

QTLP651C-R	Red	QTLP651C-E	Orange
QTLP651C-O	Yellow-Orange	QTLP651C-Y	Yellow
QTLP651C-AG	Yellow-Green	QTLP651C-IG	True Green
QTLP651C-IB	Blue		

Surface Mount LED Lamp Super Bright 1206 (Inner Lens)

Features

- Small footprint – 3.0(L) x 1.5(W) x 1.5(H) mm
- AlInGaP technology for -R, -E, -O, -Y and -AG
- InGaN/SiC technology for -IG and -IB
- 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

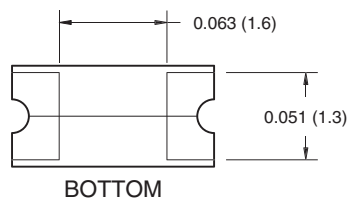
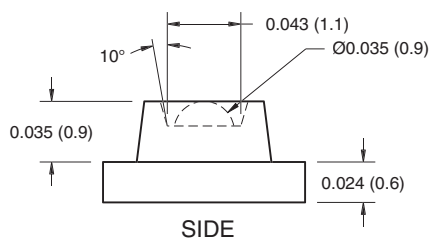
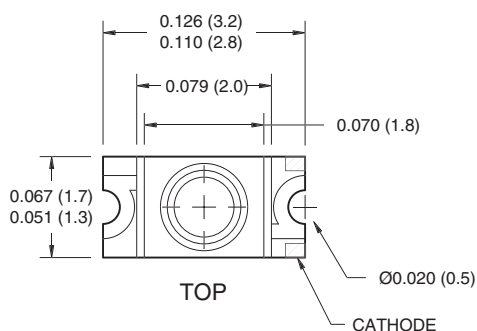
Applications

- Keypad backlighting
- Push-button backlighting
- LCD backlighting

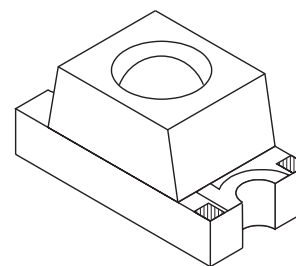
Description

These surface mount chip LEDs are designed to fit industry standard footprint. The package features a recessed, inner lens that focuses the light output, offering greater luminous intensity for direct viewing.

Package Dimensions



+ —▶— -
POLARITY



NOTE:
Dimensions for all drawings are in inches (mm).
Tolerance is ±0.1mm unless otherwise noted.

Absolute Maximum Ratings ($T_A = 25^\circ\text{C}$ Unless otherwise specified)

Parameter	Symbol	QTLP651C					Unit
		-R	-E	-O	-Y	-AG	
Continuous Forward Current	I_F	30	30	30	25	30	mA
Peak Forward Current ($f = 1.0\text{ KHz}$, Duty Factor = 1/10)	I_{FM}	160	160	160	120	160	mA
Reverse Voltage	V_R	5	5	5	5	5	V
Power Dissipation	P_D	72	72	72	60	72	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					$^\circ\text{C}$

Absolute Maximum Ratings ($T_A = 25^\circ\text{C}$ Unless otherwise specified)

Parameter	Symbol	QTLP651C		Unit
		-IB	-IG	
Continuous Forward Current	I_F	30	30	mA
Peak Forward Current ($f = 1.0\text{ KHz}$, Duty Factor = 1/10)	I_{FM}	100	100	mA
Reverse Voltage	V_R	5	5	V
Power Dissipation	P_D	120	120	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
		-R	-E	-O	-Y	-AG	
Luminous Intensity (mcd)	I_V						$I_F = 20\text{ mA}$
Minimum		25	25	25	25	15	
Typical		70	70	70	70	30	
Forward Voltage (V)	V_F						$I_F = 20\text{ mA}$
Maximum		2.4	2.4	2.4	2.4	2.4	
Typical		2.0	2.0	2.0	2.0	2.0	
Wavelength (nm)	λ_P						$I_F = 20\text{ mA}$
Peak		630	620	610	590	575	
Dominant	λ_D	624	615	605	589	573	
Spectral Line Half Width (nm)	$\Delta\lambda$	20	18	18	15	20	$I_F = 20\text{ mA}$
Viewing Angle ($^\circ$)	$2\theta^{1/2}$	20	20	20	20	20	$I_F = 20\text{ mA}$

Electrical / Optical Characteristics ($T_A = 25^\circ\text{C}$)

Part Number	Symbol	QTLP651C		Condition
		-IB	-IG	
Luminous Intensity (mcd)	I_V			$I_F = 20\text{ mA}$
Minimum		35	100	
Typical		45	140	
Forward Voltage (V)	V_F			$I_F = 20\text{ mA}$
Maximum		4.0	4.0	
Typical		3.5	3.5	
Wavelength (nm)	λ_P			$I_F = 20\text{ mA}$
Peak		465	520	
Dominant	λ_D	470	525	
Spectral Line Half Width (nm)	$\Delta\lambda$	25	35	$I_F = 20\text{ mA}$
Viewing Angle ($^\circ$)	$2\theta^{1/2}$	20	20	$I_F = 20\text{ mA}$

Typical Performance Curves (QTLP651C-R, -E, -O, -Y and -AG)

Fig. 1 Forward Current vs. Forward Voltage

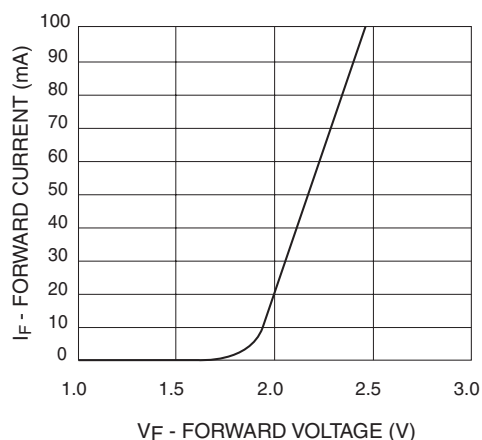


Fig. 2 Relative Luminous Intensity vs. DC Forward Current

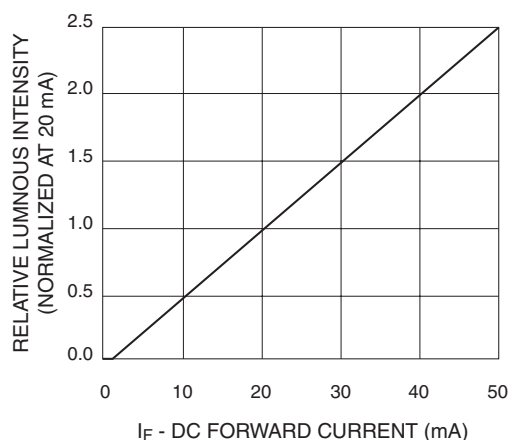


Fig. 3 Relative Intensity vs. Peak Wavelength

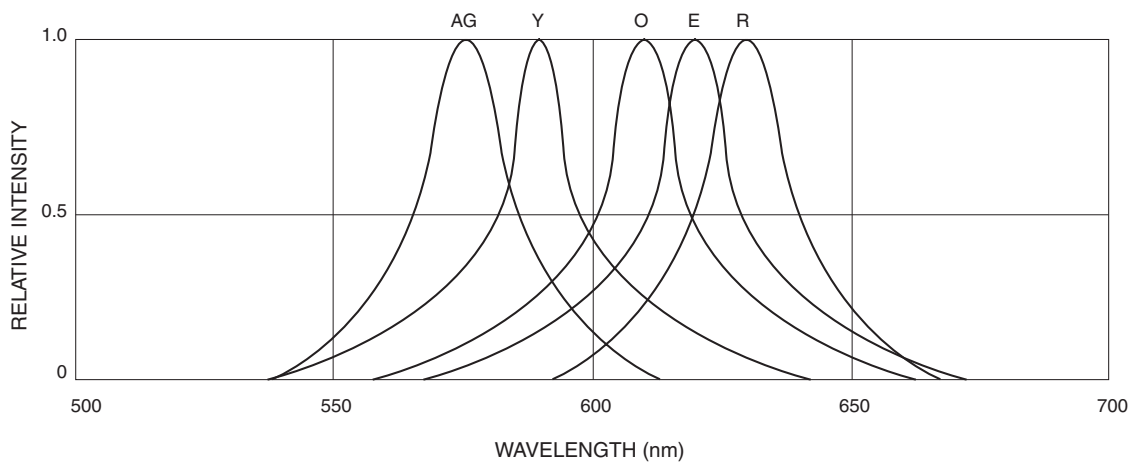


Fig.4 Radiation Diagram

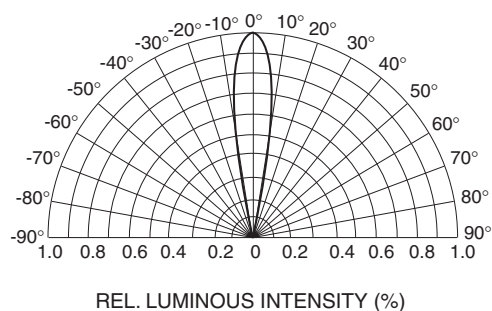
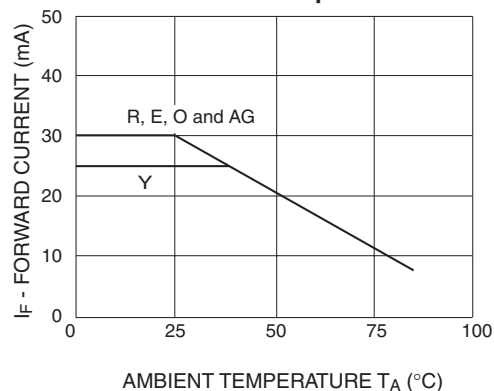


Fig.5 Maximum Forward Current vs. Ambient Temperature



Typical Performance Curves (QTLP651C-IG and -IB)

Fig. 1 Forward Current vs. Forward Voltage

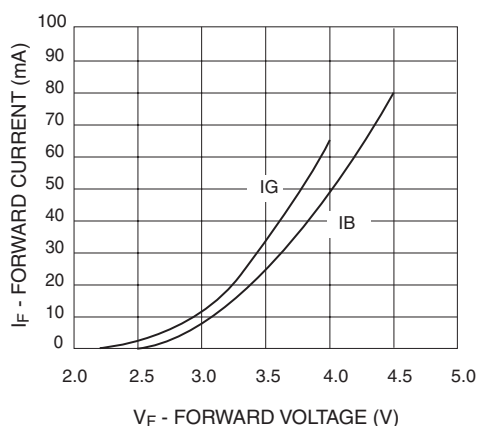


Fig. 2 Relative Luminous Intensity vs. DC Forward Current

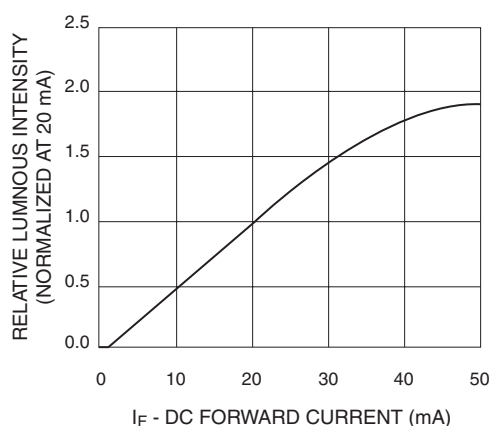


Fig. 3 Relative Intensity vs. Peak Wavelength

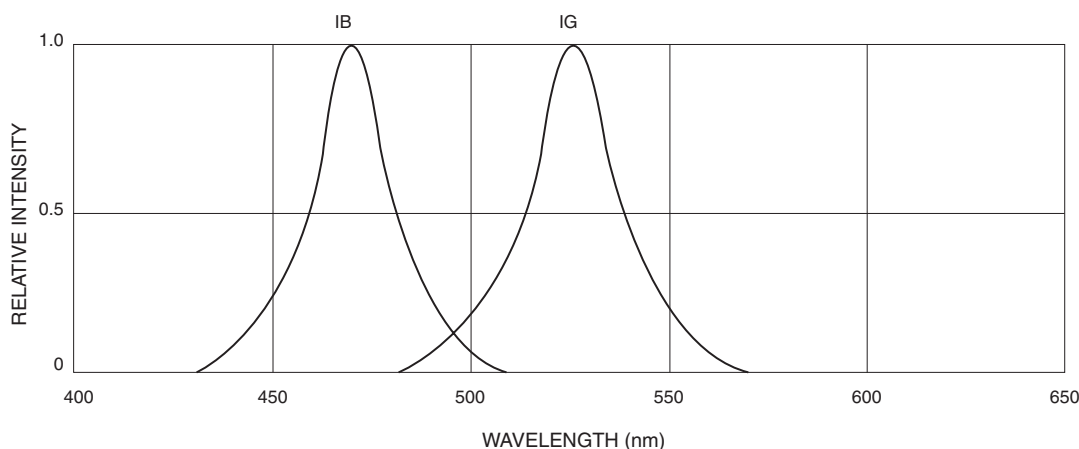


Fig.4 Radiation Diagram

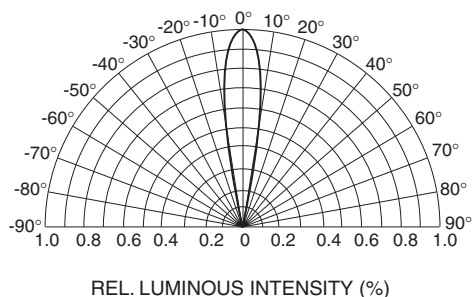
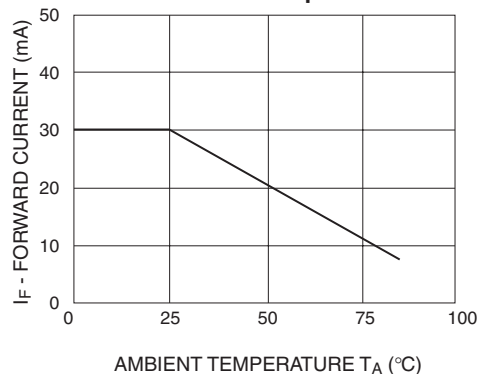
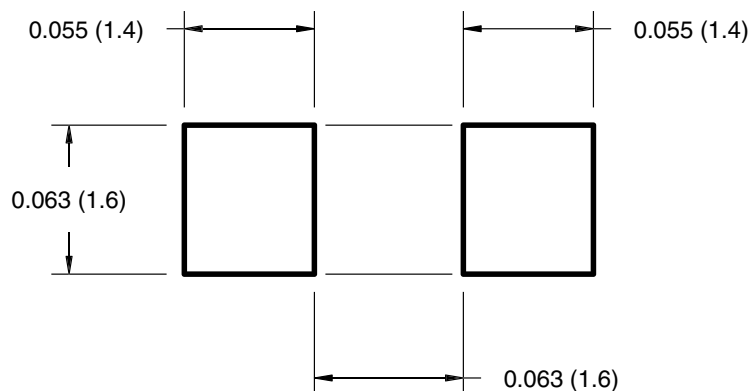


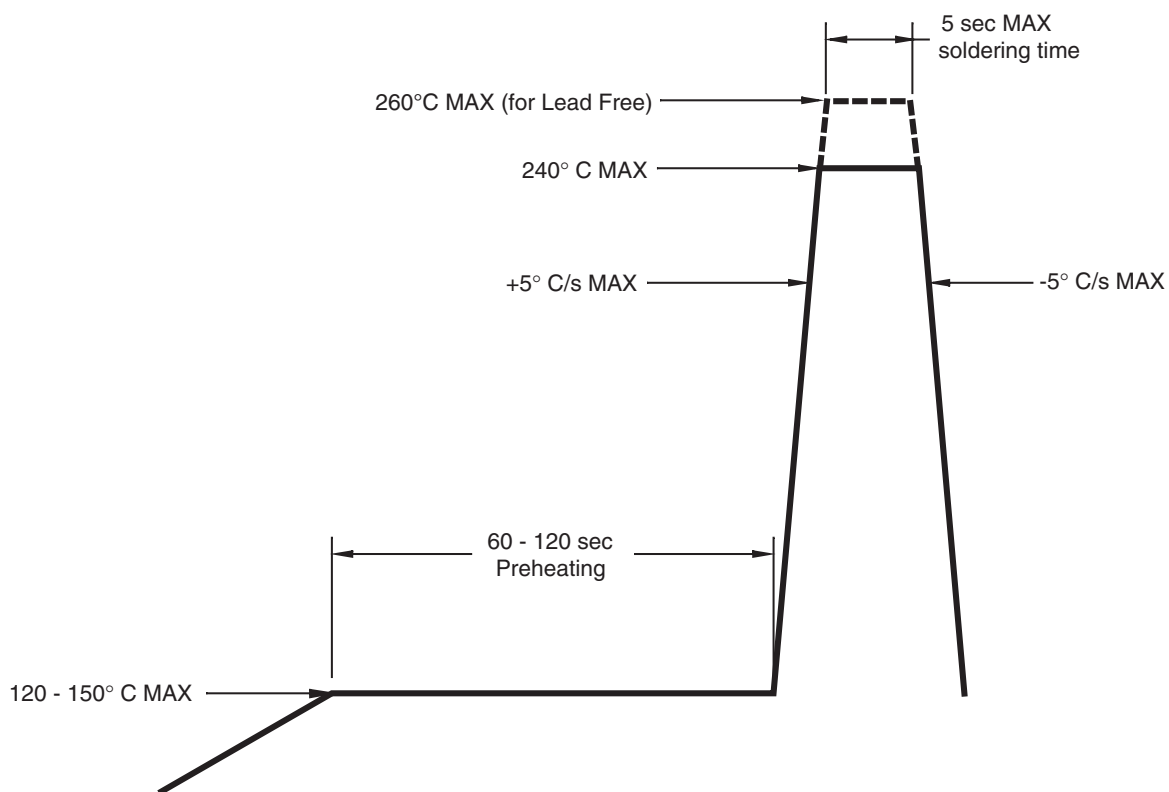
Fig.5 Maximum Forward Current vs. Ambient Temperature

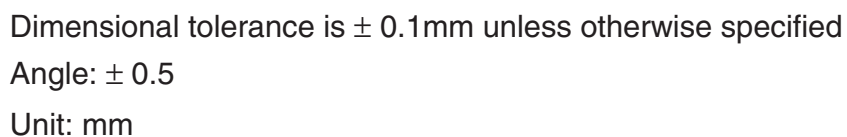


Recommended Printed Circuit Board Pattern



Recommended IR Reflow Soldering Profile





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