

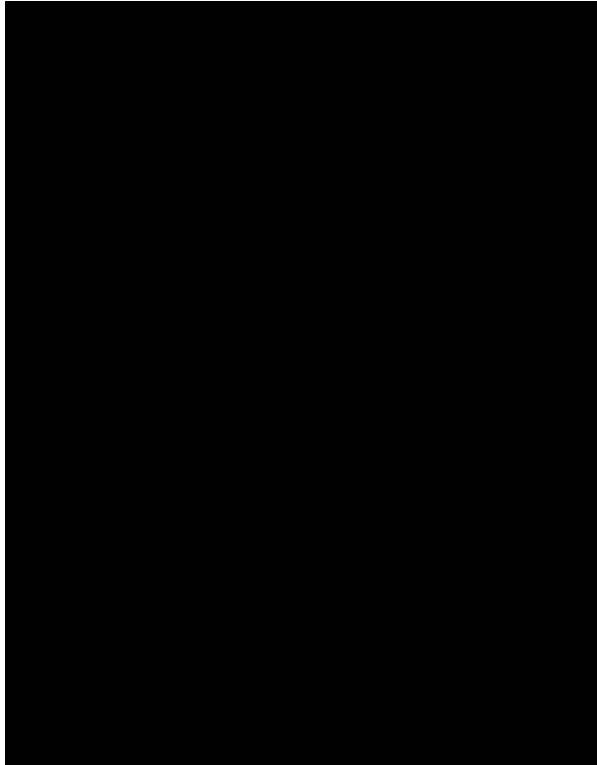
SURFACE MOUNT LED LAMP

STANDARD BRIGHT 1206

QTLP650C-2 / QTLP650D-2 HER
QTLP650C-4 / QTLP650D-4 Green
QTLP650C-B Blue

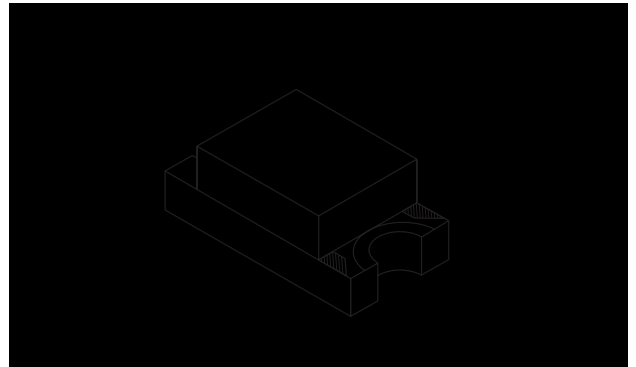
QTLP650C-3 / QTLP650D-3 Yellow
QTLP650C-7 / QTLP650D-7 AlGaAs Red

PACKAGE DIMENSIONS



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. Low profile and wide viewing angle make these LEDs ideal choices for backlighting applications and panel illumination.

FEATURES

- Small footprint - 3.2(L) X 1.6(W) X 1.1(H) mm
- Wide viewing angle of 140°(QTLP650C) or 160°(QTLP650D)
- Water clear (QTLP650C) or diffused (QTLP650D) 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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QTL650C-B Blue

ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ Unless otherwise specified)

Parameter	Symbol	QTL650C / QTL650D					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 ($I_R = 10 \mu\text{A}$)	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 ($T_A = 25^\circ\text{C}$)

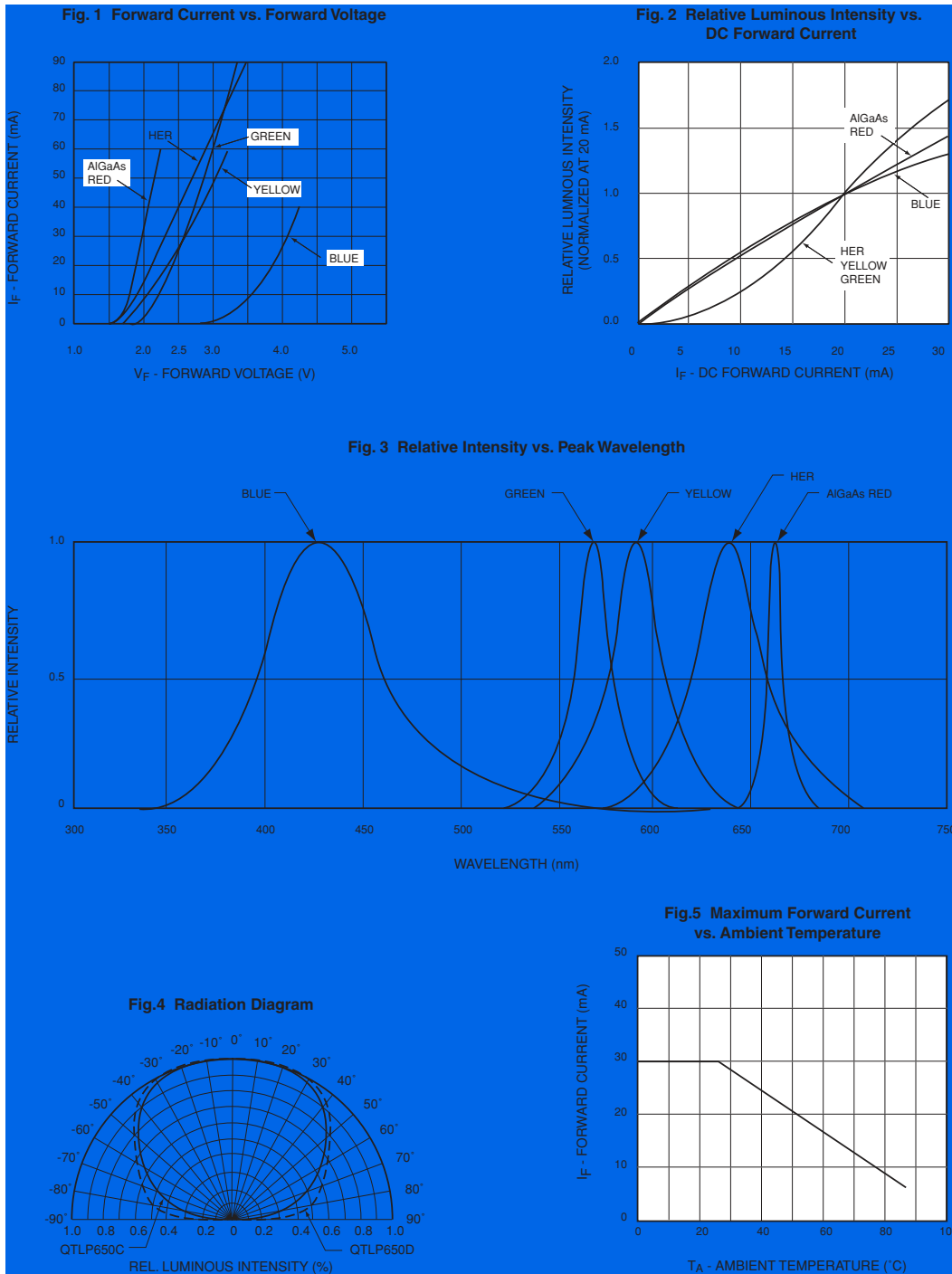
Part Number	Symbol	QTL650C / QTL650D					Condition
		-2	-3	-4	-7	-B*	
Luminous Intensity (mcd)	I_V	4 / 3	4 / 3	6 / 5	10 / 8	10 / -	$I_F = 20\text{mA}$
Minimum		10 / 8	10 / 8	10 / 8	20 / 15	20 / -	
Typical	V_F	2.8	2.8	2.8	2.4	4.5	$I_F = 20\text{mA}$
Forward Voltage (V)		2.0	2.0	2.1	1.9	3.8	
Maximum	λ_P	635	585	565	660	430	$I_F = 20\text{mA}$
Typical		λ_D	630	590	570	645	
Wavelength (nm)	$\Delta\lambda$	45	35	30	20	65	$I_F = 20\text{mA}$
Peak	$2\Theta_{1/2}$	140 / 160	140 / 160	140 / 160	140 / 160	140 / -	$I_F = 20\text{mA}$
Dominant							
Spectral Line Half Width (nm)							
Viewing Angle ($^\circ$)							

* Available only in QTL650C

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TYPICAL PERFORMANCE CURVES





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QTLP650C-2 / QTLP650D-2 HER

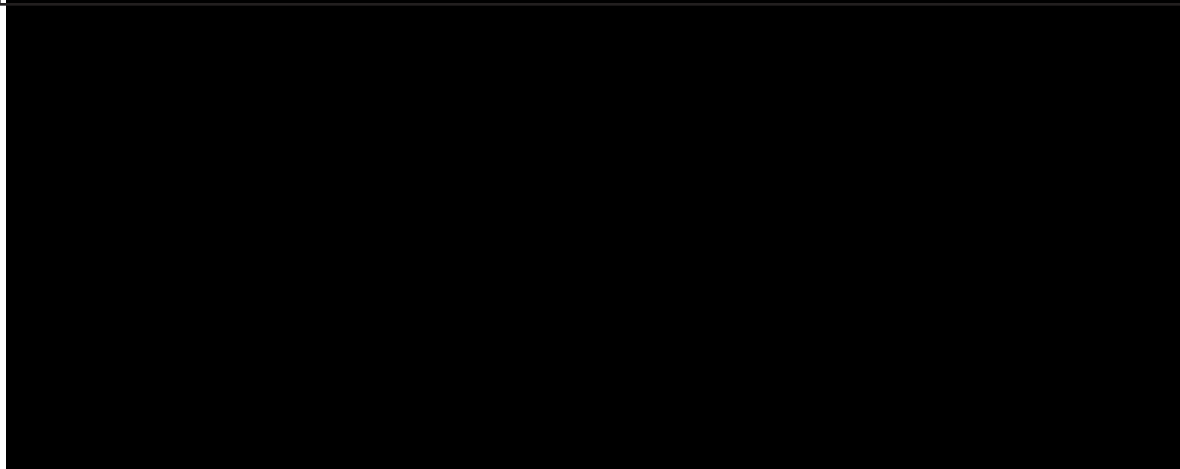
QTLP650C-3 / QTLP650D-3 Yellow

QTLP650C-4 / QTLP650D-4 Green

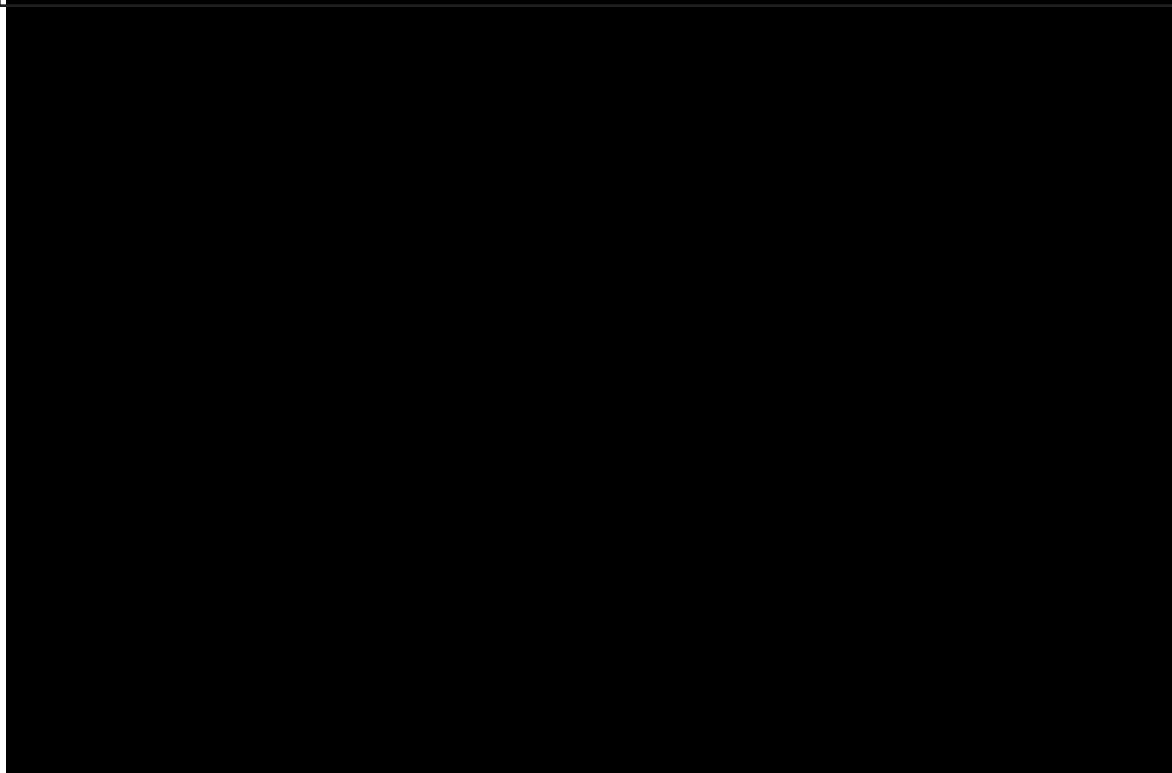
QTLP650C-7 / QTLP650D-7 AlGaAs Red

QTLP650C-B Blue

RECOMMENDED PRINTED CIRCUIT BOARD PATTERN



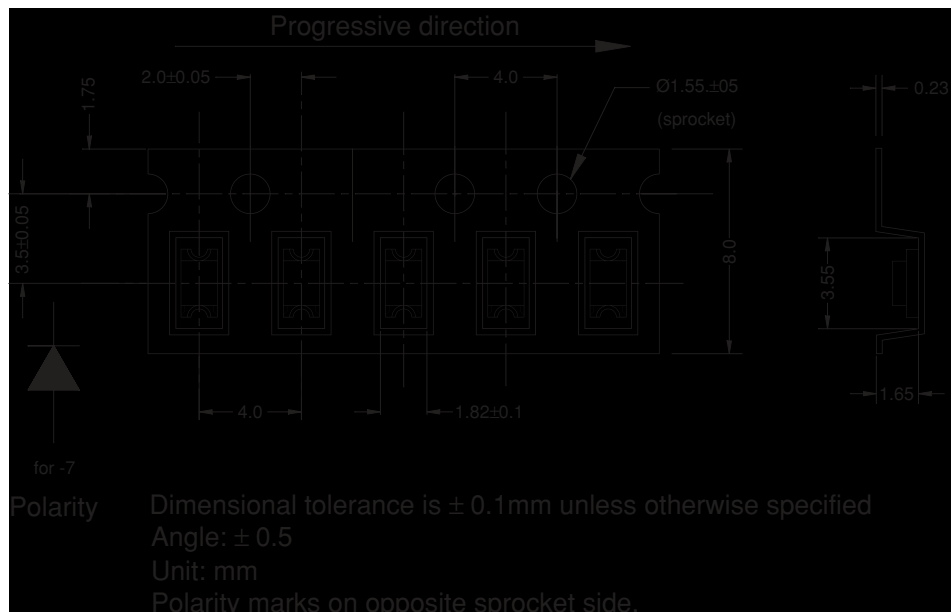
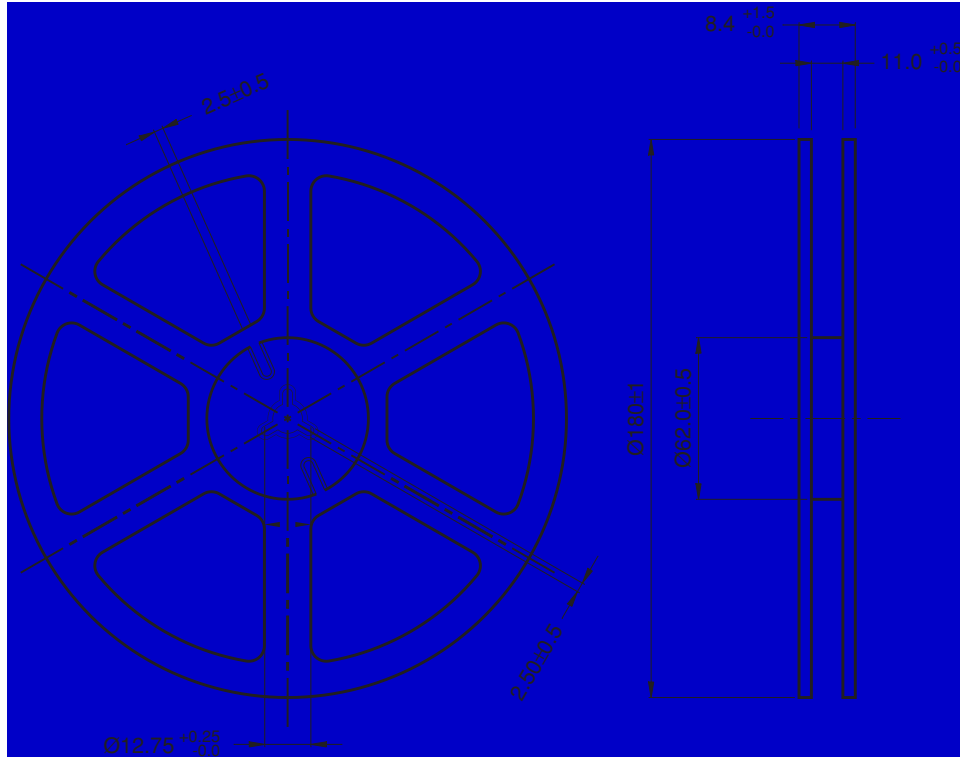
RECOMMENDED IR REFLOW SOLDERING PROFILE



QTLP650C-2 / QTLP650D-2 HER
QTLP650C-4 / QTLP650D-4 Green
QTLP650C-B Blue

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TAPE AND REEL DIMENSIONS





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QTLP650C-7 / QTLP650D-7 AlGaAs Red

QTLP650C-B Blue

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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.