

SURFACE MOUNT LED LAMP

STANDARD BRIGHT 0603 (0.8 mm Height)

QTLP600C

QTLP600C-2 HER

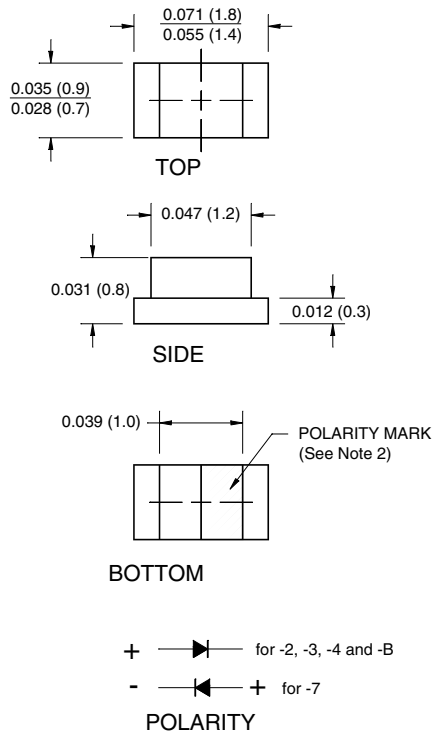
QTLP600C-3 Yellow

QTLP600C-4 Green

QTLP600C-7 AlGaAs Red

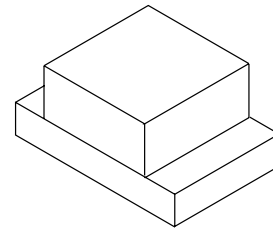
QTLP600C-B Blue

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. Small size, low profile and wide viewing angle make these LEDs ideal choices for backlighting applications and panel illumination.

FEATURES

- Miniature footprint - 1.6(L) X 0.8(W) X 0.8(H) mm
- Wide viewing angle of 100°
- 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	QTLP600C					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	QTLP600C					Condition
		-2	-3	-4	-7	-B	
Luminous Intensity (mcd)	I_V	5	5	9	10	15	$I_F = 20\text{mA}$
Minimum		9	9	18	20	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		2.0	2.0	2.1	1.9	3.8	
Typical	λ_P	635	585	565	660	430	$I_F = 20\text{mA}$
Wavelength (nm)		630	590	570	645	465	
Peak	λ_D	630	590	570	645	465	$I_F = 20\text{mA}$
Dominant	$\Delta\lambda$	45	35	30	20	65	$I_F = 20\text{mA}$
Spectral Line Half Width (nm)	$2\Theta_{1/2}$	100	100	100	100	100	$I_F = 20\text{mA}$
Viewing Angle ($^\circ$)		100	100	100	100	100	$I_F = 20\text{mA}$

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TYPICAL PERFORMANCE CURVES

Fig. 1 Forward Current vs. Forward Voltage

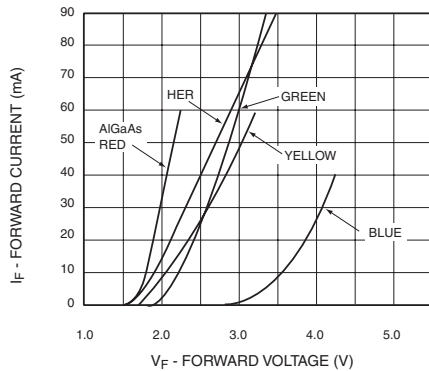


Fig. 2 Relative Luminous Intensity vs. DC Forward Current

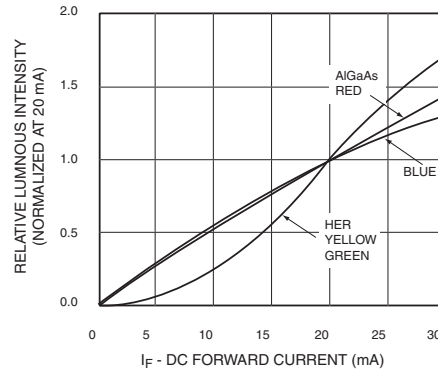


Fig. 3 Relative Intensity vs. Peak Wavelength

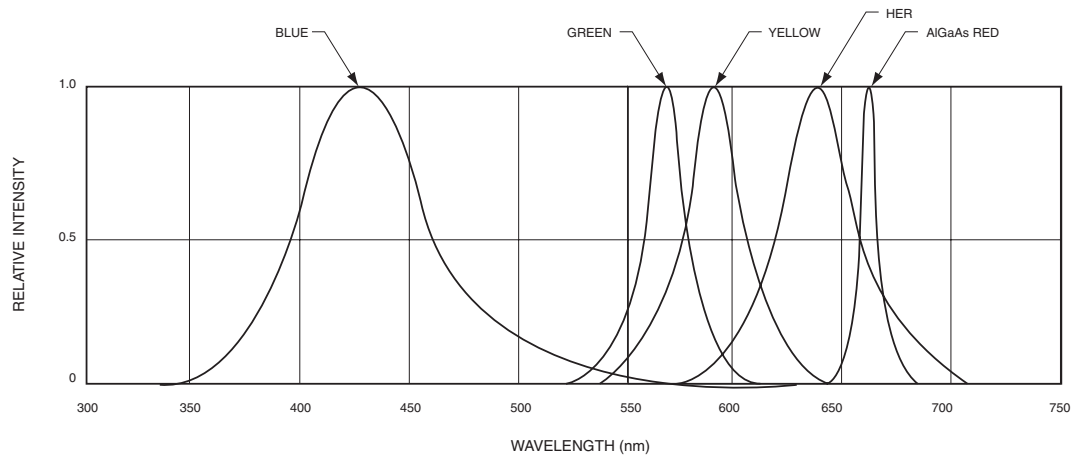


Fig.4 Radiation Diagram

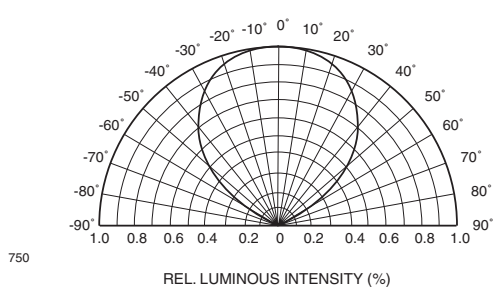
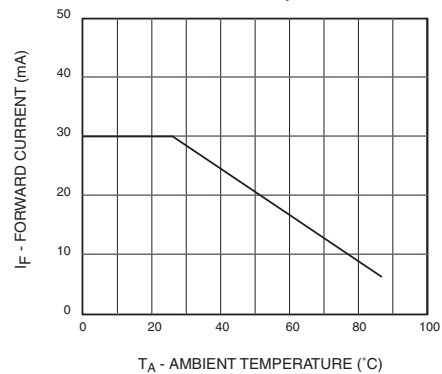


Fig.5 Maximum Forward Current vs. Ambient Temperature



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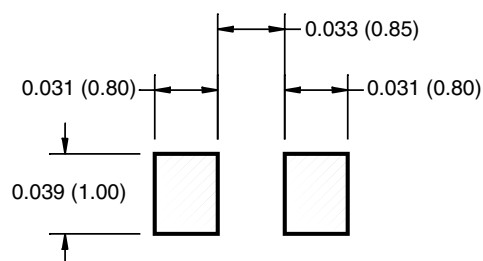
QTLP600C-3 Yellow

QTLP600C-4 Green

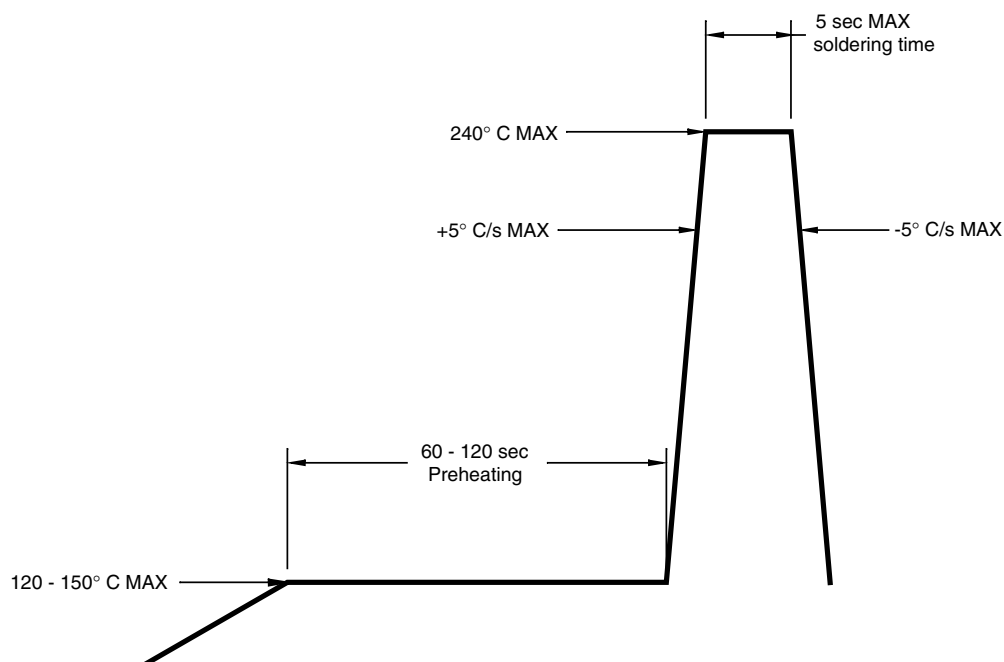
QTLP600C-7 AlGaAs Red

QTLP600C-B Blue

RECOMMENDED PRINTED CIRCUIT BOARD PATTERN



RECOMMENDED IR REFLOW SOLDERING PROFILE



QTLP600C-4 Green

QTL P600C-B Blue

Technical drawing of a progressive die, showing three views: top view, side view, and front view.

Top View:

- Overall diameter: $\varnothing 180 \pm 1$
- Inner diameter: $\varnothing 62.0 \pm 0.5$
- Central hole diameter: $\varnothing 12.75^{+0.25}_{-0.0}$
- Radial slot width: 2.5 ± 0.5
- Radial slot depth: 2.50 ± 0.5

Side View:

- Overall thickness: $8.4^{+1.5}_{-0.0}$
- Inner thickness: $11.0^{+0.5}_{-0.0}$

Front View:

- Progressive direction: Indicated by an arrow pointing right.
- Overall width: 8.0
- Overall height: 3.5 ± 0.05
- Top edge radius: 1.75
- Top edge chamfer: 2.0 ± 0.05
- Top edge chamfer angle: 4.0
- Top edge chamfer radius: $\varnothing 1.55 \pm 0.05$
- Top edge chamfer depth: 0.9
- Top edge chamfer width: 4.0
- Top edge chamfer height: 0.9
- Top edge chamfer radius: 0.23 ± 0.1
- Top edge chamfer depth: 1.9 ± 0.1
- Top edge chamfer width: 0.9

Unit: mm

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