



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

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SURFACE MOUNT LED LAMP

STANDARD BRIGHT 1206 (Inner Lens)

QTLP651C-2 HER

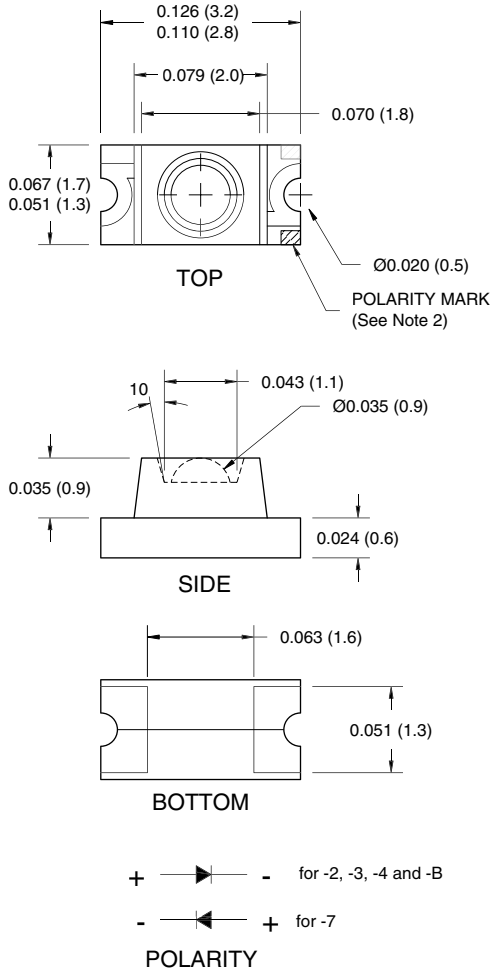
QTLP651C-3 Yellow

QTLP651C-4 Green

QTLP651C-7 AlGaAs Red

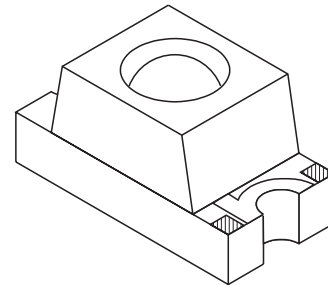
QTLP651C-B Blue

PACKAGE DIMENSIONS



NOTE:

1. Dimensions for all drawings are in inches (mm).
2. Cathode for -2, -3, -4 and B. Anode for -7.



APPLICATIONS

- Keypad backlighting
- Push-button backlighting
- LCD backlighting

DESCRIPTION

These surface mount chip LEDs are designed to fit industry standard footprint. The package features a recessed, inner lens that focuses light output, offering greater luminous intensity for direct viewing.

FEATURES

- Small footprint - 3.0(L) X 1.5(W) X 1.5(H) mm
- Narrow viewing angle of 20°
- 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 ($T_A = 25^\circ\text{C}$ Unless otherwise specified)

| Parameter | Symbol | QTLP651C | | | | | Units |
|---|-----------|---------------|-----|-----|-----|-----|------------------|
| | | -2 | -3 | -4 | -7 | -B | |
| Continuous Forward Current | I_F | 30 | 30 | 30 | 30 | 30 | mA |
| Peak Forward Current ($f = 1.0 \text{ KHz}$, Duty Factor = 1/10) | I_{FM} | 160 | 160 | 160 | 180 | 100 | mA |
| Reverse Voltage ($I_R = 10 \mu\text{A}$) | 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 | | | | | $^\circ\text{C}$ |
| Storage Temperature | T_{STG} | -40 to +90 | | | | | $^\circ\text{C}$ |
| Lead Soldering Time | T_{SOL} | 260 for 5 sec | | | | | $^\circ\text{C}$ |

ELECTRICAL / OPTICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$)

| Part Number | Symbol | QTLP651C | | | | | Condition |
|-------------------------------|--------|----------|-----|-----|-----|-----|---------------------|
| | | -2 | -3 | -4 | -7 | -B | |
| Luminous Intensity (mcd) | I_V | 9 | 10 | 20 | 30 | 25 | $I_F = 10\text{mA}$ |
| Minimum | | 15 | 18 | 35 | 50 | 35 | |
| Typical | V_F | 2.8 | 2.8 | 2.8 | 2.4 | 4.5 | $I_F = 10\text{mA}$ |
| Forward Voltage (V) | | 2.0 | 2.0 | 2.1 | 1.9 | 3.8 | |
| Maximum | I_P | 635 | 585 | 565 | 660 | 430 | $I_F = 10\text{mA}$ |
| Typical | | 630 | 590 | 570 | 645 | 465 | |
| Wavelength (nm) | I_D | 45 | 35 | 30 | 20 | 65 | $I_F = 10\text{mA}$ |
| Peak | DI | 20 | 20 | 20 | 20 | 20 | $I_F = 10\text{mA}$ |
| Dominant | | | | | | | |
| Spectral Line Half Width (nm) | | | | | | | |
| Viewing Angle ($^\circ$) | 2U1/2 | | | | | | |

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TYPICAL PERFORMANCE CURVES

Fig. 1 Forward Current vs. Forward Voltage

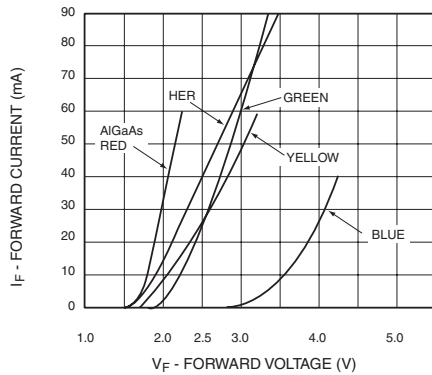


Fig. 2 Relative Luminous Intensity vs. DC Forward Current

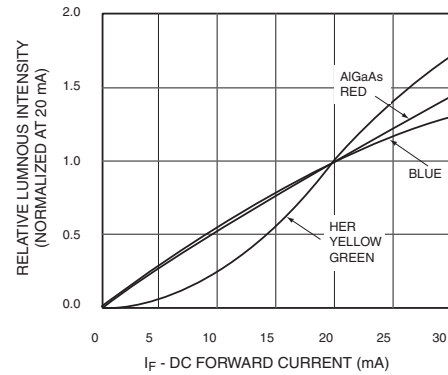


Fig. 3 Relative Intensity vs. Peak Wavelength

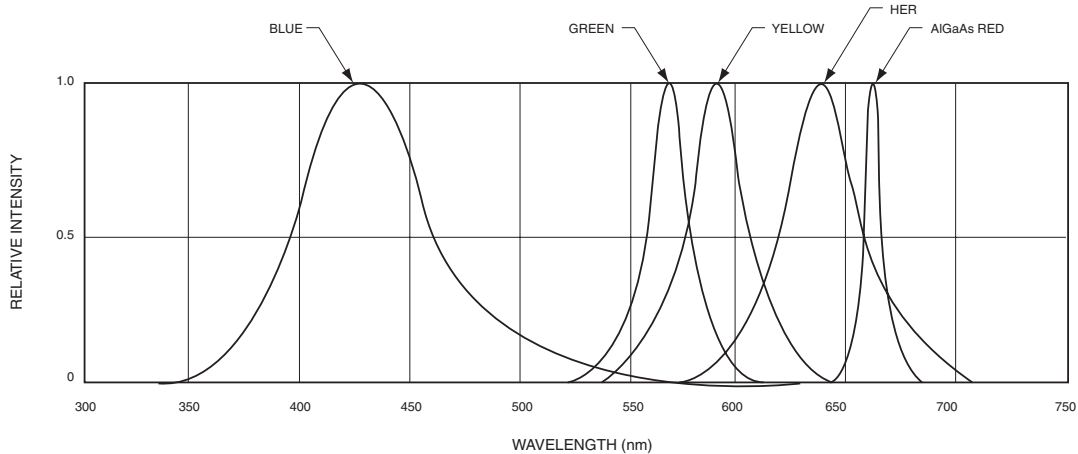


Fig. 4 Radiation Diagram

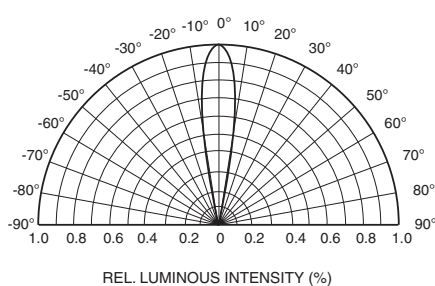
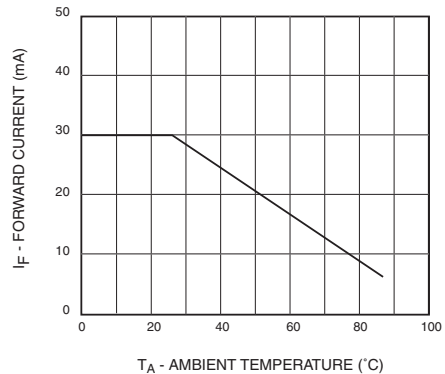


Fig. 5 Maximum Forward Current vs. Ambient Temperature



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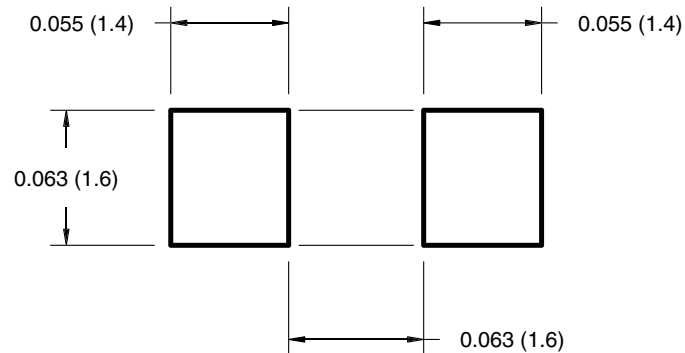
QTLP651C-3 Yellow

QTLP651C-4 Green

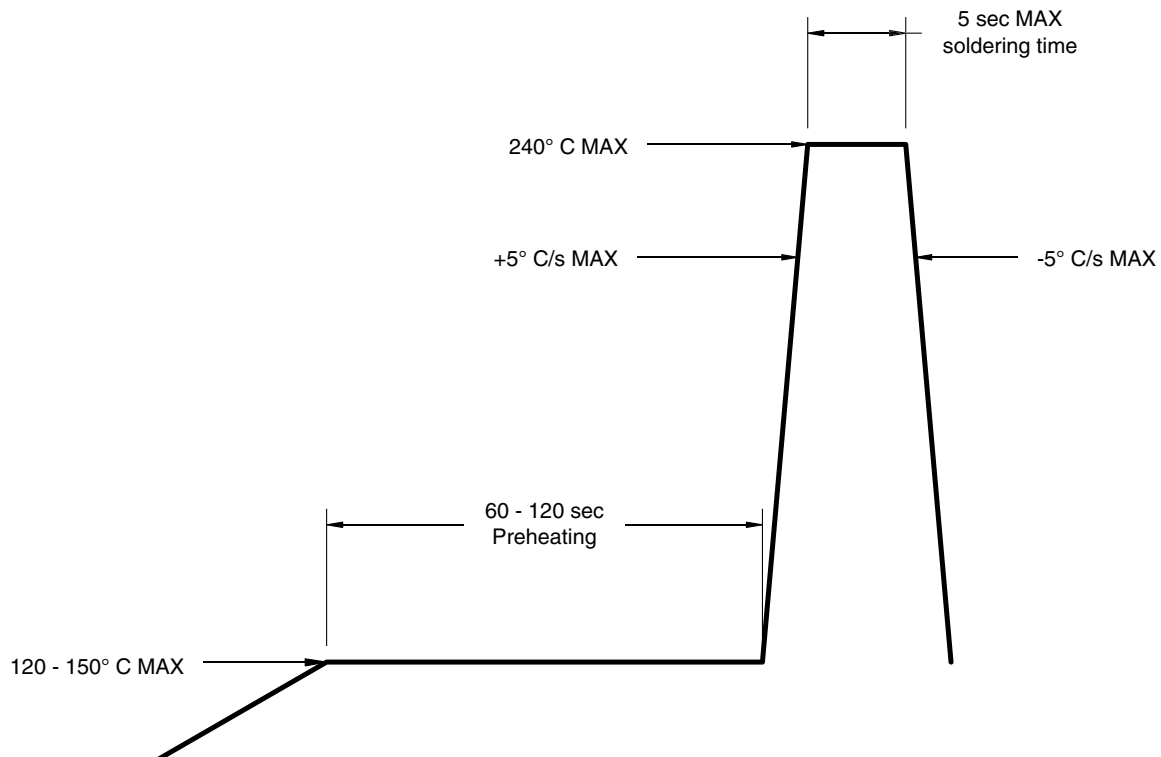
QTLP651C-7 AlGaAs Red

QTLP651C-B Blue

RECOMMENDED PRINTED CIRCUIT BOARD PATTERN



RECOMMENDED IR REFLOW SOLDERING PROFILE



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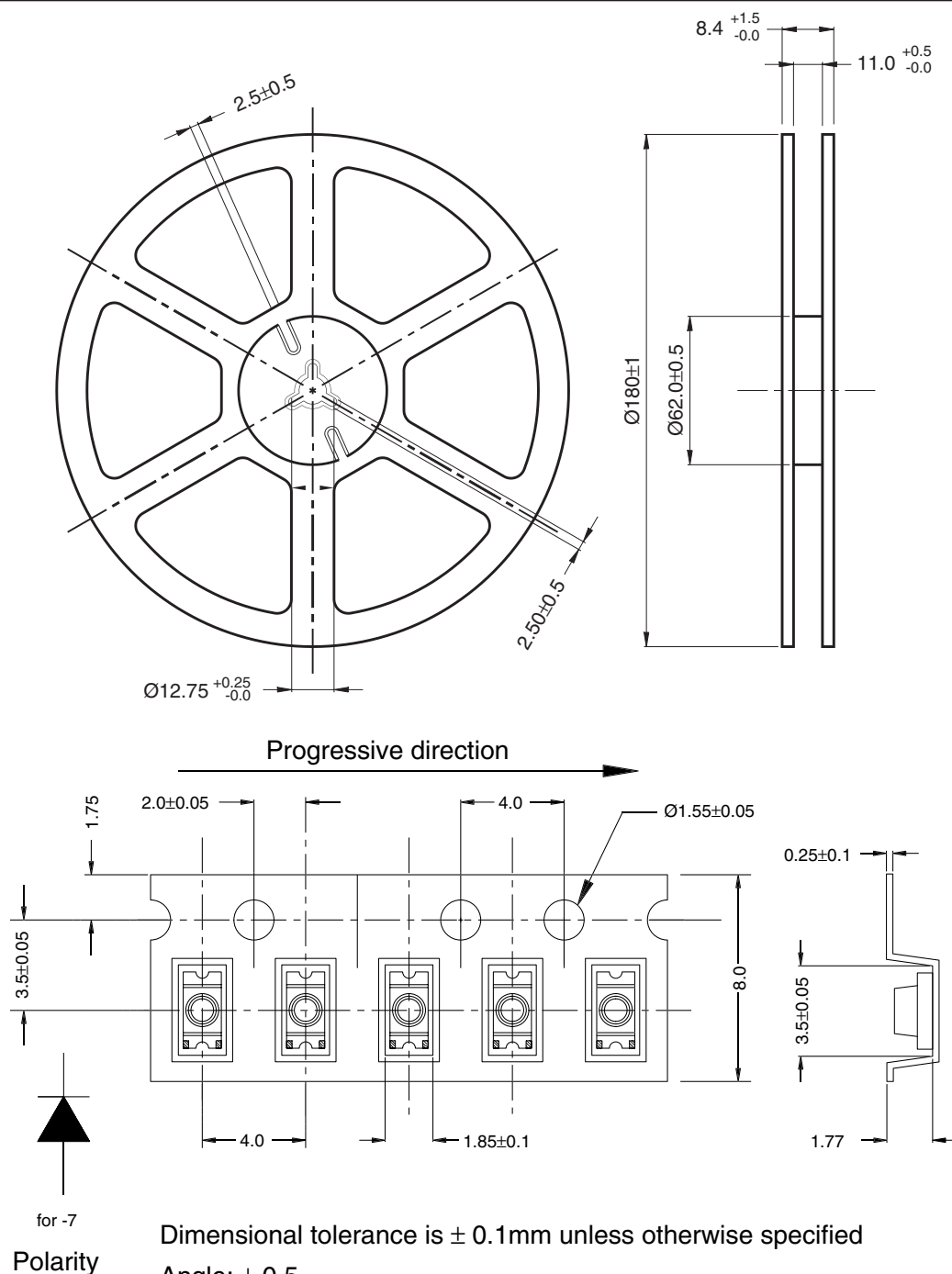
QTL P651C-3 Yellow

QTLP651C-4 Green

QTL P651C-7 AlGaAs Red

QTL P651C-B Blue

TAPE AND REEL DIMENSIONS



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

Angle: ± 0.5

Unit: mm

QTLP651C-4 Green

QTLP651C-B Blue

Technical drawing of a progressive die, showing three views: a top view, a side view, and a front view.

Top View: A circular die with a central hole of diameter $\varnothing 12.75^{+0.25}_{-0.0}$. The die is divided into five segments by radial slots. The width of each segment is 2.5 ± 0.5 . The overall diameter is $\varnothing 180 \pm 1$. The distance from the center to the outer edge is $11.0^{+0.5}_{-0.0}$. The distance from the center to the inner edge of the segments is $8.4^{+1.5}_{-0.0}$. The distance from the center to the outer edge of the segments is $11.0^{+0.5}_{-0.0}$.

Side View: A cross-section of the die showing the thickness of the segments. The total thickness is 8.0 . The thickness of the segments is 3.5 ± 0.05 . The thickness of the central core is 1.77 . The distance from the center to the outer edge is $11.0^{+0.5}_{-0.0}$.

Front View: A cross-section of the die showing the width of the segments. The total width is 8.0 . The width of the segments is 2.0 ± 0.05 . The width of the central core is 1.75 . The distance from the center to the outer edge is $11.0^{+0.5}_{-0.0}$. The distance from the center to the inner edge of the segments is $8.4^{+1.5}_{-0.0}$. The distance from the center to the outer edge of the segments is $11.0^{+0.5}_{-0.0}$.

Progressive direction: Indicated by an arrow pointing to the right.

Polarity

Unit: mm

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