



# SURFACE MOUNT LED LAMP STANDARD BRIGHT PLCC-2

QTLP670C-2 HER

QTLP670C-3 Yellow

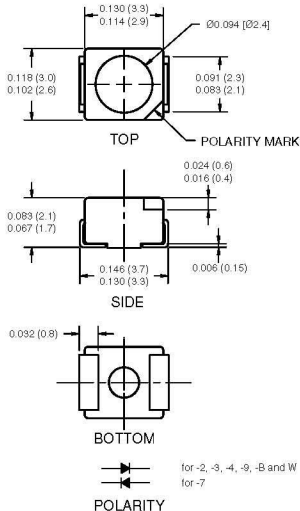
QTLP670C-4 Green

QTLP670C-7 AlGaAs Red

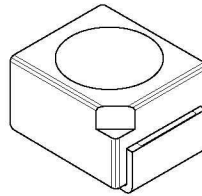
QTLP670C-B Blue

QTLP670C-W White

## PACKAGE DIMENSIONS



NOTE:  
Dimensions for all drawings are in inches (mm).



## APPLICATIONS

- Automotive interior lighting
- Status indication for consumer electronics and office equipment

## DESCRIPTION

These surface mount LEDs are designed with flat top and sides for the ease of pick-and-place by automatic placement equipment. They are compatible with convective IR and vapor phase reflow soldering. The package size and configuration conform to EIA-535 BAAC standard specification for case size 3528 tantalum capacitor. These LEDs are ideal for backlighting and optical coupling into light pipes.

## FEATURES

- GaN/SiC technology for -B and -W
- 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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### ABSOLUTE MAXIMUM RATINGS ( $T_A = 25^\circ\text{C}$ Unless otherwise specified)

Parameter	Symbol	QTLP670C						Units
		-2	-3	-4	-7	-B	-W	
Continuous Forward Current	$I_F$	30	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	100	mA
Reverse Voltage ( $I_R = 10 \mu\text{A}$ )	$V_R$	5	5	5	5	5	5	V
Power Dissipation	$P_D$	84	84	84	72	135	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	QTLP670C						Condition
		-2	-3	-4	-7	-B	-W	
Luminous Intensity (mcd)	$I_V$	5	5	15	25	20	20	$I_F = 20\text{mA}$
Minimum		10	10	25	40	30	30	
Typical	$V_F$	2.8	2.8	2.8	2.4	4.5	4.5	$I_F = 20\text{mA}$
Forward Voltage (V)		2.0	2.0	2.1	1.9	3.8	3.8	
Maximum	$\lambda_P$	635	585	565	660	430	—	$I_F = 20\text{mA}$
Typical		630	590	570	645	465	—	
Wavelength (nm)	$\lambda_D$	—	—	—	—	—	—	$I_F = 20\text{mA}$
Peak		—	—	—	—	—	—	
Dominant	$x, y$	—	—	—	—	—	—	$I_F = 20\text{mA}$
Chromatic Coordinate		—	—	—	—	—	—	
Spectral Line Half Width (nm)	$\Delta\lambda$	45	35	30	20	65	—	$I_F = 20\text{mA}$
Viewing Angle ( $^\circ$ )	$2\theta_{1/2}$	120	120	120	120	120	120	$I_F = 20\text{mA}$



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## TYPICAL PERFORMANCE CURVES

Fig. 1 Forward Current vs. Forward Voltage

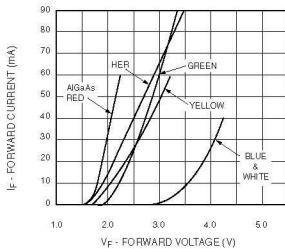


Fig. 2 Relative Luminous Intensity vs. DC Forward Current

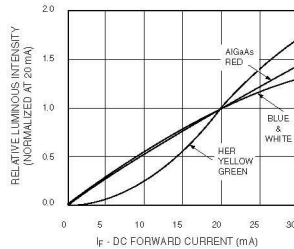


Fig. 3 Relative Intensity vs. Peak Wavelength

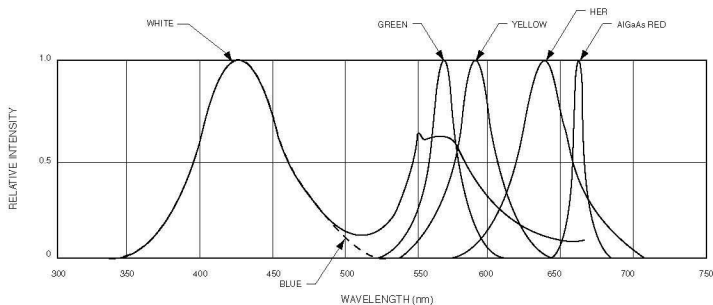


Fig.4 Radiation Diagram

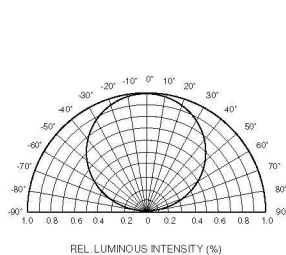
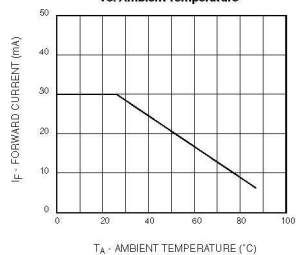


Fig.5 Maximum Forward Current vs. Ambient Temperature





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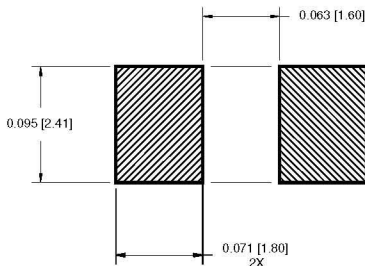
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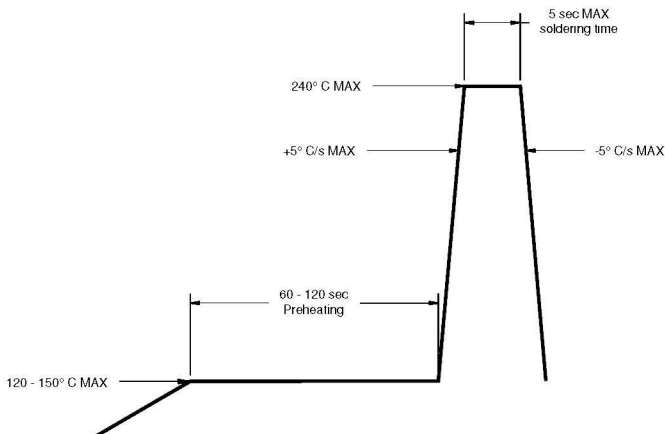
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### RECOMMENDED PRINTED CIRCUIT BOARD PATTERN



### RECOMMENDED IR REFLOW SOLDERING PROFILE





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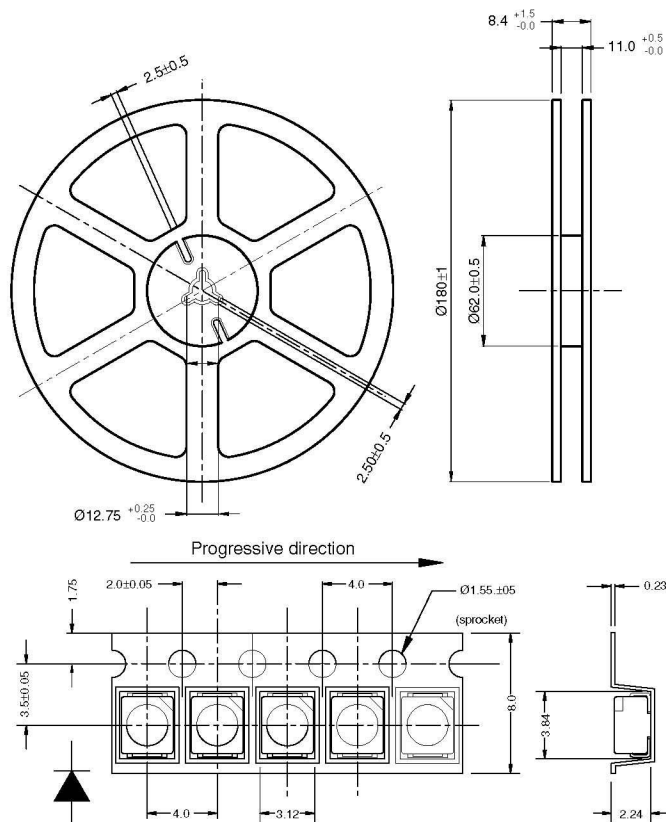
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## TAPE AND REEL DIMENSIONS



for -2, -3, -4, -9, -B and -W

Polarity

Dimensional tolerance is  $\pm 0.1$ mm unless otherwise specified

Angle:  $\pm 0.5$

Unit: mm

Polarity marks are on the sprocket side.



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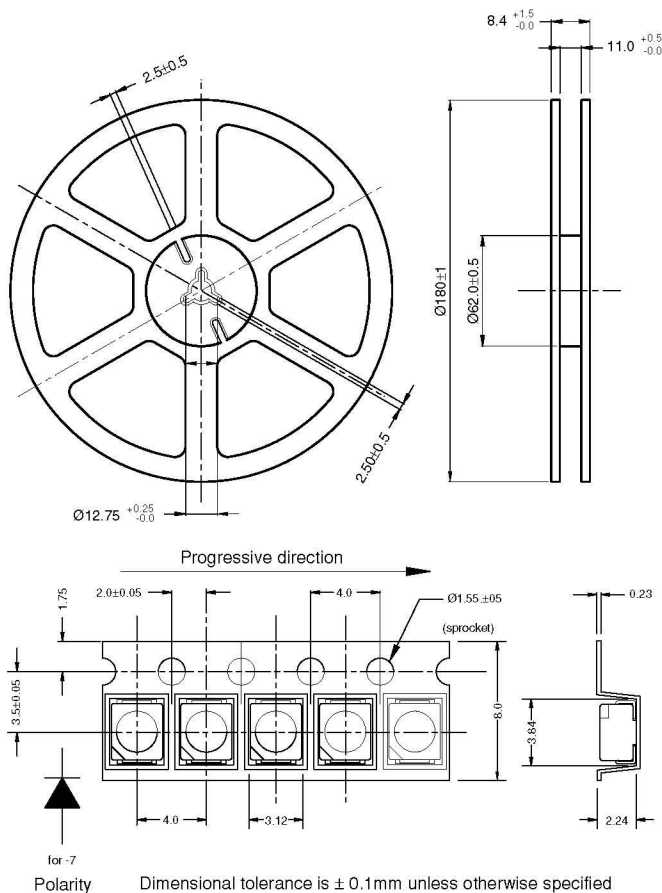
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## TAPE AND REEL DIMENSIONS



Dimensional tolerance is  $\pm 0.1\text{mm}$  unless otherwise specified  
Angle:  $\pm 0.5$   
Unit: mm  
Polarity marks are on the opposite sprocket side.



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