

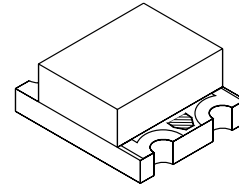
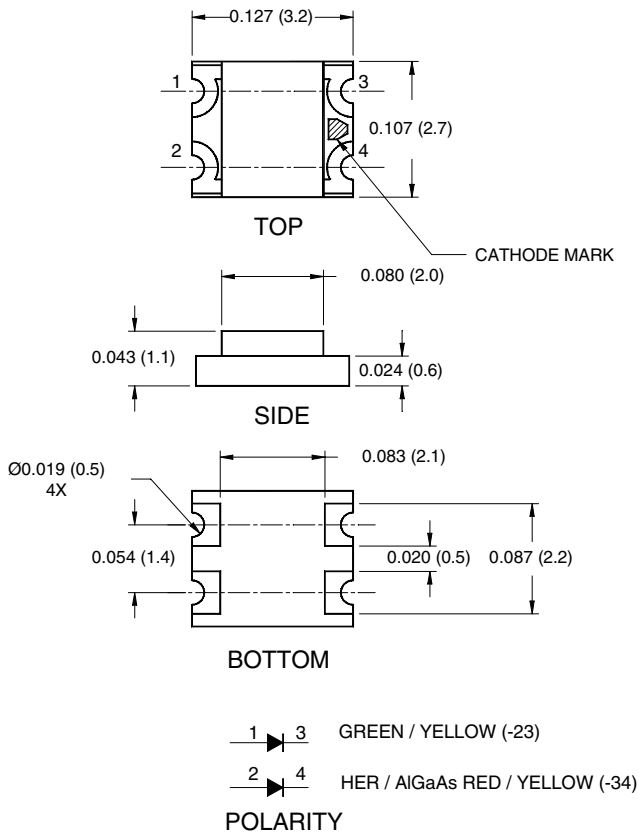
QTLP650C-23 HER/Yellow

QTLP650C-34 Yellow/Green

QTLP650C-24 HER/Green

QTLP650C-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 - 3.2(L) X 2.7(W) X 1.1(H) mm
- Wide viewing angle of 140°
- 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	QTLP650C				Units
		-23	-24	-34	-74	
Continuous Forward Current	I_F	30 / 30	30 / 30	30 / 30	30 / 30	mA
Peak Forward Current ($f = 1.0$ KHz, Duty Factor = 1/10)	I_{FM}	160 / 160	160 / 160	160 / 160	180 / 160	mA
Reverse Voltage	V_R	5	5	5	5	V
Power Dissipation	P_D	84 / 84	84 / 84	84 / 84	72 / 84	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 ($T_A = 25^\circ\text{C}$)

Parameter	Symbol	QTLP650C				Units
		-23	-24	-34	-74	
Luminous Intensity (mcd)	I_V	2.5 / 4.0	2.5 / 4.0	4.0 / 4.0	9.0 / 4.0	$I_F = 20\text{mA}$
Minimum		4.0 / 6.5	4.0 / 6.5	6.5 / 6.5	15 / 6.5	
Typical						
Forward Voltage (V)	V_F	2.8 / 2.8	2.8 / 2.8	2.8 / 2.8	2.4 / 2.8	$I_F = 20\text{mA}$
Maximum		2.0 / 2.0	2.0 / 2.0	2.0 / 2.0	1.9 / 2.0	
Typical						
Wavelength (nm)	λ_P	635 / 585	635 / 565	585 / 565	660 / 565	$I_F = 20\text{mA}$
Peak		630 / 590	630 / 570	590 / 570	645 / 570	
Dominant	λ_D					
Spectral Line Half Width (nm)	$\Delta\lambda$	45 / 35	45 / 30	35 / 30	20 / 30	$I_F = 20\text{mA}$
Viewing Angle ($^\circ$)	$2\theta_{1/2}$	140	140	140	140	$I_F = 20\text{mA}$

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TYPICAL PERFORMANCE CURVES

Fig. 1 Forward Current vs. Forward Voltage

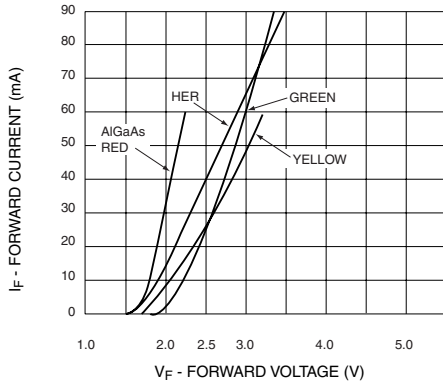


Fig. 2 Relative Luminous Intensity vs. DC Forward Current

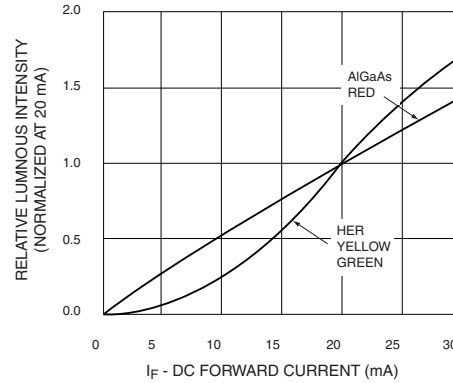


Fig. 3 Relative Intensity vs. Peak Wavelength

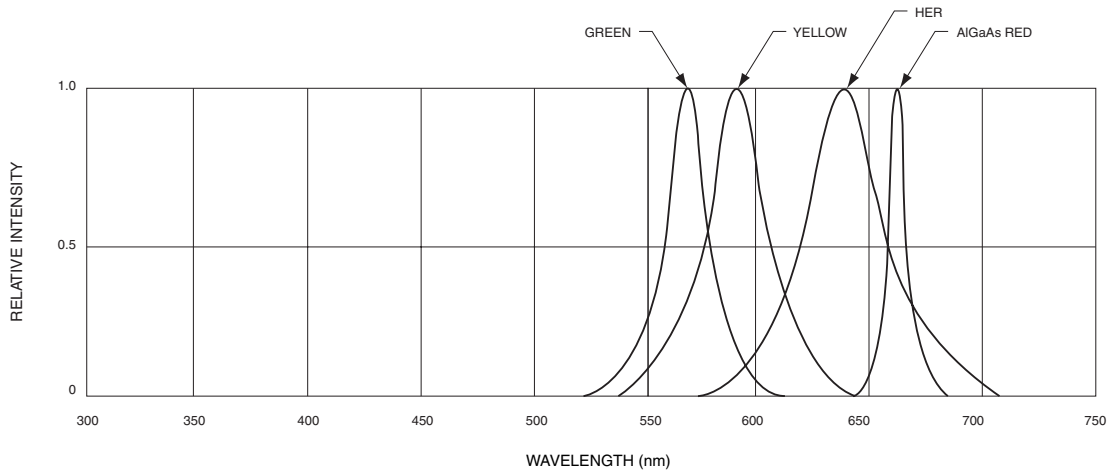


Fig. 4 Radiation Diagram

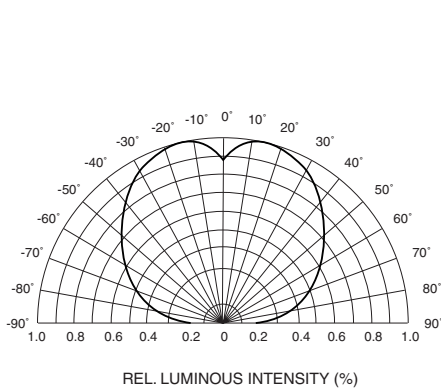
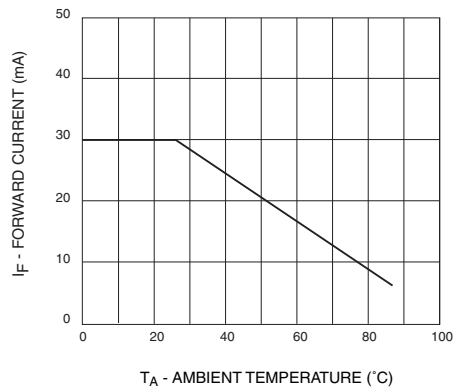


Fig. 5 Maximum Forward Current vs. Ambient Temperature



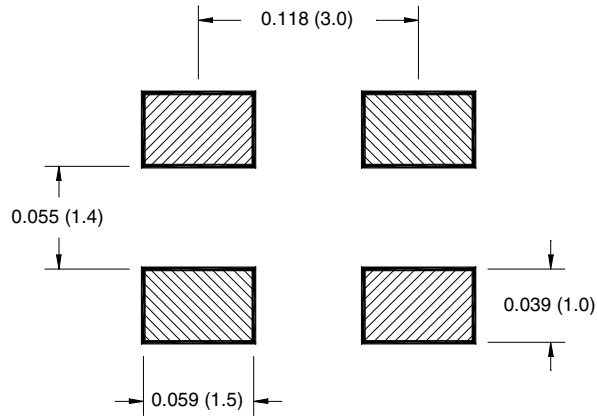
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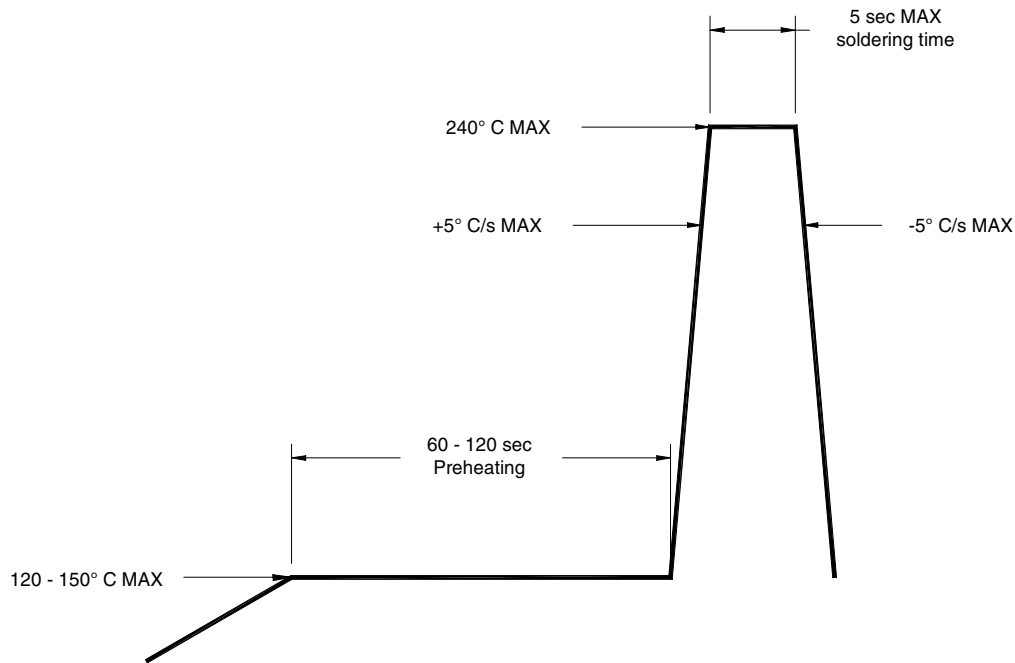
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RECOMMENDED PRINTED CIRCUIT BOARD PATTERN



RECOMMENDED IR REFLOW SOLDERING PROFILE



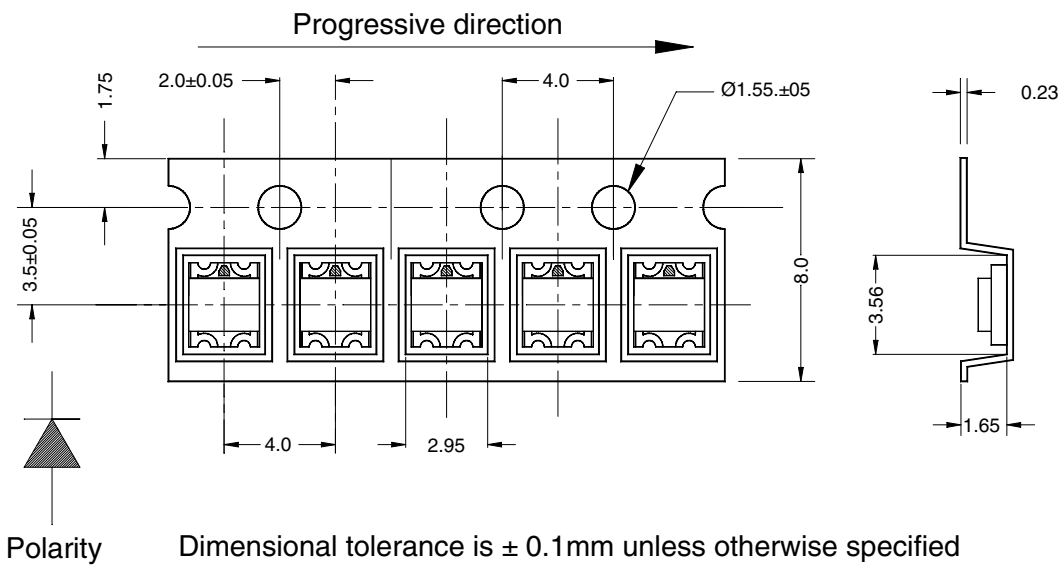
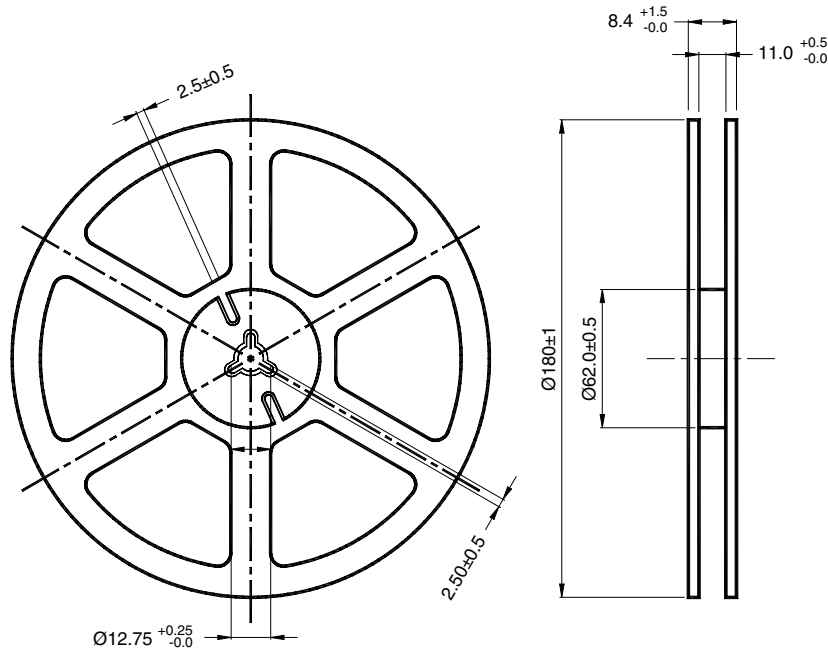
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TAPE AND REEL DIMENSIONS



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

Angle: ± 0.5

Unit: mm

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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.