

**QTLP670C-2** HER

**QTLP670C-3** Yellow

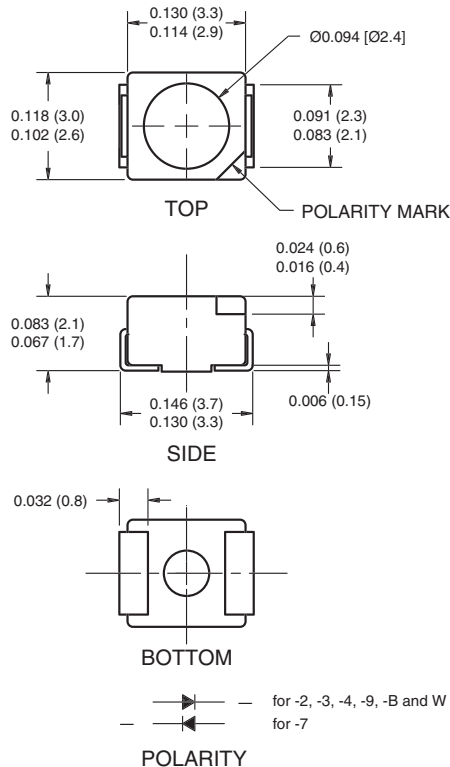
**QTLP670C-4** Green

**QTLP670C-7** AlGaAs Red

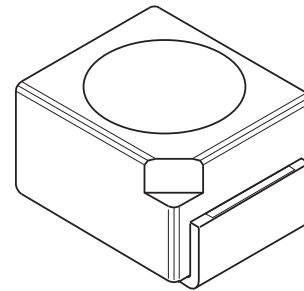
**QTLP670C-B** Blue

**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

# SURFACE MOUNT LED LAMP

## STANDARD BRIGHT PLCC-2

### QTLP670C

QTLP670C-2 HER

QTLP670C-3 Yellow

QTLP670C-4 Green

QTLP670C-7 AlGaAs Red

QTLP670C-B Blue

QTLP670C-W White

#### 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	
Forward Voltage (V)	$V_F$	2.8	2.8	2.8	2.4	4.5	4.5	$I_F = 20\text{mA}$
Maximum		2.0	2.0	2.1	1.9	3.8	3.8	
Wavelength (nm)	$\lambda_P$	635	585	565	660	430	—	$I_F = 20\text{mA}$
Peak		630	590	570	645	465	—	
Dominant	$\lambda_D$	630	590	570	645	465	—	$I_F = 20\text{mA}$
Chromatic Coordinate	x,y	—	—	—	—	—	x = 0.26 y = 0.28	$I_F = 20\text{mA}$
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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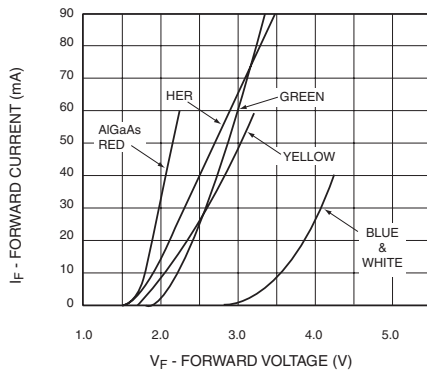
**QTLP670C-7 AlGaAs Red**

**QTLP670C-B Blue**

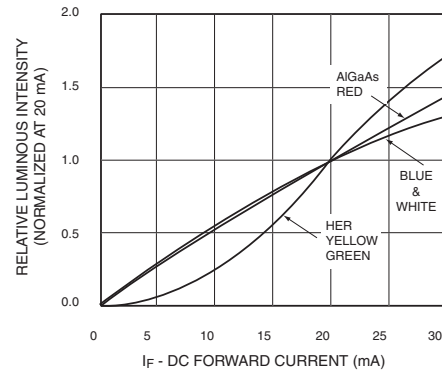
**QTLP670C-W White**

**TYPICAL PERFORMANCE CURVES**

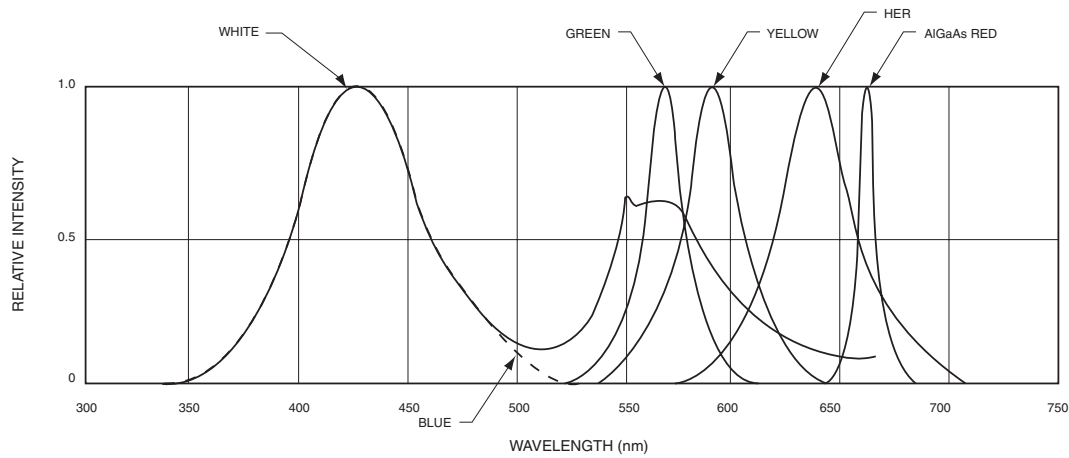
**Fig. 1 Forward Current vs. Forward Voltage**



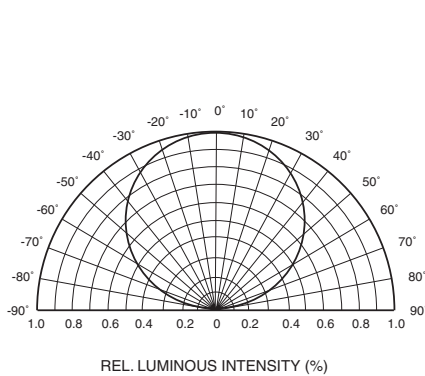
**Fig. 2 Relative Luminous Intensity vs. DC Forward Current**



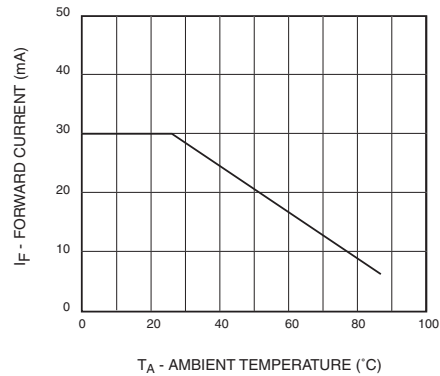
**Fig. 3 Relative Intensity vs. Peak Wavelength**



**Fig. 4 Radiation Diagram**



**Fig. 5 Maximum Forward Current vs. Ambient Temperature**



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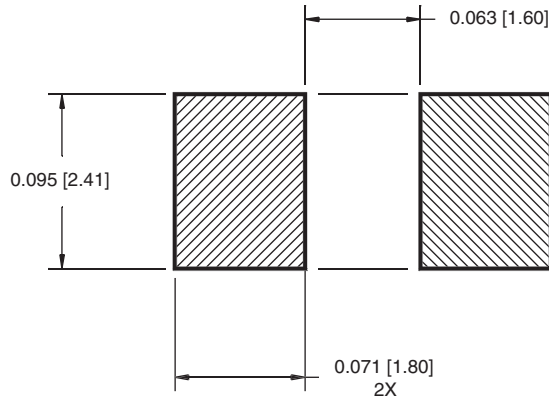
QTLP670C-4 Green

QTLP670C-7 AlGaAs Red

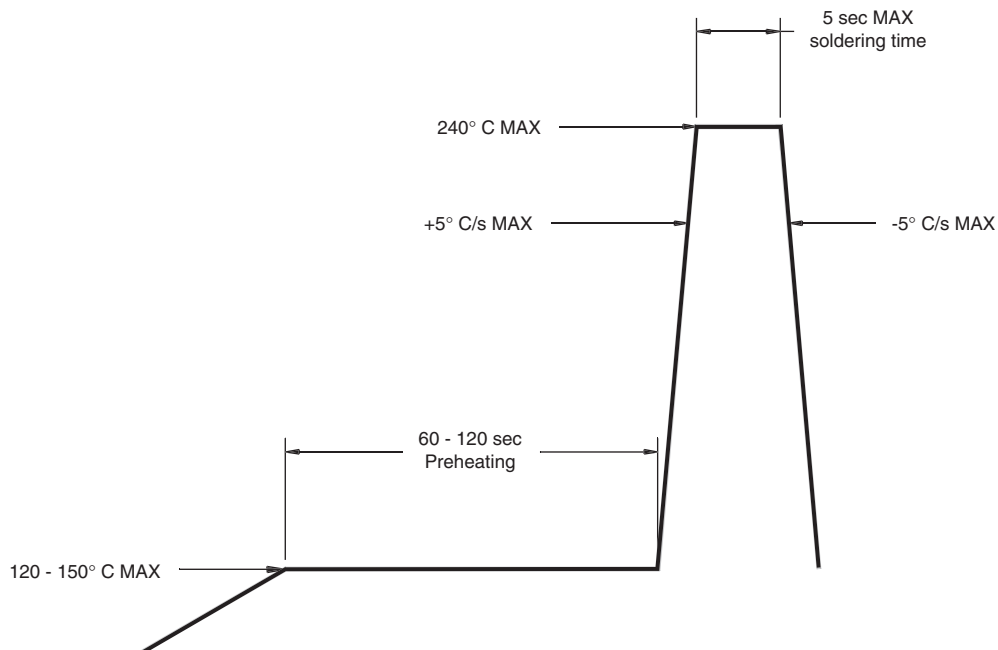
QTLP670C-B Blue

QTLP670C-W White

#### RECOMMENDED PRINTED CIRCUIT BOARD PATTERN



#### RECOMMENDED IR REFLOW SOLDERING PROFILE



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QTLP670C-3 Yellow

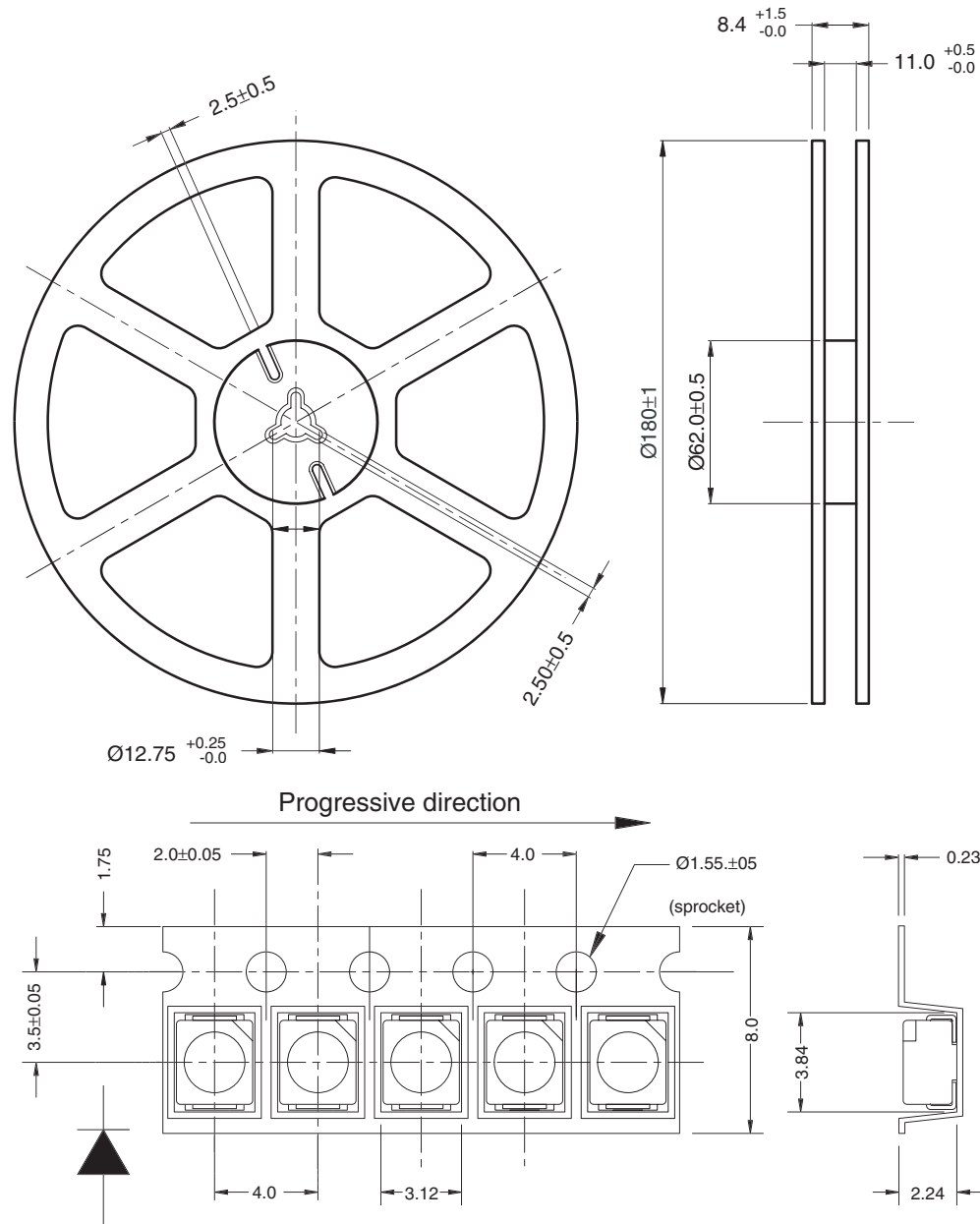
QTLP670C-4 Green

QTLP670C-7 AlGaAs Red

QTLP670C-B Blue

QTLP670C-W White

### TAPE AND REEL DIMENSIONS



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

Polarity

Dimensional tolerance is  $\pm 0.1\text{mm}$  unless otherwise specified

Angle:  $\pm 0.5$

Unit: mm

Polarity marks are on the sprocket side.

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QTLP670C-3 Yellow

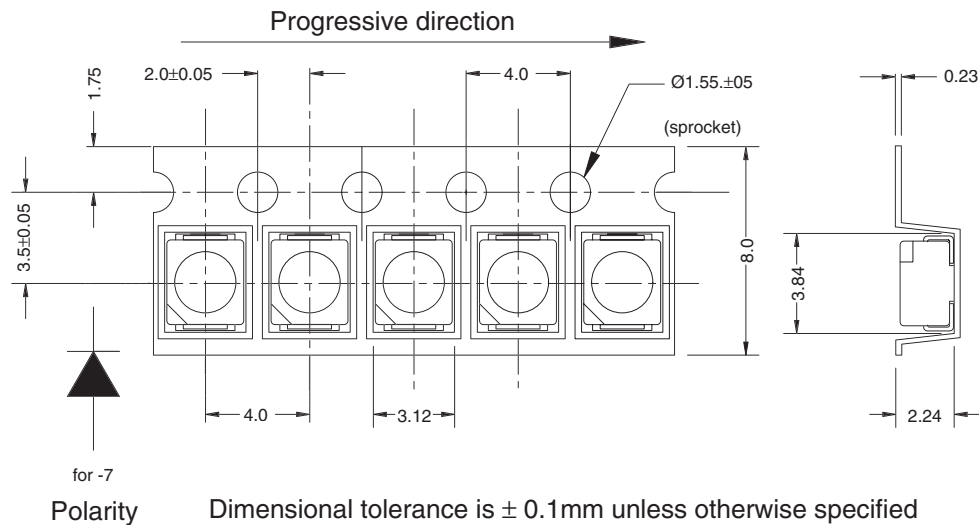
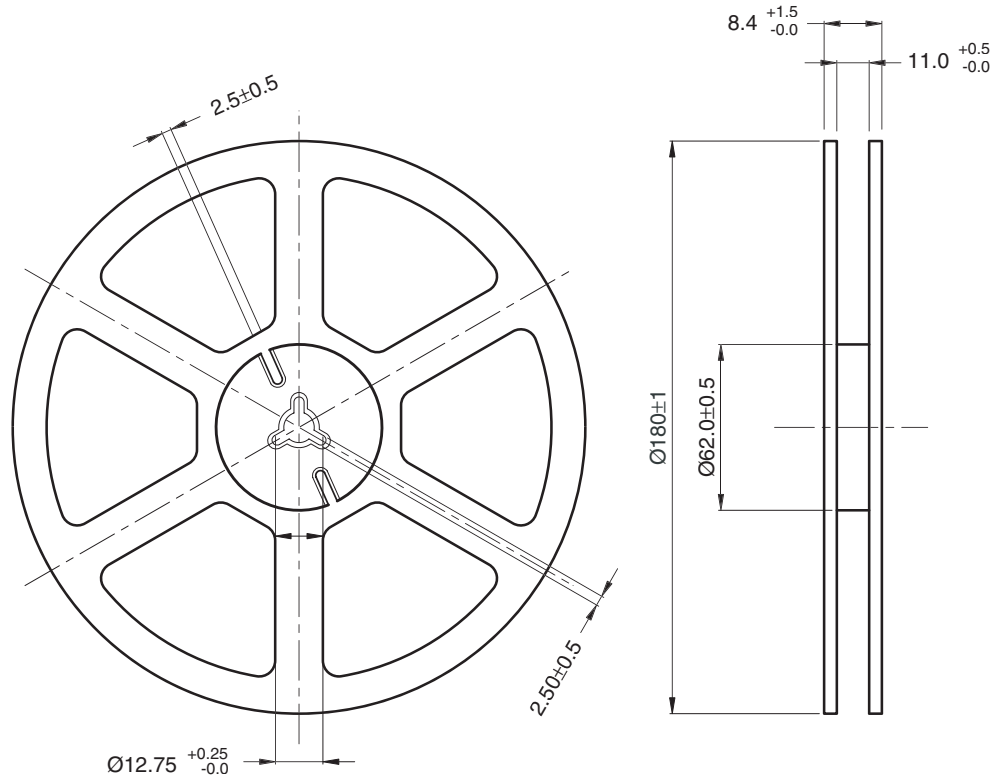
QTLP670C-4 Green

QTLP670C-7 AlGaAs Red

QTLP670C-B Blue

QTLP670C-W White

## 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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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.