



SURFACE MOUNT LED LAMP

STANDARD BRIGHT 1206 (Inner Lens)

QTL651C-2 HER

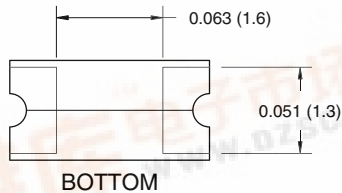
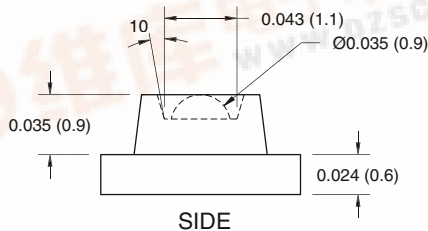
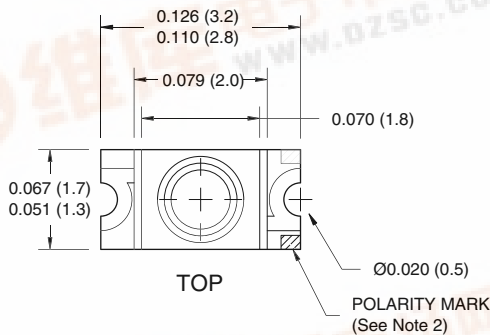
QTL651C-3 Yellow

QTL651C-4 Green

QTL651C-7 AlGaAs Red

QTL651C-B Blue

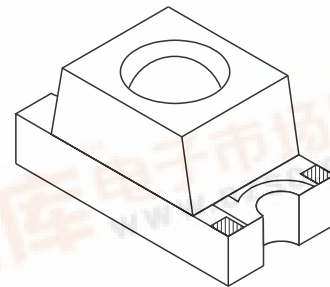
PACKAGE DIMENSIONS



+ — — — - for -2, -3, -4 and -B
- — — — + for -7
POLARITY

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 ($I_R = 10\text{ }\mu\text{A}$)	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	$I_F = 20\text{mA}$
Minimum		15	18	35	50	35	
Typical	V_F	2.8	2.8	2.8	2.4	4.5	$I_F = 20\text{mA}$
Forward Voltage (V)		2.0	2.0	2.1	1.9	3.8	
Maximum	I_P	635	585	565	660	430	$I_F = 20\text{mA}$
Typical		630	590	570	645	465	
Wavelength (nm)	I_D	45	35	30	20	65	$I_F = 20\text{mA}$
Peak	DI	20	20	20	20	20	$I_F = 20\text{mA}$
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

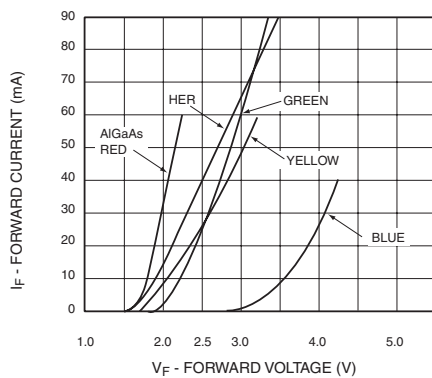


Fig. 2 Relative Luminous Intensity vs. DC Forward Current

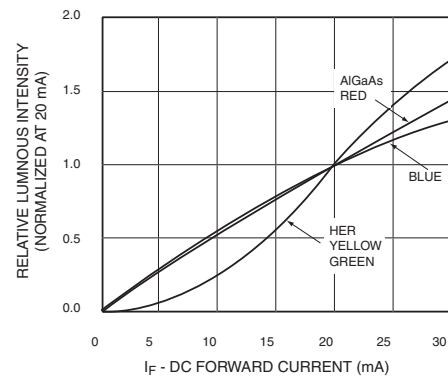


Fig. 3 Relative Intensity vs. Peak Wavelength

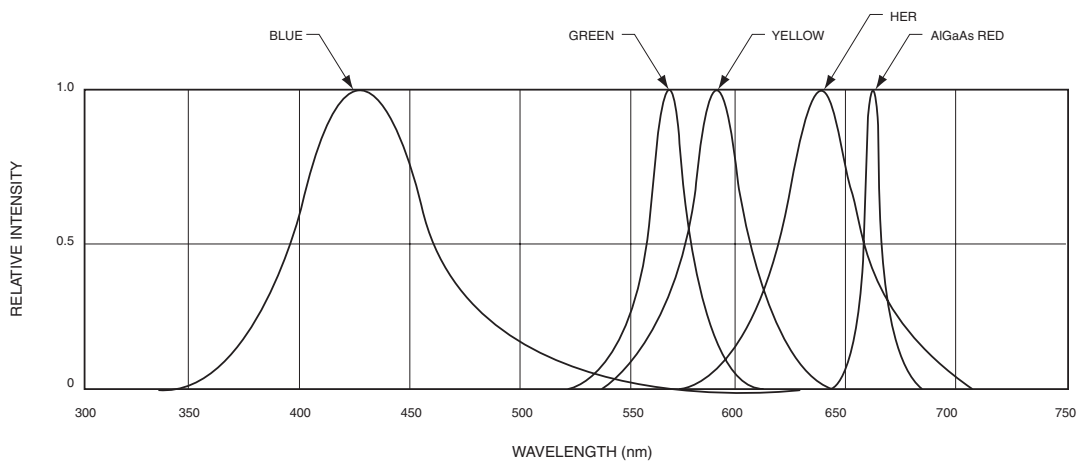


Fig. 4 Radiation Diagram

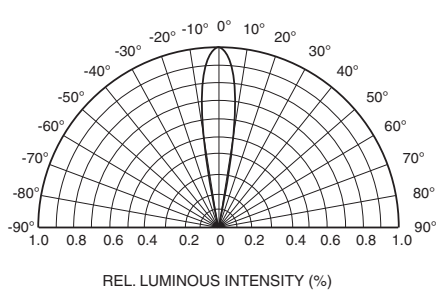
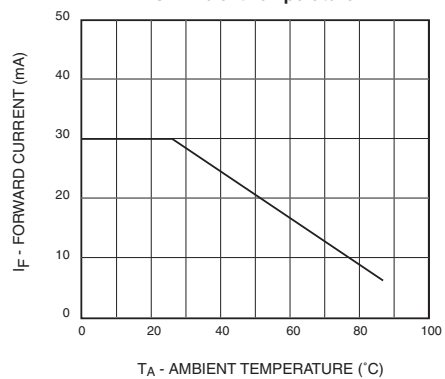


Fig. 5 Maximum Forward Current vs. Ambient Temperature





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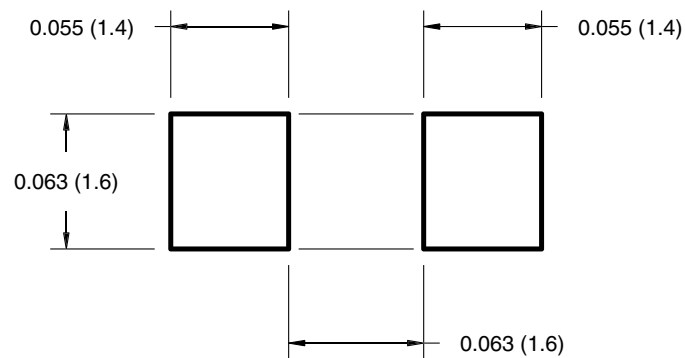
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QTLP651C-4 Green

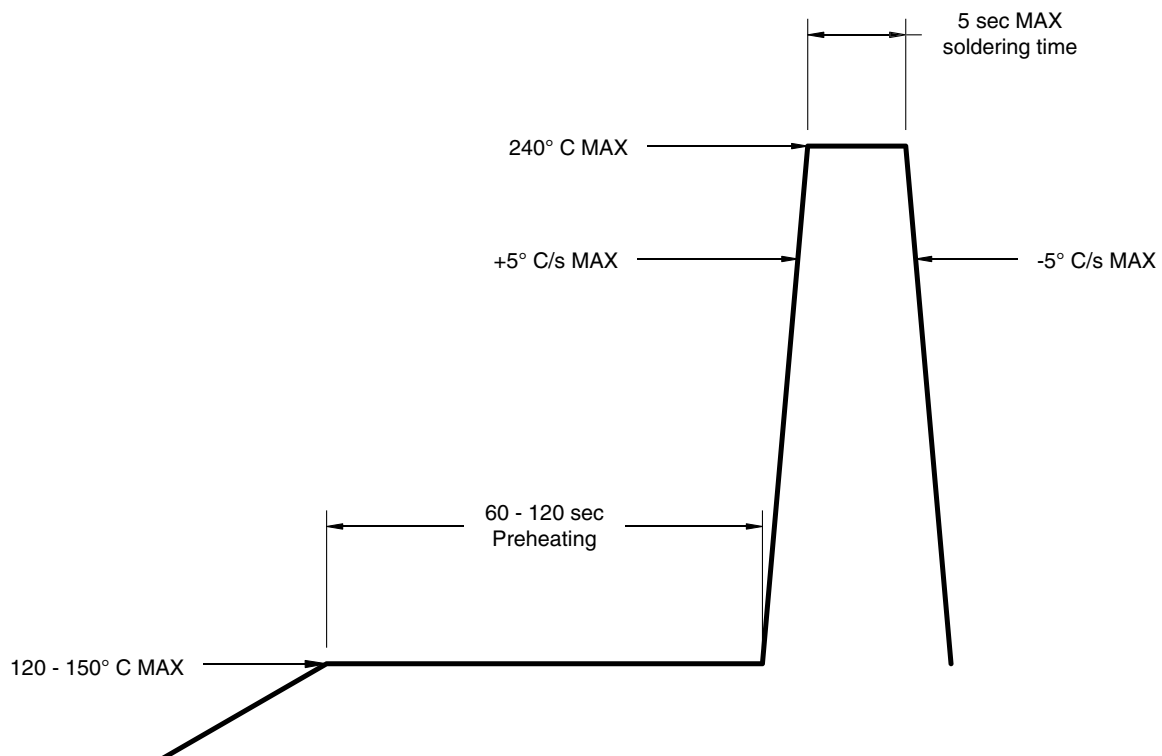
QTLP651C-7 AlGaAs Red

QTLP651C-B Blue

RECOMMENDED PRINTED CIRCUIT BOARD PATTERN

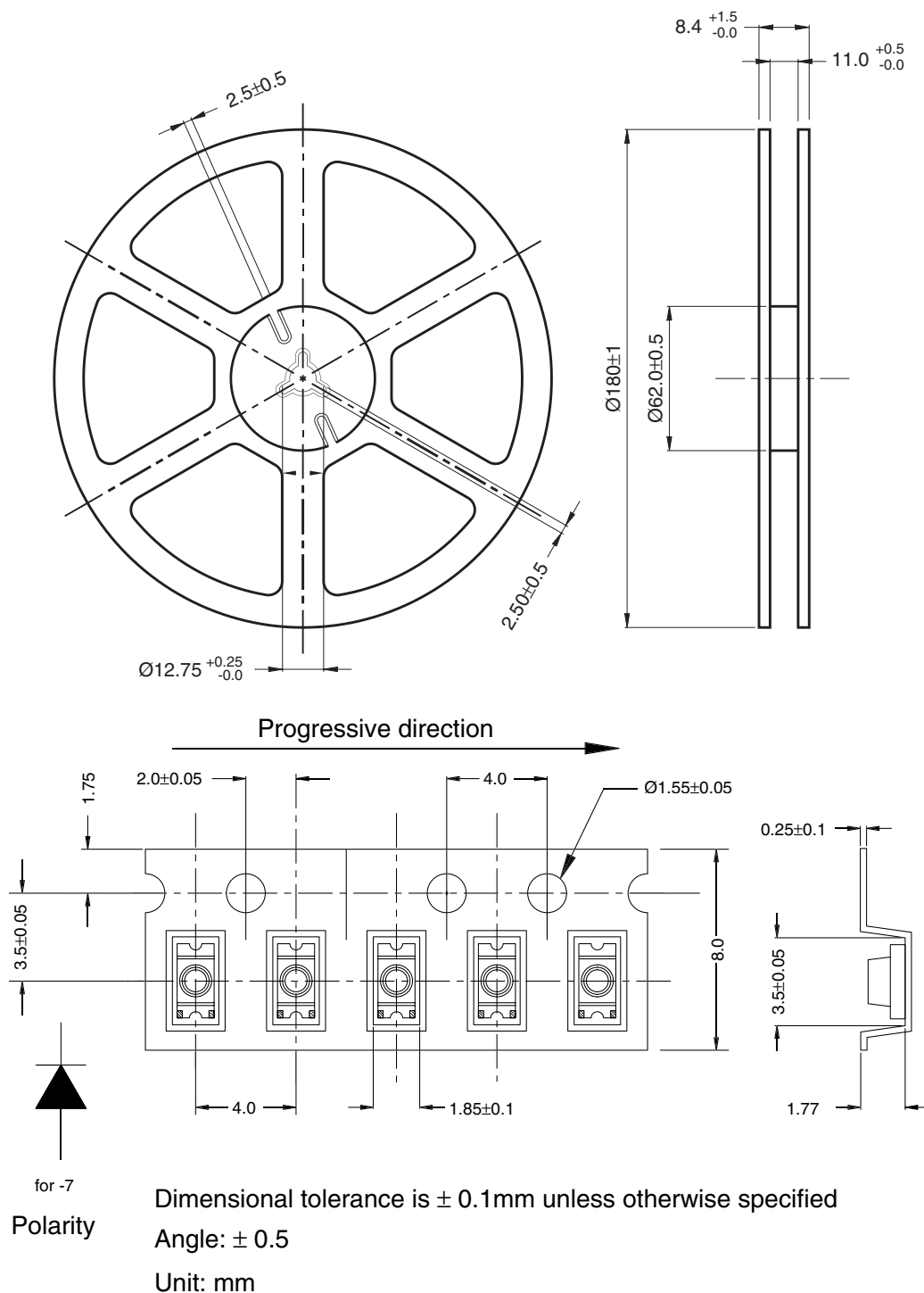


RECOMMENDED IR REFLOW SOLDERING PROFILE





QTLP651C-B Blue





QTLP651C-4 Green

QTLP651C-B Blue

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.