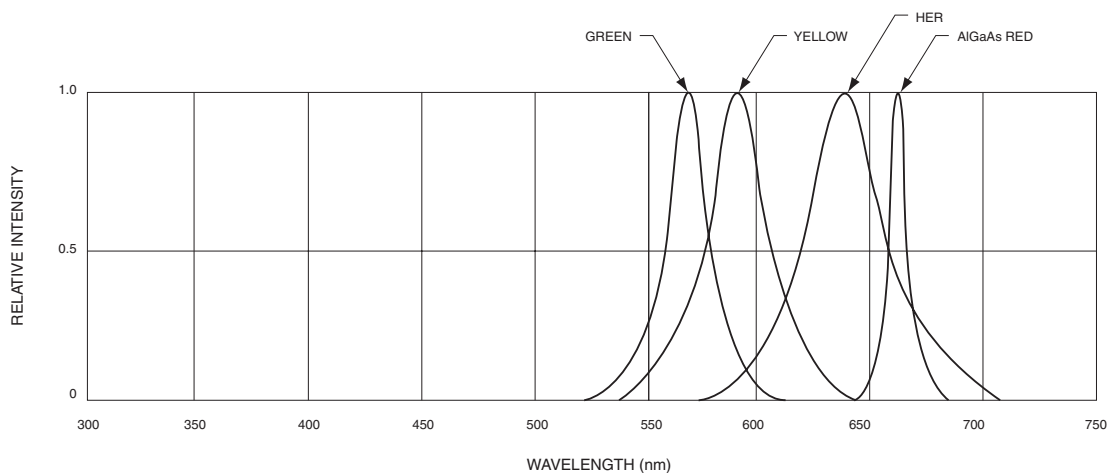


Fig.4 Radiation Diagram

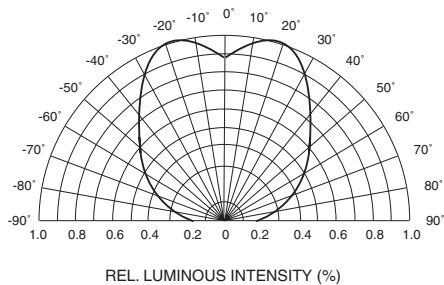
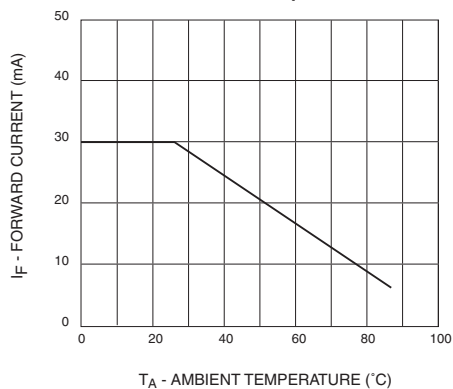


Fig.5 Maximum Forward Current vs. Ambient Temperature



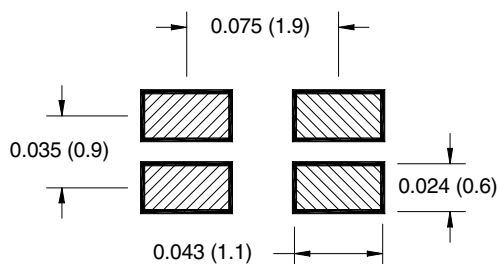
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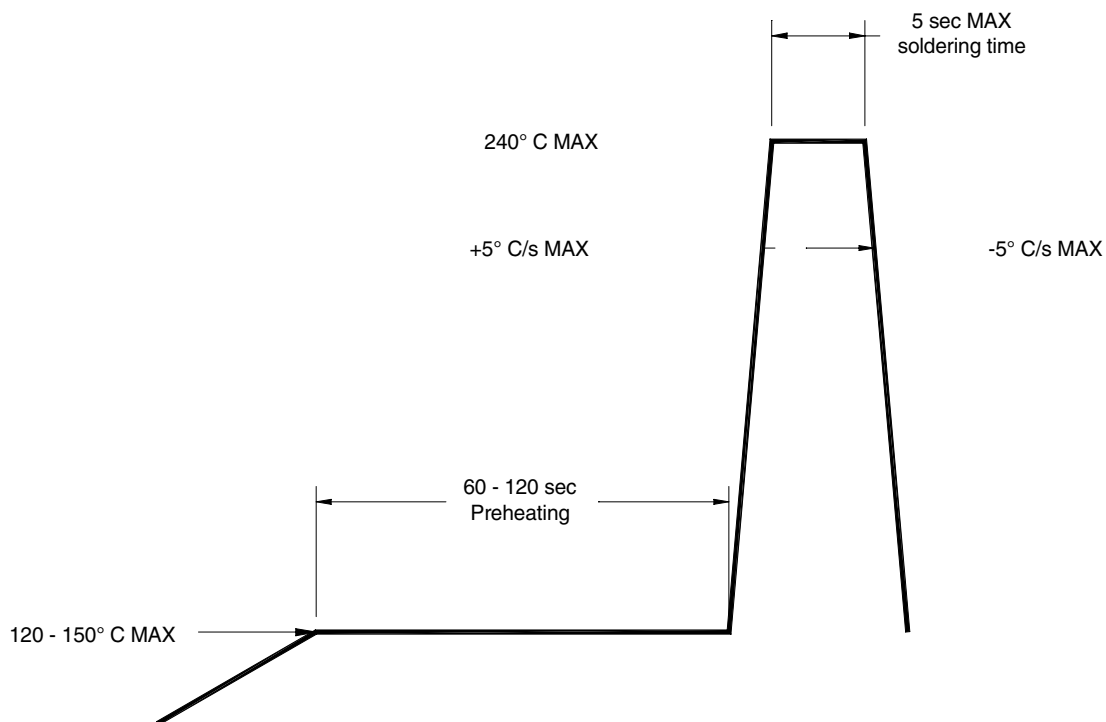
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### RECOMMENDED PRINTED CIRCUIT BOARD PATTERN



### RECOMMENDED IR REFLOW SOLDERING PROFILE



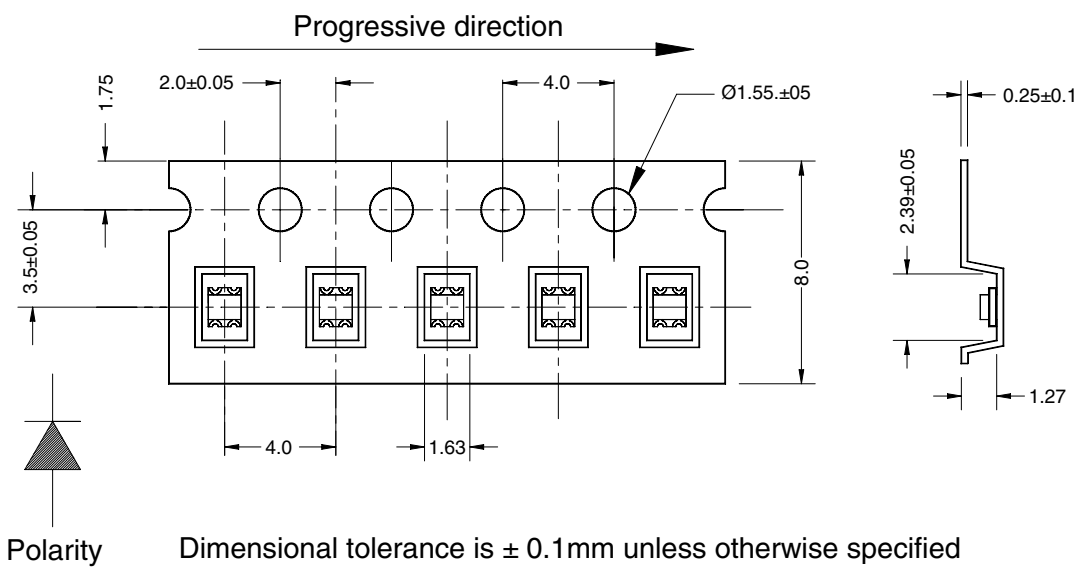
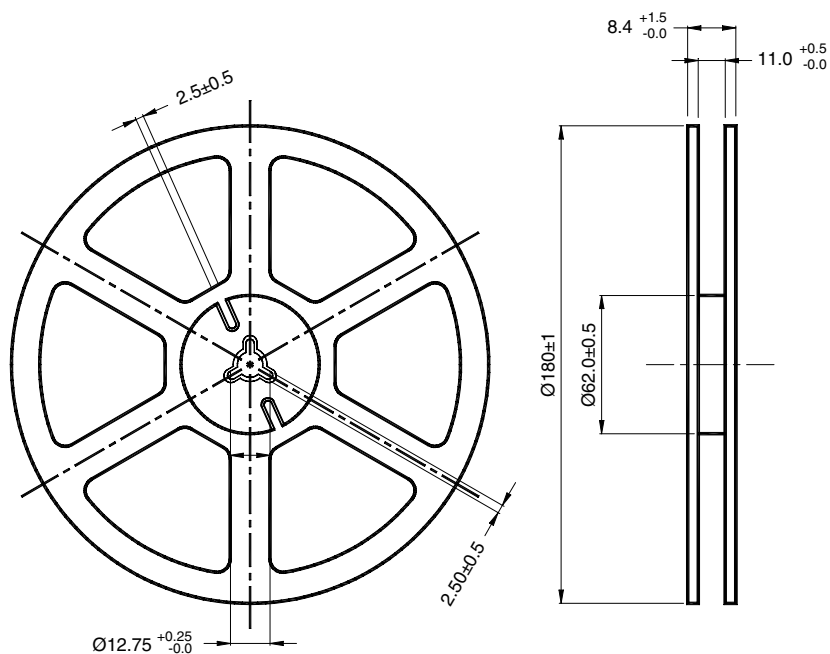
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## TAPE AND REEL DIMENSIONS



Dimensional tolerance is  $\pm 0.1\text{mm}$  unless otherwise specified

Angle:  $\pm 0.5$

Unit: mm

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