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[Everlight Electronics Co Ltd](#)  
[QTLP601CRTR](#)

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[sales@integrated-circuit.com](mailto:sales@integrated-circuit.com)

# SURFACE MOUNT LED LAMP SUPER BRIGHT 0603 (0.6 mm Height)

QTLP601C-R Red

QTLP601C-E Orange

QTLP601C-O Yellow-Orange

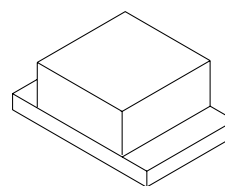
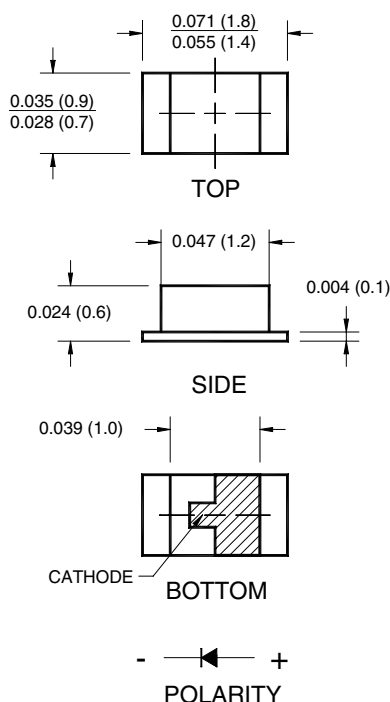
QTLP601C-Y Yellow

QTLP601C-AG Yellow-Green

QTLP601C-IG True Green

QTLP601C-IB Blue

## PACKAGE DIMENSIONS



### NOTE:

Dimensions for all drawings are in inches (mm).

## 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

- Small footprint - 1.6(L) X 0.8(W) X 0.6(H) mm
- AllInGaP technology for -R, -E, -O, -Y and -AG
- InGaN/SiC technology for -IG and -IB
- Wide viewing angle of 120°
- 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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**QTLP601C-IB** Blue

### ABSOLUTE MAXIMUM RATINGS (T<sub>A</sub> =25°C Unless otherwise specified)

Parameter	Symbol	QTLP601C					Units
		-R	-E	-O	-Y	-AG	
Continuous Forward Current	I <sub>F</sub>	30	30	30	25	30	mA
Peak Forward Current (f = 1.0 KHz, Duty Factor = 1/10)	I <sub>FM</sub>	160	160	160	120	160	mA
Reverse Voltage	V <sub>R</sub>	5	5	5	5	5	V
Power Dissipation	P <sub>D</sub>	72	72	72	60	72	mW
Operating Temperature	T <sub>OPR</sub>	-40 to +85					°C
Storage Temperature	T <sub>STG</sub>	-40 to +90					°C
Lead Soldering Time	T <sub>SOL</sub>	260 for 5 sec					°C

### ABSOLUTE MAXIMUM RATINGS (T<sub>A</sub> =25°C Unless otherwise specified)

Parameter	Symbol	QTLP601C		Units
		-IB	-IG	
Continuous Forward Current	I <sub>F</sub>	30	30	mA
Peak Forward Current (f = 1.0 KHz, Duty Factor = 1/10)	I <sub>FM</sub>	100	100	mA
Reverse Voltage	V <sub>R</sub>	5	5	V
Power Dissipation	P <sub>D</sub>	120	120	mW
Operating Temperature	T <sub>OPR</sub>	-40 to +85		°C
Storage Temperature	T <sub>STG</sub>	-40 to +90		°C
Lead Soldering Time	T <sub>SOL</sub>	260 for 5 sec		°C

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## ELECTRICAL / OPTICAL CHARACTERISTICS (T<sub>A</sub> =25°C)

Part Number	Symbol	QTLP601C					Condition
		-R	-E	-O	-Y	-AG	
Luminous Intensity (mcd)	I <sub>V</sub>	15	15	15	15	10	I <sub>F</sub> = 20mA
		35	35	35	35	15	
Forward Voltage (V)	V <sub>F</sub>	2.4	2.4	2.4	2.4	2.4	I <sub>F</sub> = 20mA
		2.0	2.0	2.0	2.0	2.0	
Wavelength (nm)	λ <sub>P</sub>	630	620	610	590	575	I <sub>F</sub> = 20mA
		λ <sub>D</sub>	624	615	605	589	
Spectral Line Half Width (nm)	Δλ	20	18	18	15	20	I <sub>F</sub> = 20mA
Viewing Angle (°)	2θ <sub>1/2</sub>	120	120	120	120	120	I <sub>F</sub> = 20mA

## ELECTRICAL / OPTICAL CHARACTERISTICS (T<sub>A</sub> =25°C)

Part Number	Symbol	QTLP601C		Condition
		-IB	-IG	
Luminous Intensity (mcd)	I <sub>V</sub>	15	50	I <sub>F</sub> = 20mA
		25	70	
Forward Voltage (V)	V <sub>F</sub>	4.0	4.0	I <sub>F</sub> = 20mA
		3.5	3.5	
Wavelength (nm)	λ <sub>P</sub>	465	520	I <sub>F</sub> = 20mA
		λ <sub>D</sub>	470	
Spectral Line Half Width (nm)	Δλ	25	35	I <sub>F</sub> = 20mA
Viewing Angle (°)	2θ <sub>1/2</sub>	120	120	I <sub>F</sub> = 20mA



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QTLP601C-IG True Green

QTLP601C-IB Blue

## TYPICAL PERFORMANCE CURVES (QTLP601C-R, -E, -O, -Y and -AG)

Fig. 1 Forward Current vs. Forward Voltage

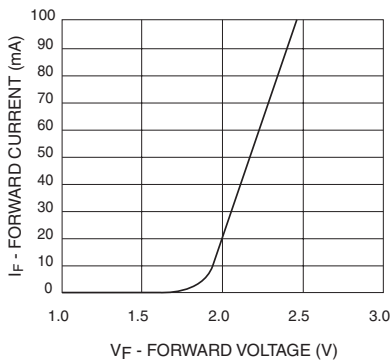


Fig. 2 Relative Luminous Intensity vs. DC Forward Current

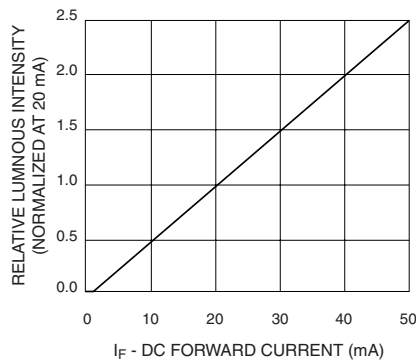


Fig. 3 Relative Intensity vs. Peak Wavelength

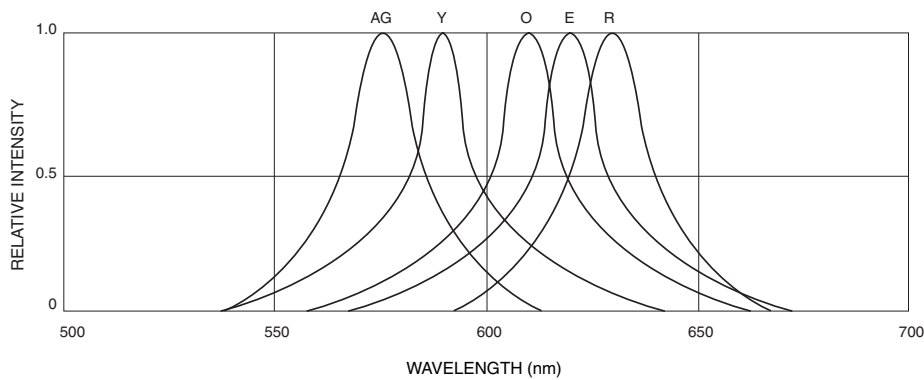


Fig.4 Radiation Diagram

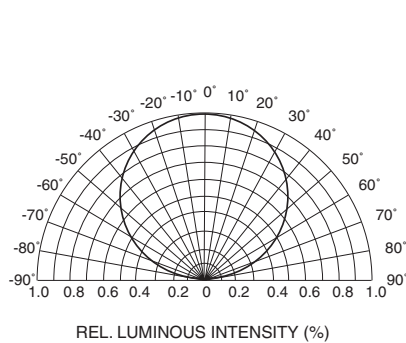
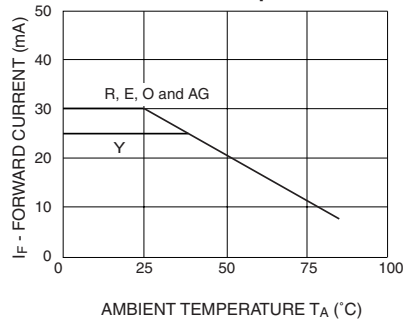


Fig.5 Maximum Forward Current vs. Ambient Temperature



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QTLP601C-O Yellow-Orange

QTLP601C-Y Yellow

QTLP601C-AG Yellow-Green

QTLP601C-IG True Green

QTLP601C-IB Blue

## TYPICAL PERFORMANCE CURVES (QTLP601C-IG and IB)

Fig. 1 Forward Current vs. Forward Voltage

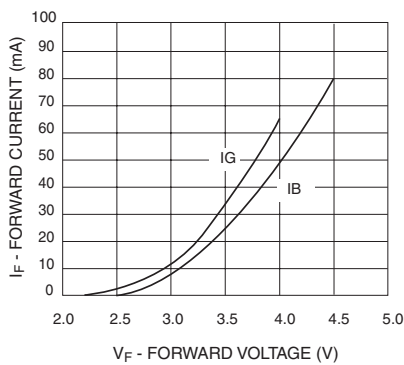


Fig. 2 Relative Luminous Intensity vs. DC Forward Current

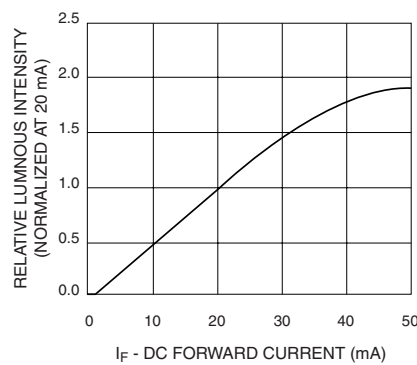


Fig. 3 Relative Intensity vs. Peak Wavelength

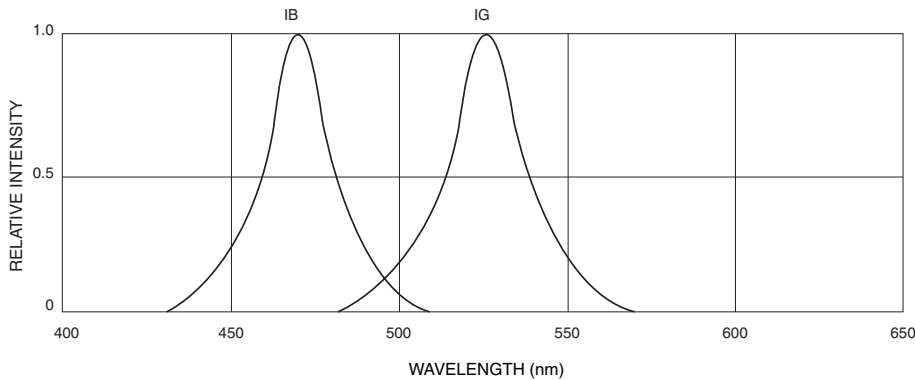


Fig.4 Radiation Diagram

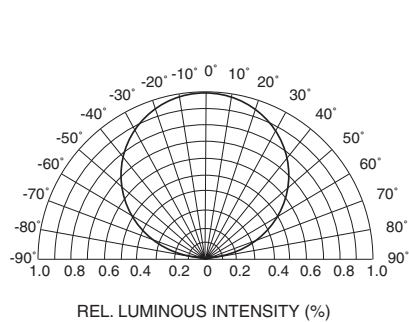
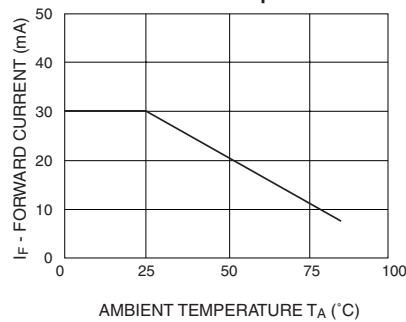


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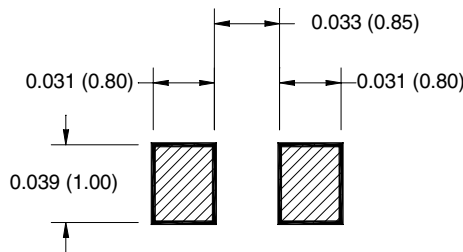
QTLP601C-Y Yellow

QTLP601C-AG Yellow-Green

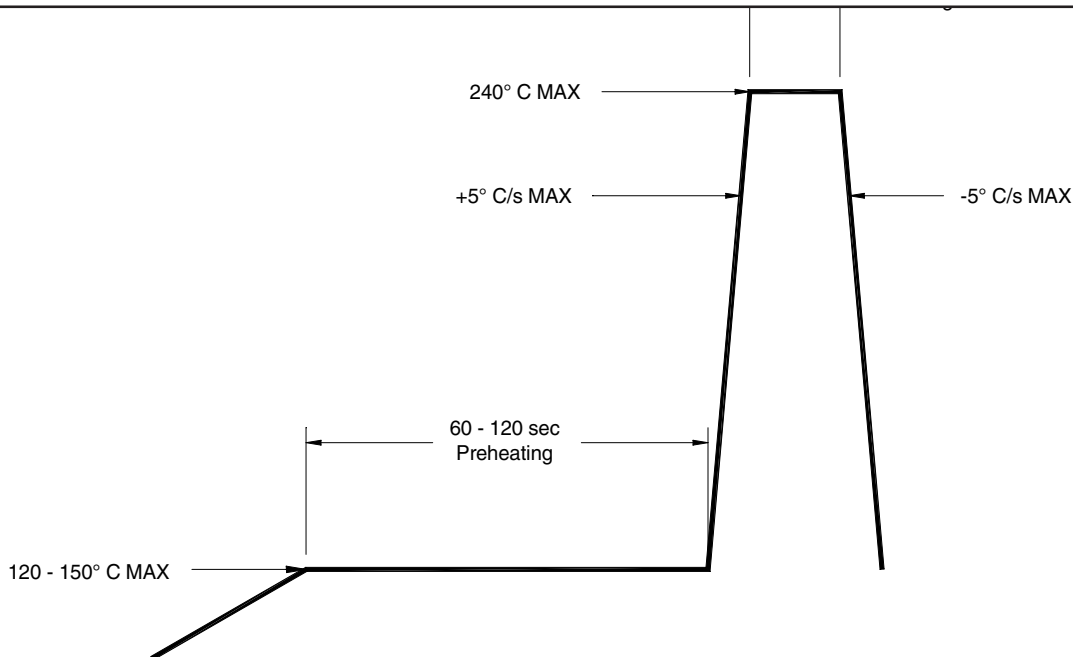
QTLP601C-IG True Green

QTLP601C-IB Blue

## RECOMMENDED PRINTED CIRCUIT BOARD PATTERN



## RECOMMENDED IR REFLOW SOLDERING PROFILE





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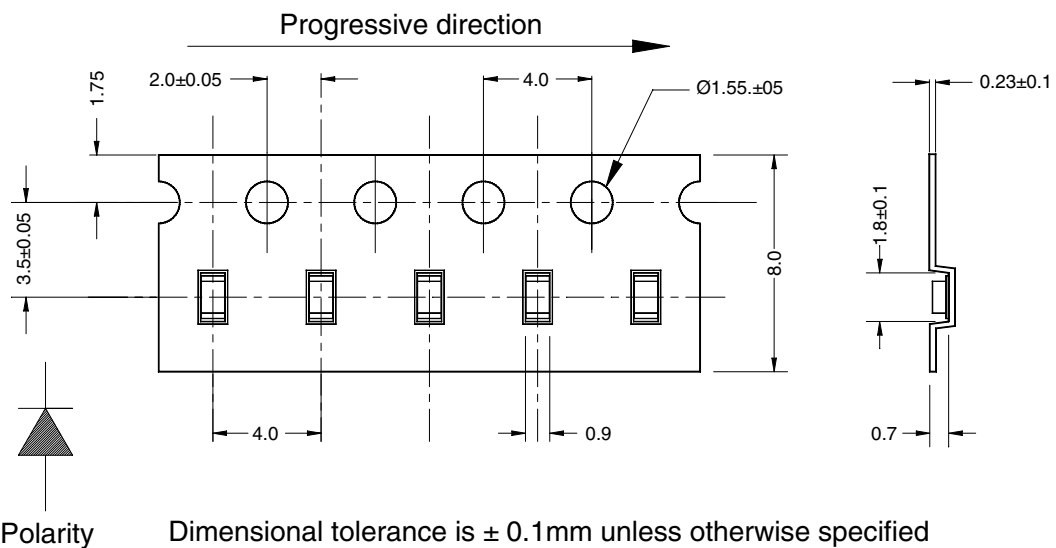
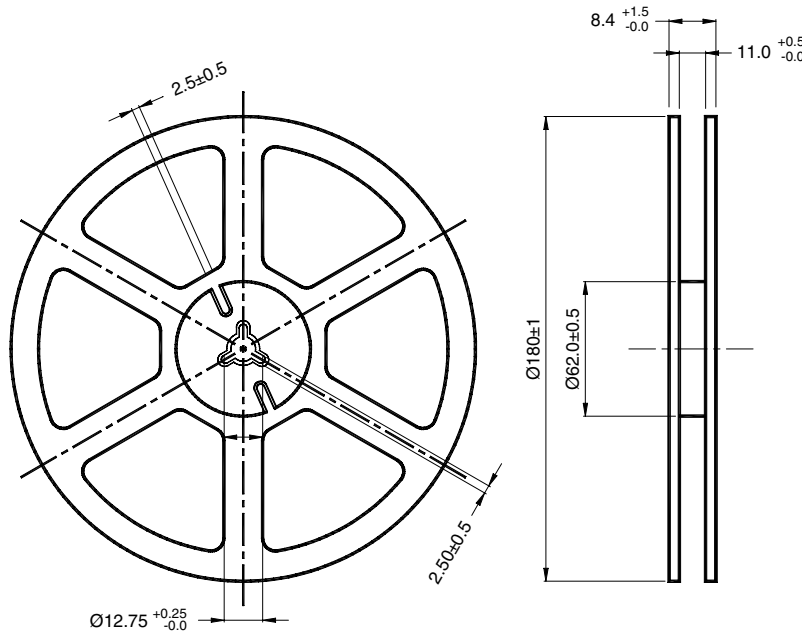
QTLP601C-Y Yellow

QTLP601C-AG Yellow-Green

QTLP601C-IG True Green

QTLP601C-IB Blue

## TAPE AND REEL DIMENSIONS



Dimensional tolerance is ± 0.1mm unless otherwise specified

Angle: ± 0.5

Unit: mm





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