

QTLP610C-2 HER

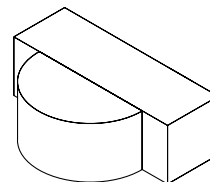
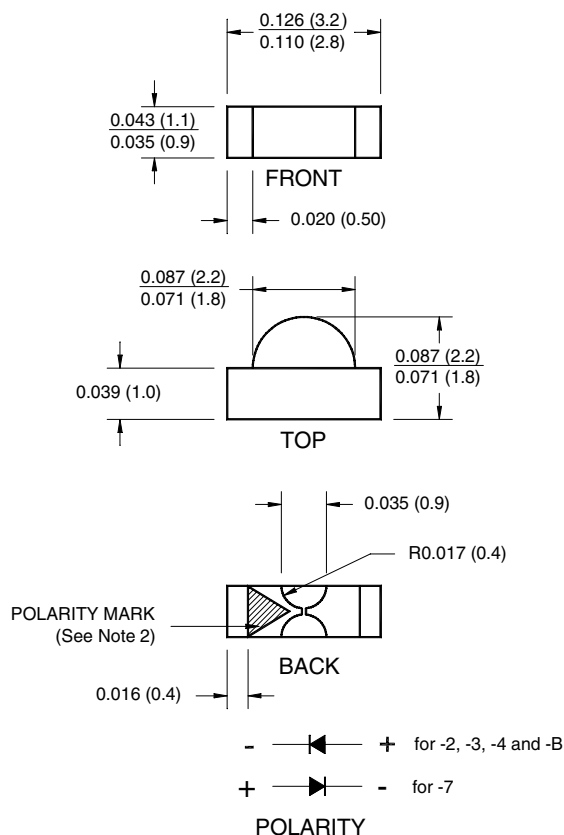
QTLP610C-3 Yellow

QTLP610C-4 Green

QTLP610C-7 AlGaAs Red

QTLP610C-B Blue

## PACKAGE DIMENSIONS



## APPLICATIONS

- LCD edge-lighting
- Edge card edge-lighting

## DESCRIPTION

These right angle surface mount chip LEDs emit light in the lateral direction. Small size and wide viewing angle make these LEDs ideal choices for status indication in consumer electronics, industrial control and other applications.

## FEATURES

- Small footprint - 3.0(L) X 2.0(W) X 1.0(H) mm
- Wide viewing angle of 120°
- Water clear optics
- Moisture-proof packaging
- Available in 0.315" (8mm) width tape on 7" (178mm) diameter reel; 2,000 units per reel

# SURFACE MOUNT LED LAMP

## STANDARD BRIGHT RIGHT ANGLE

**QTLP610C-2** HER

**QTLP610C-3** Yellow

**QTLP610C-4** Green

**QTLP610C-7** AlGaAs Red

**QTLP610C-B** Blue

### ABSOLUTE MAXIMUM RATINGS (T<sub>A</sub> = 25°C Unless otherwise specified)

| Parameter                                                 | Symbol           | QTLP610C      |     |     |     |     | Units |
|-----------------------------------------------------------|------------------|---------------|-----|-----|-----|-----|-------|
|                                                           |                  | -2            | -3  | -4  | -7  | -B  |       |
| Continuous Forward Current                                | I <sub>F</sub>   | 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 | 180 | 100 | mA    |
| Reverse Voltage (I <sub>R</sub> = 10 µA)                  | V <sub>R</sub>   | 5             | 5   | 5   | 5   | 5   | V     |
| Power Dissipation                                         | P <sub>D</sub>   | 84            | 84  | 84  | 72  | 135 | 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)

| Part Number                   | Symbol            | QTLP610C |     |     |     |     | Condition             |
|-------------------------------|-------------------|----------|-----|-----|-----|-----|-----------------------|
|                               |                   | -2       | -3  | -4  | -7  | -B  |                       |
| Luminous Intensity (mcd)      | I <sub>V</sub>    |          |     |     |     |     | I <sub>F</sub> = 20mA |
| Minimum                       |                   | 3        | 3   | 5   | 10  | 15  |                       |
| Typical                       |                   | 7        | 7   | 10  | 20  | 25  |                       |
| Forward Voltage (V)           | V <sub>F</sub>    |          |     |     |     |     | I <sub>F</sub> = 20mA |
| Maximum                       |                   | 2.8      | 2.8 | 2.8 | 2.4 | 4.5 |                       |
| Typical                       |                   | 2.0      | 2.0 | 2.1 | 1.9 | 3.8 |                       |
| Wavelength (nm)               | λ <sub>P</sub>    |          |     |     |     |     | I <sub>F</sub> = 20mA |
| Peak                          |                   | 635      | 585 | 565 | 660 | 430 |                       |
| Dominant                      | λ <sub>D</sub>    | 630      | 590 | 570 | 645 | 465 |                       |
| Spectral Line Half Width (nm) | Δλ                | 45       | 35  | 30  | 20  | 65  | I <sub>F</sub> = 20mA |
| Viewing Angle (°)             | 2θ <sub>1/2</sub> | 120      | 120 | 120 | 120 | 120 | I <sub>F</sub> = 20mA |

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## TYPICAL PERFORMANCE CURVES

Fig. 1 Forward Current vs. Forward Voltage

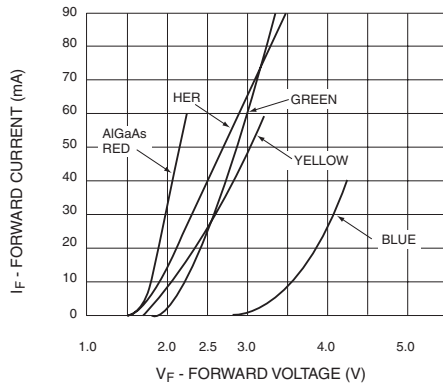


Fig. 2 Relative Luminous Intensity vs. DC Forward Current

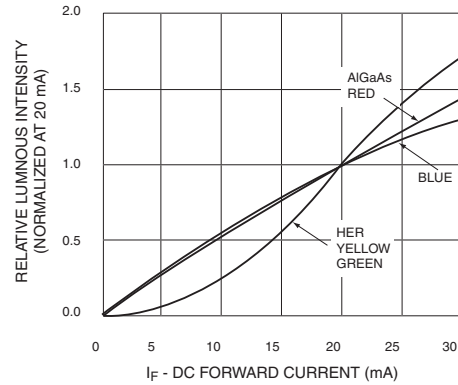


Fig. 3 Relative Intensity vs. Peak Wavelength

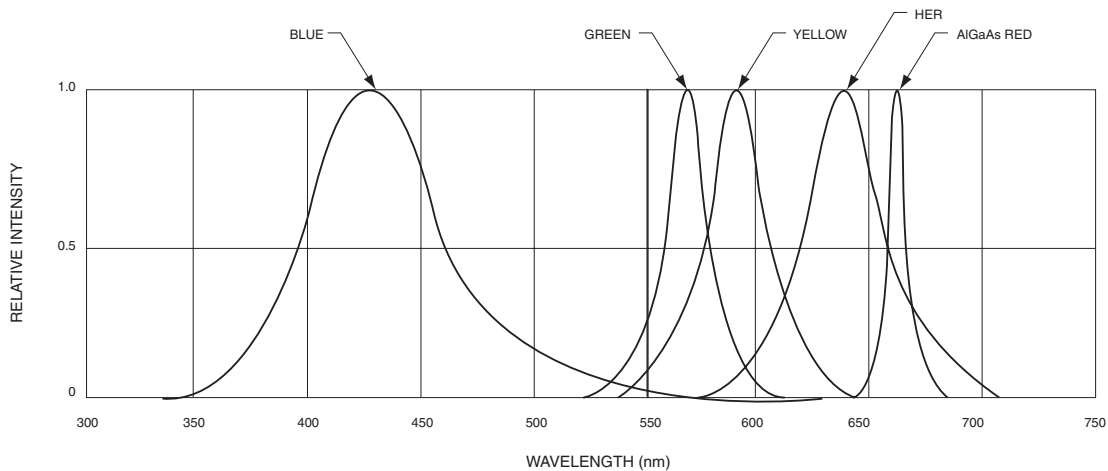


Fig. 4 Radiation Diagram

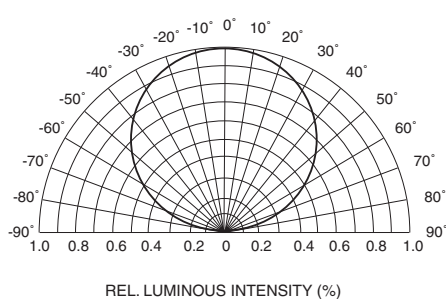
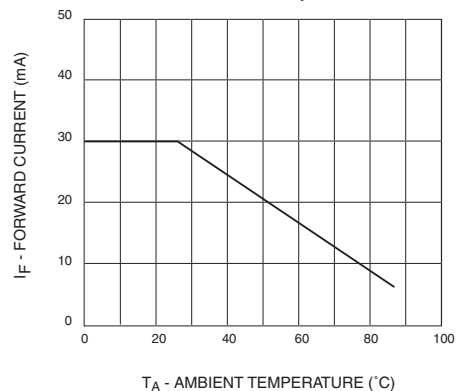


Fig. 5 Maximum Forward Current vs. Ambient Temperature



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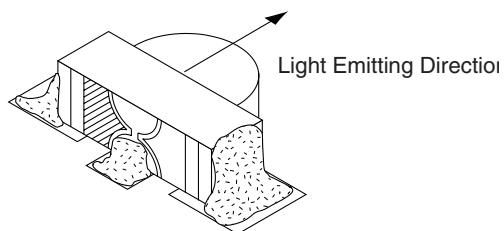
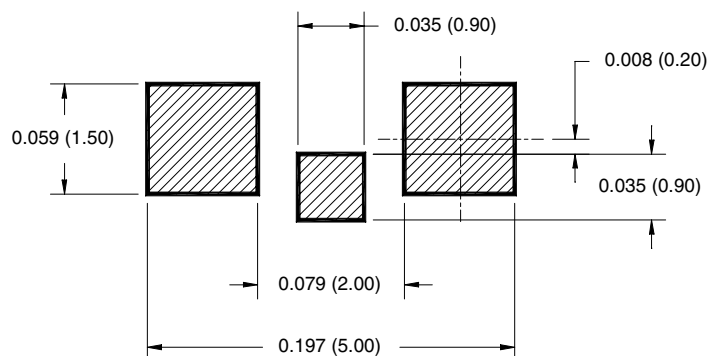
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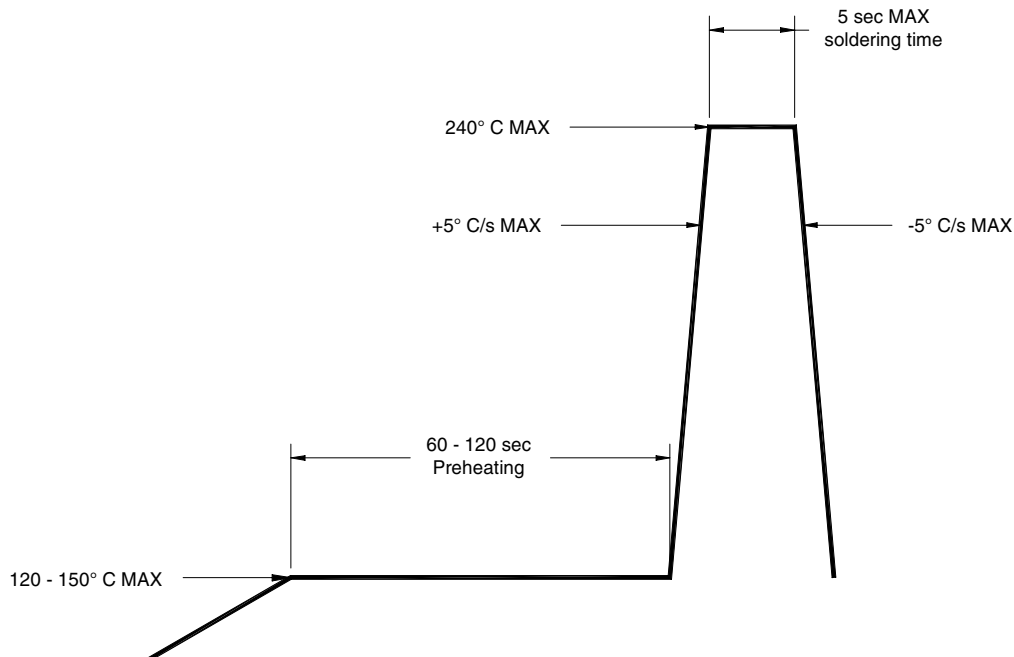
**QTLP610C-B** Blue

## RECOMMENDED PRINTED CIRCUIT BOARD PATTERN



Mounting Example

## RECOMMENDED IR REFLOW SOLDERING PROFILE



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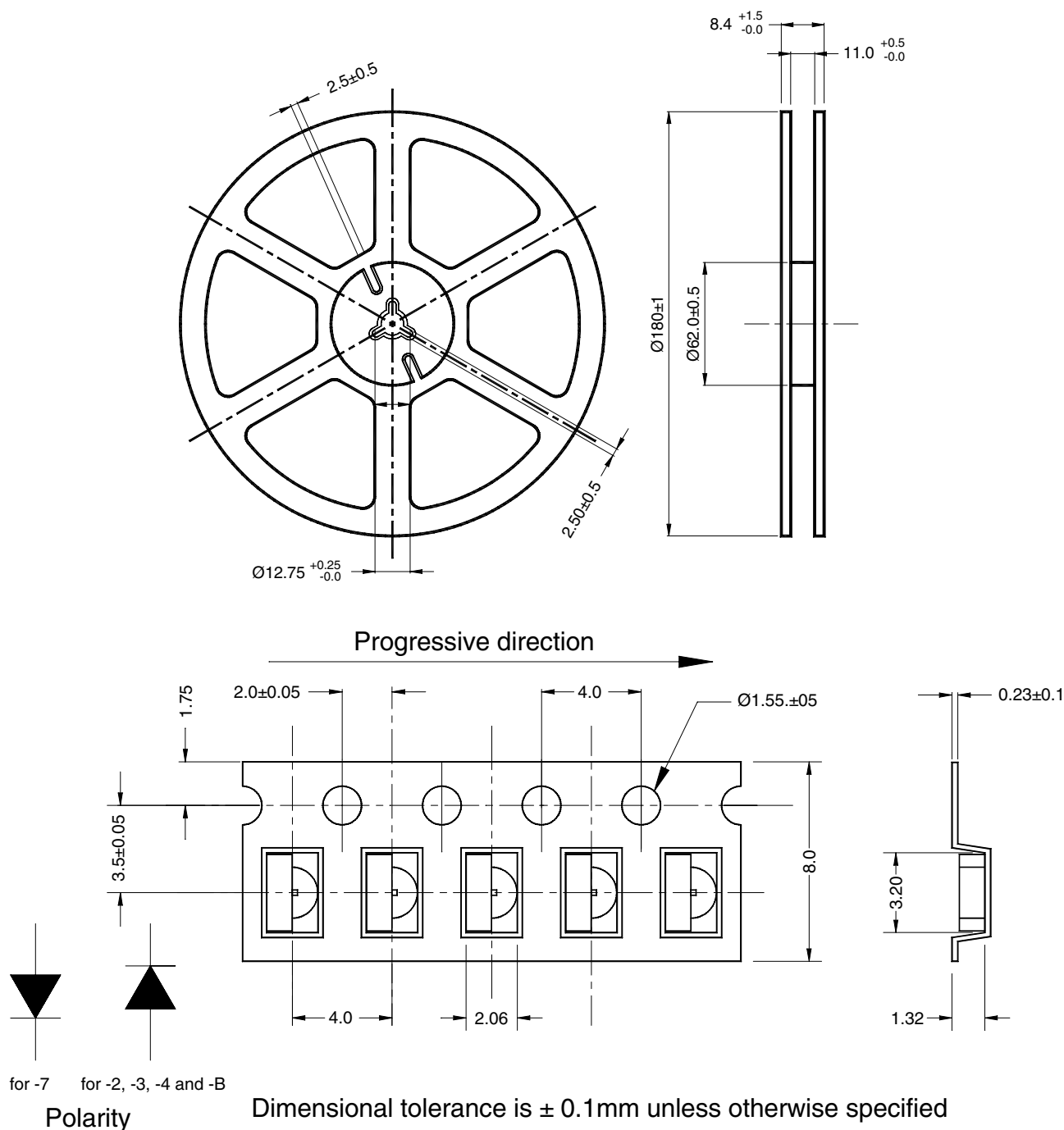
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## TAPE AND REEL DIMENSIONS



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