

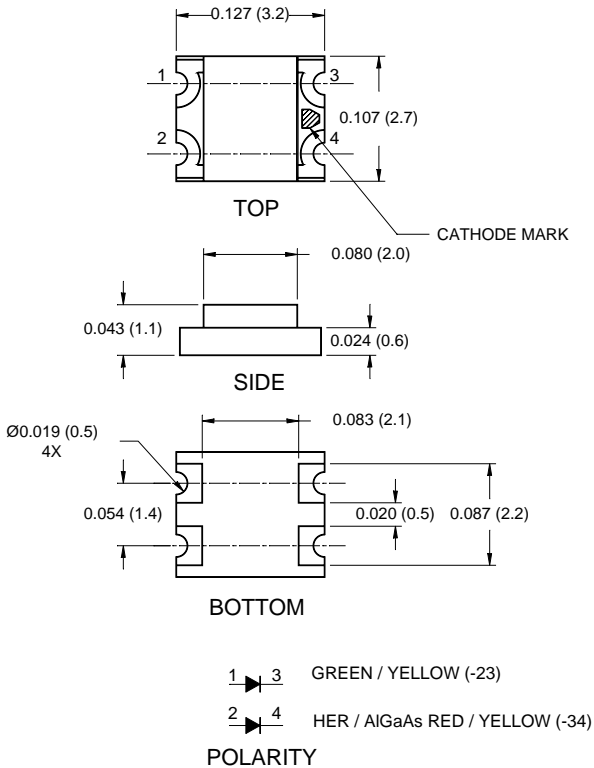
QTLP650C-23 HER/Yellow

QTLP650C-24 HER/Green

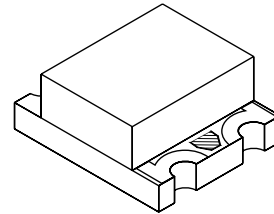
QTLP650C-34 Yellow/Green

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

QTLP650C-23 HER/Yellow

QTLP650C-24 HER/Green

QTLP650C-34 Yellow/Green

QTLP650C-74 AlGaAs Red/Green

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	V_F	2.8 / 2.8	2.8 / 2.8	2.8 / 2.8	2.4 / 2.8	$I_F = 20\text{mA}$
Forward Voltage (V)		2.0 / 2.0	2.0 / 2.0	2.0 / 2.0	1.9 / 2.0	
Maximum	I_P	635 / 585	635 / 565	585 / 565	660 / 565	$I_F = 20\text{mA}$
Typical		630 / 590	630 / 570	590 / 570	645 / 570	
Wavelength (nm)	I_D	45 / 35	45 / 30	35 / 30	20 / 30	$I_F = 20\text{mA}$
Peak	2U1/2	140	140	140	140	$I_F = 20\text{mA}$
Dominant		140	140	140	140	
Spectral Line Half Width (nm)						
Viewing Angle ($^\circ$)						

QTLP650C-23 HER/Yellow

QTLP650C-24 HER/Green

QTLP650C-34 Yellow/Green

QTLP650C-74 AlGaAs Red/Green

TYPICAL PERFORMANCE CURVES

Fig. 1 Forward Current vs. Forward Voltage

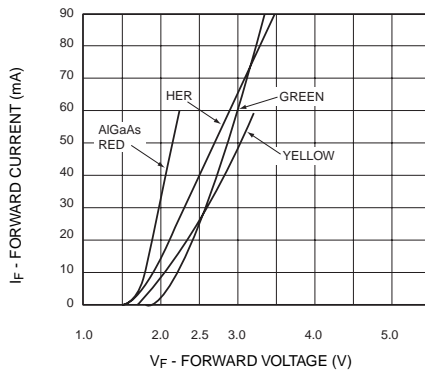


Fig. 2 Relative Luminous Intensity vs. DC Forward Current

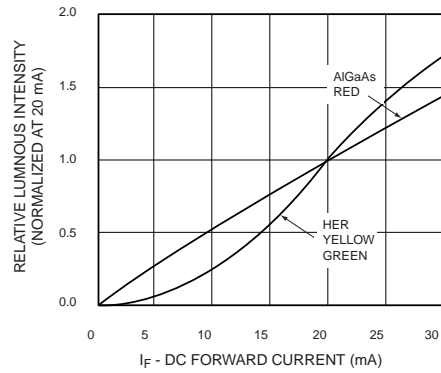


Fig. 3 Relative Intensity vs. Peak Wavelength

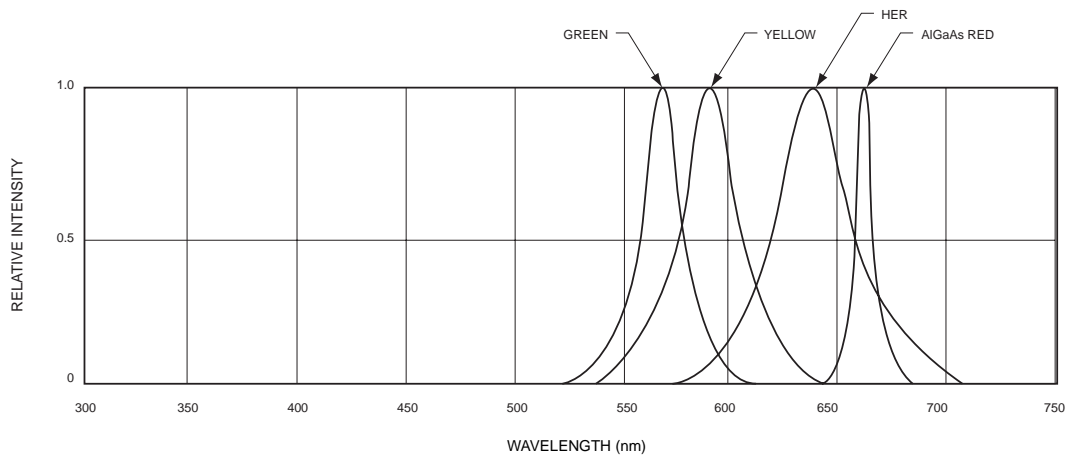


Fig.4 Radiation Diagram

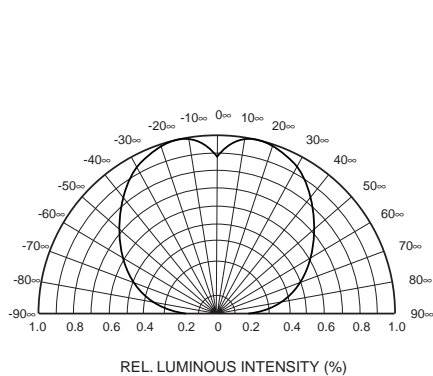
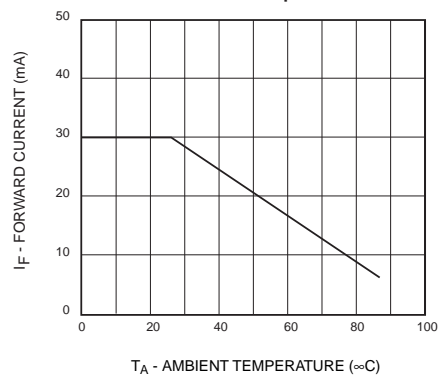


Fig.5 Maximum Forward Current vs. Ambient Temperature



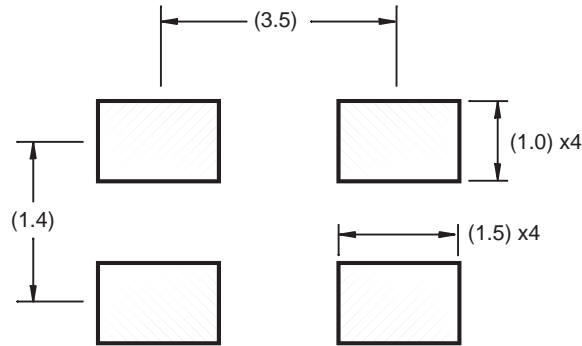
QTLP650C-23 HER/Yellow

QTLP650C-24 HER/Green

QTLP650C-34 Yellow/Green

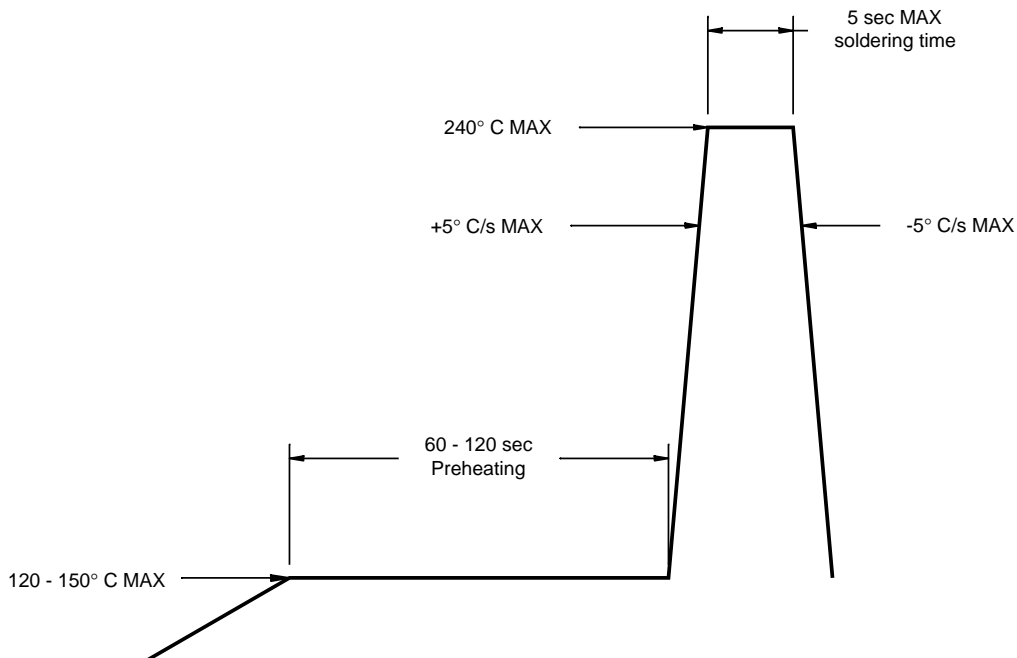
QTLP650C-74 AlGaAs Red/Green

RECOMMENDED PRINTED CIRCUIT BOARD PATTERN



Note: All units are in mm

RECOMMENDED IR REFLOW SOLDERING PROFILE



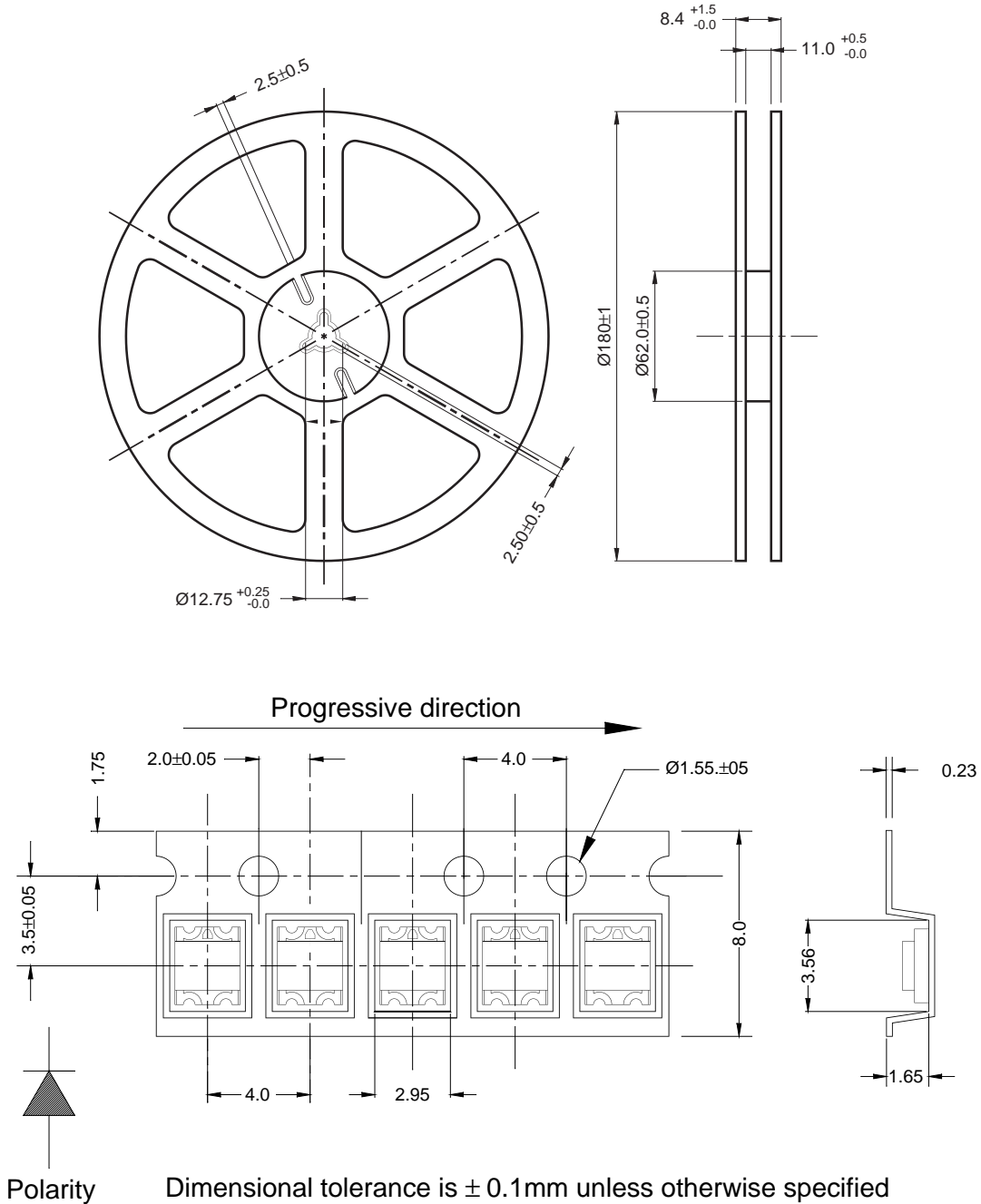
QTLP650C-23 HER/Yellow

QTLP650C-24 HER/Green

QTLP650C-34 Yellow/Green

QTLP650C-74 AlGaAs Red/Green

TAPE AND REEL DIMENSIONS



Polarity

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

Angle: ± 0.5

Unit: mm

QTLP650C-23 HER/Yellow

QTLP650C-24 HER/Green

QTLP650C-34 Yellow/Green

QTLP650C-74 AlGaAs Red/Green

DISCLAIMER

FAIRCHILD SEMICONDUCTOR RESERVES THE RIGHT TO MAKE CHANGES WITHOUT FURTHER NOTICE TO ANY PRODUCTS HEREIN TO IMPROVE RELIABILITY, FUNCTION OR DESIGN. FAIRCHILD DOES NOT ASSUME ANY LIABILITY ARISING OUT OF THE APPLICATION OR USE OF ANY PRODUCT OR CIRCUIT DESCRIBED HEREIN; NEITHER DOES IT CONVEY ANY LICENSE UNDER ITS PATENT RIGHTS, NOR THE RIGHTS OF OTHERS.

LIFE SUPPORT POLICY

FAIRCHILD'S PRODUCTS ARE NOT AUTHORIZED FOR USE AS CRITICAL COMPONENTS IN LIFE SUPPORT DEVICES OR SYSTEMS WITHOUT THE EXPRESS WRITTEN APPROVAL OF THE PRESIDENT OF FAIRCHILD SEMICONDUCTOR CORPORATION. As used herein:

1. Life support devices or systems are devices or systems which, (a) are intended for surgical implant into the body, or (b) support or sustain life, and (c) whose failure to perform when properly used in accordance with instructions for use provided in the labeling, can be reasonably expected to result in a significant injury of the user.
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.