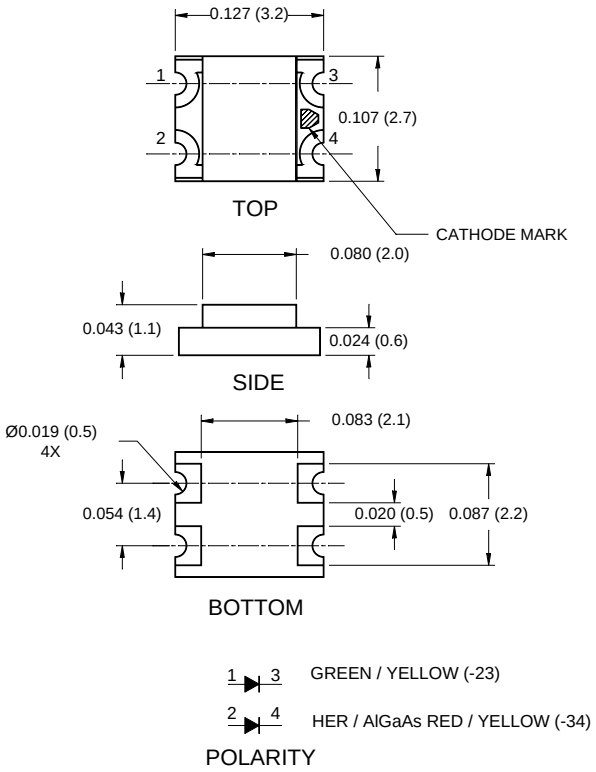
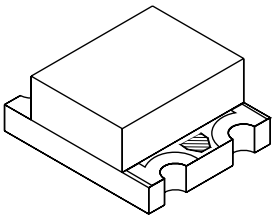
SURFACE MOUNT LED LAMP
STANDARD BRIGHT 1210

QTLP650C-23 HER/Yellow
QTLP650C-24 HER/Green
QTLP650C-34 Yellow/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°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				°C
Storage Temperature	T_{STG}	-40 to +90				°C
Lead Soldering Time	T_{SOL}	260 for 5 sec				°C

ELECTRICAL / OPTICAL CHARACTERISTICS (TA =25°C)

Parameter	Symbol	QTLP650C				Units
		-23	-24	-34	-74	
Luminous Intensity (mcd)						
Minimum	I_V	2.5 / 4.0	2.5 / 4.0	4.0 / 4.0	9.0 / 4.0	I_F = 20mA
Typical		4.0 / 6.5	4.0 / 6.5	6.5 / 6.5	15 / 6.5	
Forward Voltage (V)						
Maximum	V_F	2.8 / 2.8	2.8 / 2.8	2.8 / 2.8	2.4 / 2.8	I_F = 20mA
Typical		2.0 / 2.0	2.0 / 2.0	2.0 / 2.0	1.9 / 2.0	
Wavelength (nm)						
Peak	I_P	635 / 585	635 / 565	585 / 565	660 / 565	I_F = 20mA
Dominant	I_D	630 / 590	630 / 570	590 / 570	645 / 570	
Spectral Line Half Width (nm)	Dl	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

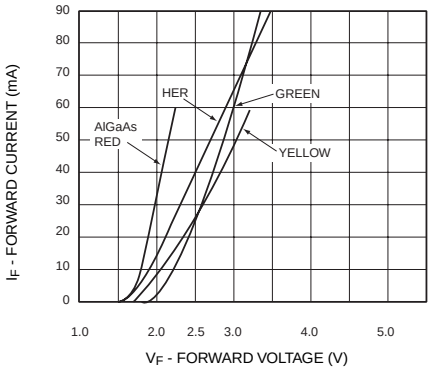


Fig. 2 Relative Luminous Intensity vs. DC Forward Current

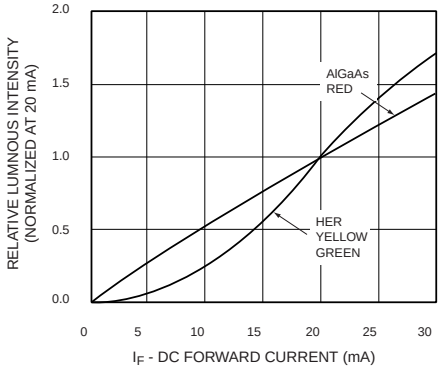


Fig. 3 Relative Intensity vs. Peak Wavelength

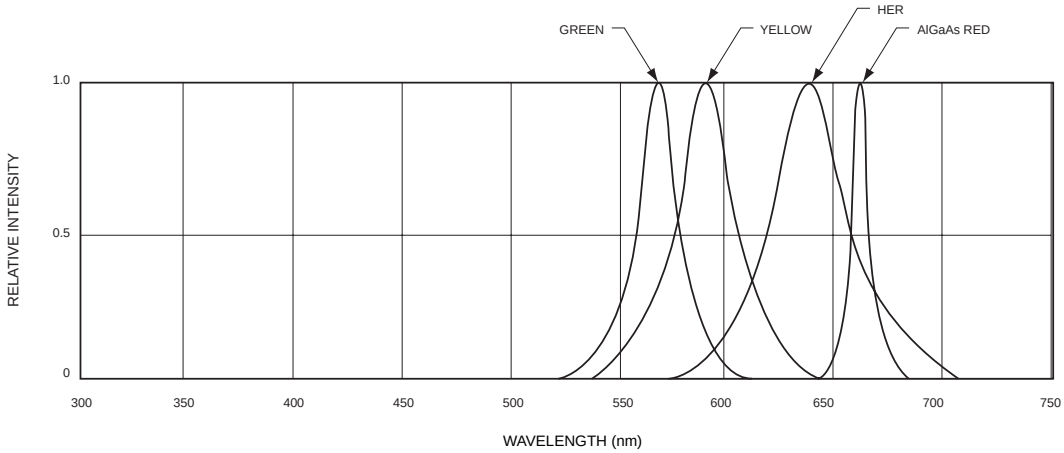


Fig.4 Radiation Diagram

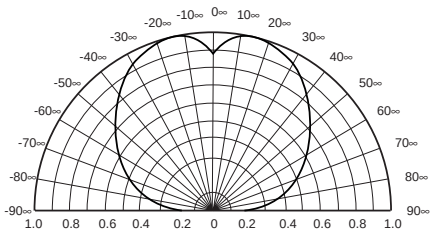
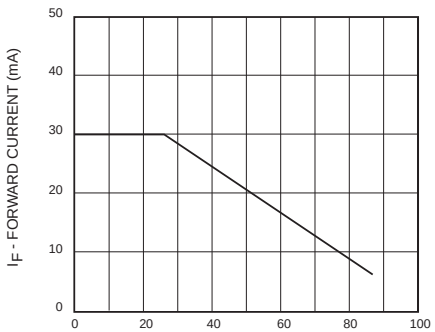


Fig.5 Maximum Forward Current vs. Ambient Temperature



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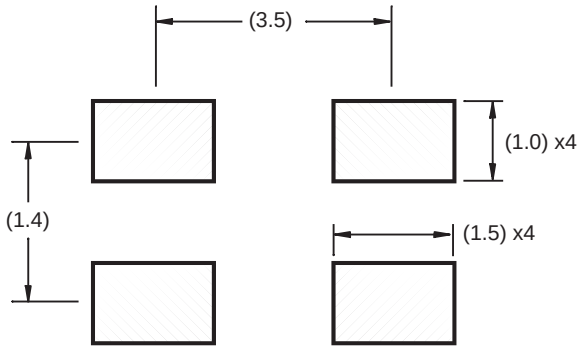
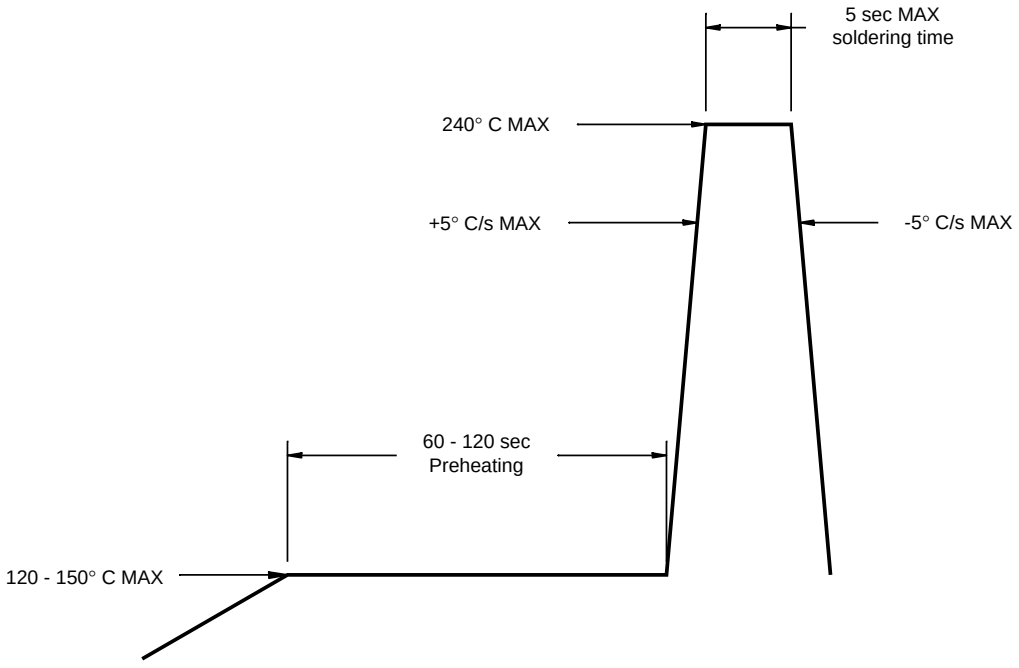
RECOMMENDED PRINTED CIRCUIT BOARD PATTERN



Note: All units are in mm

RECOMMENDED IR REFLOW SOLDERING PROFILE



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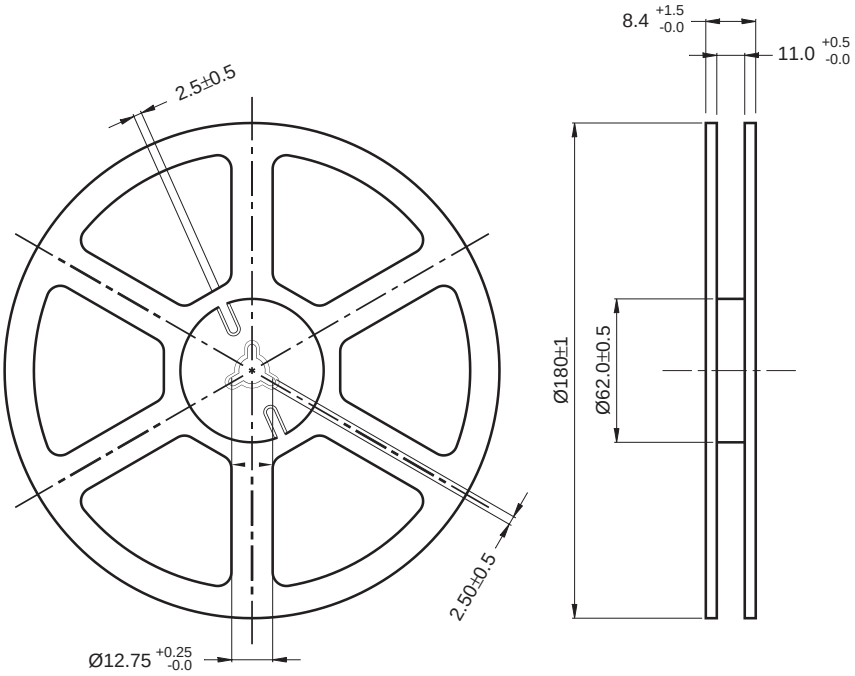
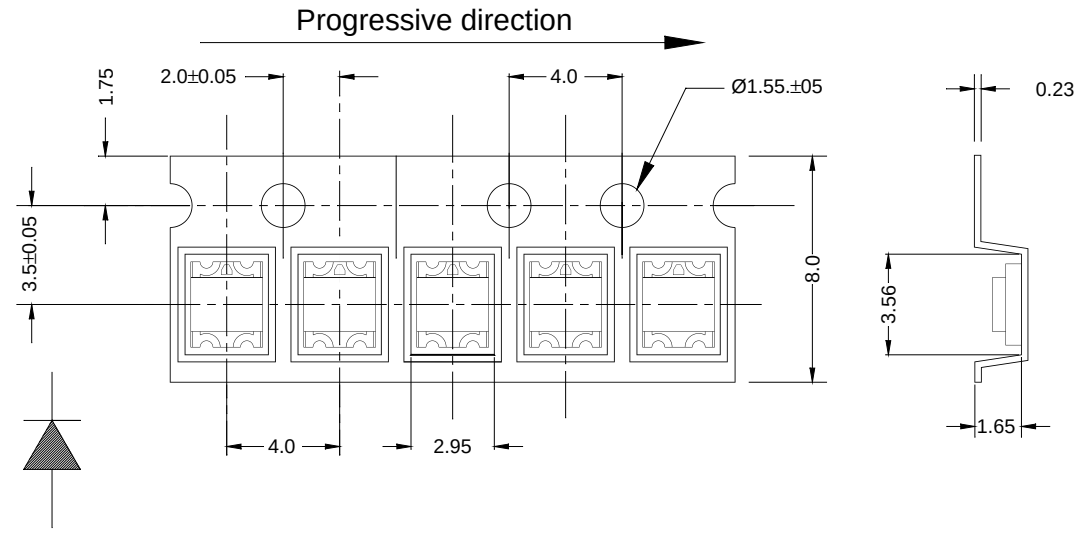
TAPE AND REEL DIMENSIONS





Dimensional tolerance is ± 0.1mm unless otherwise specified
Angle: ± 0.5
Unit: mm

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