

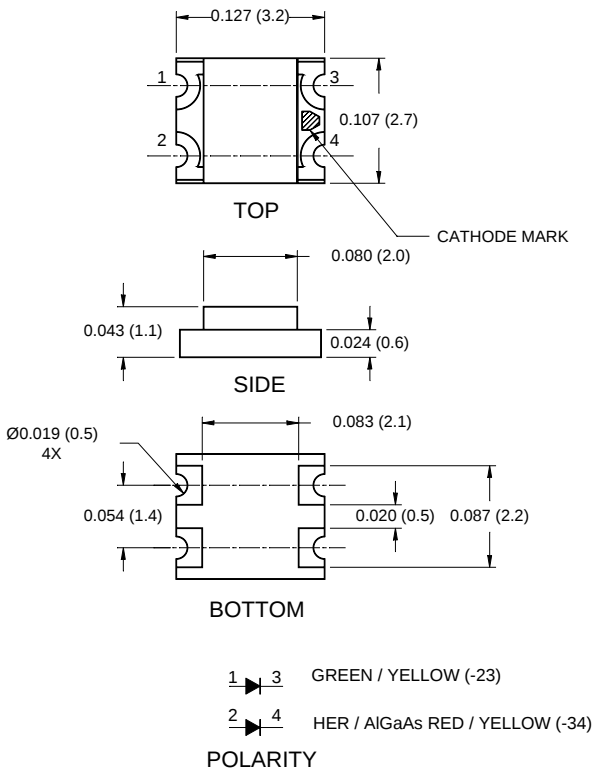
QTLP650C-23 HER/Yellow

QTLP650C-34 Yellow/Green

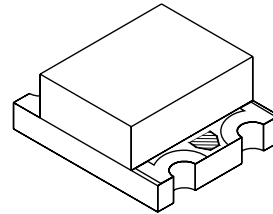
QTLP650C-24 HER/Green

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

SURFACE MOUNT LED LAMP

STANDARD BRIGHT 1210

QTL P650C-23 HER/Yellow

QTL P650C-24 HER/Green

QTL P650C-34 Yellow/Green

QTL P650C-74 AlGaAs Red/Green

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

Parameter	Symbol	QTL P650C				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				°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)

Parameter	Symbol	QTL P650C				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 = 20mA
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 = 20mA
Maximum		2.0 / 2.0	2.0 / 2.0	2.0 / 2.0	1.9 / 2.0	
Typical						
Wavelength (nm)	I _P	635 / 585	635 / 565	585 / 565	660 / 565	I _F = 20mA
Peak		630 / 590	630 / 570	590 / 570	645 / 570	
Dominant	I _D					
Spectral Line Half Width (nm)	DI	45 / 35	45 / 30	35 / 30	20 / 30	I _F = 20mA
Viewing Angle (°)	2U1/2	140	140	140	140	I _F = 20mA

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TYPICAL PERFORMANCE CURVES

Fig. 1 Forward Current vs. Forward Voltage

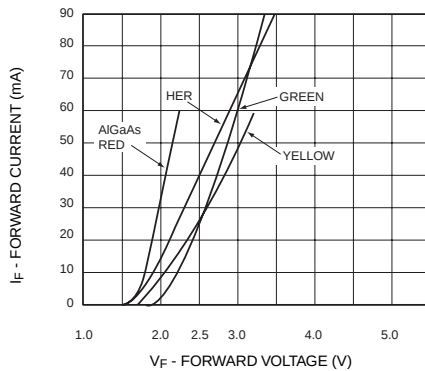


Fig. 2 Relative Luminous Intensity vs. DC Forward Current

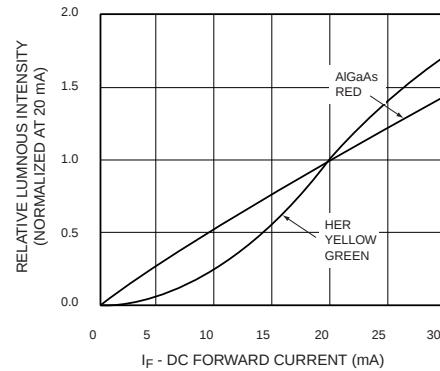


Fig. 3 Relative Intensity vs. Peak Wavelength

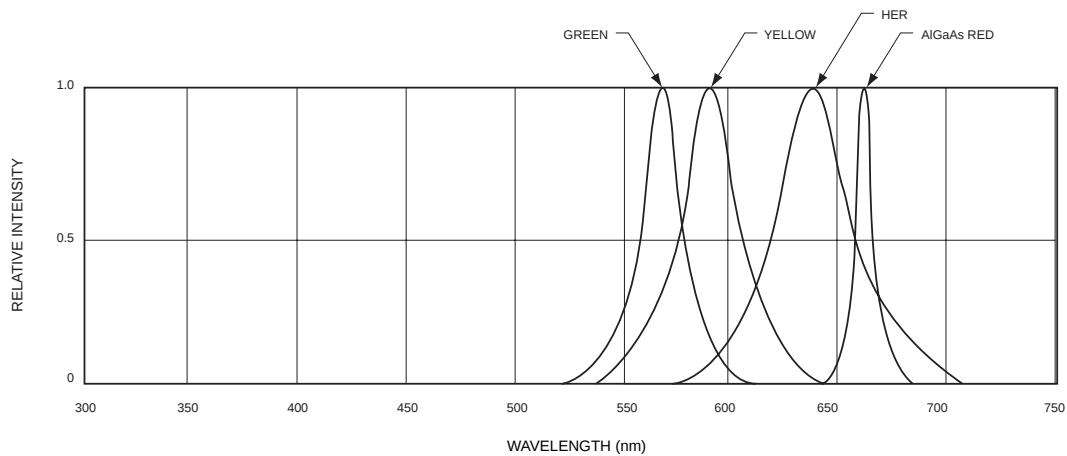


Fig. 4 Radiation Diagram

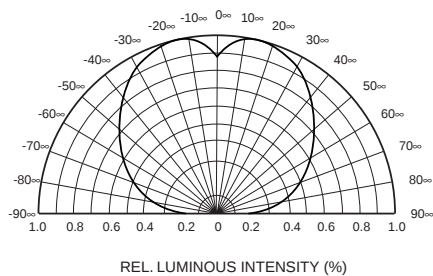
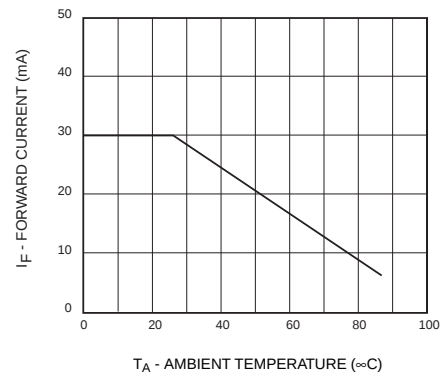


Fig. 5 Maximum Forward Current vs. Ambient Temperature



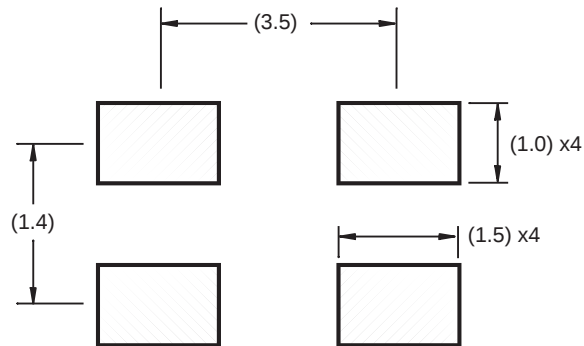
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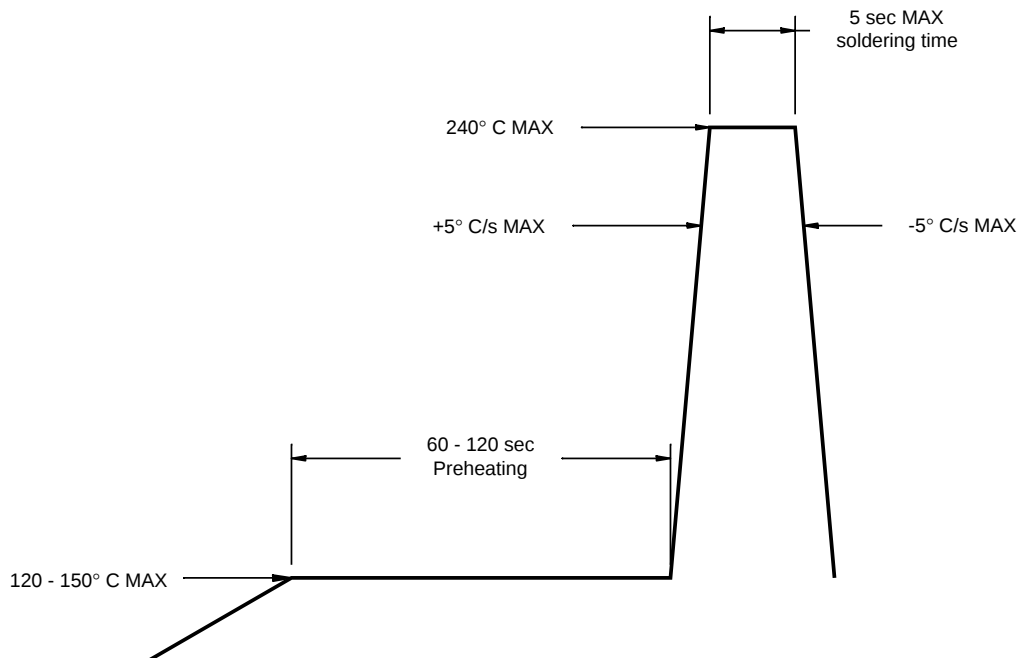
QTLP650C-74 AlGaAs Red/Green

RECOMMENDED PRINTED CIRCUIT BOARD PATTERN



Note: All units are in mm

RECOMMENDED IR REFLOW SOLDERING PROFILE



SURFACE MOUNT LED LAMP

STANDARD BRIGHT 1210

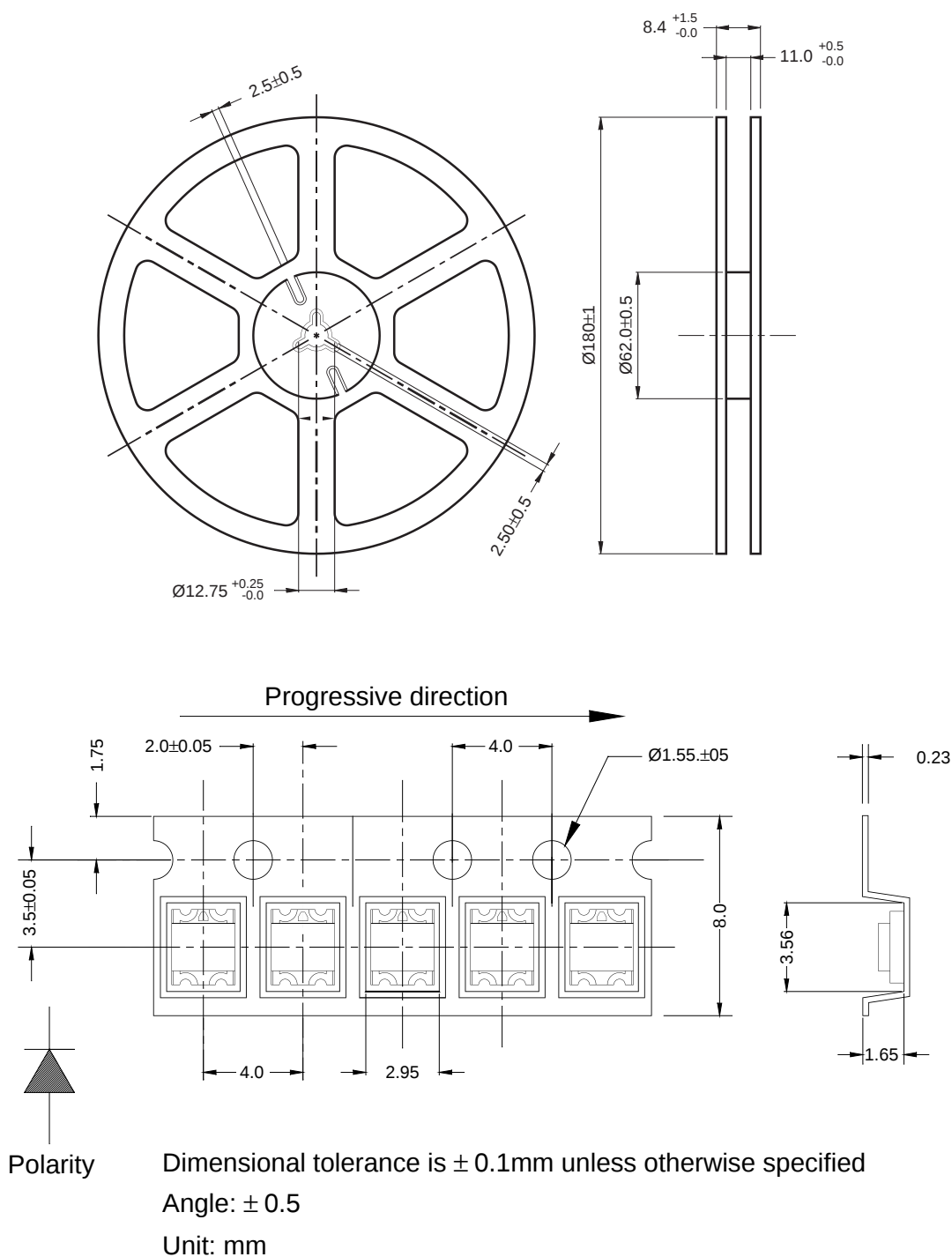
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TAPE AND REEL DIMENSIONS



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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.