

SURFACE MOUNT LED LAMP

STANDARD BRIGHT PLCC-2

QTLP670C

QTLP670C-2 HER

QTLP670C-3 Yellow

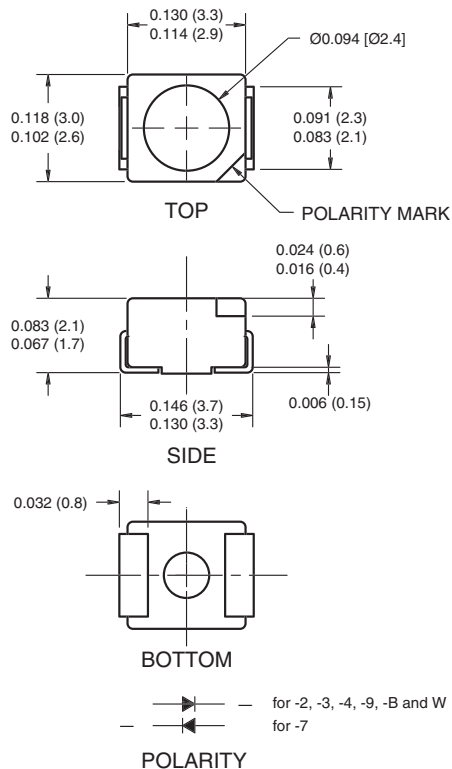
QTLP670C-4 Green

QTLP670C-7 AlGaAs Red

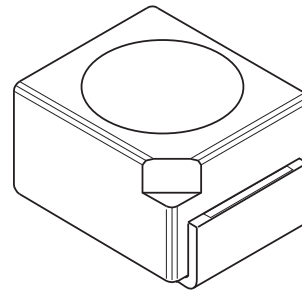
QTLP670C-B Blue

QTLP670C-W White

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	λ_P	635	585	565	660	430	—	$I_F = 20\text{mA}$
Typical		630	590	570	645	465	—	
Wavelength (nm)	λ_D	—	—	—	—	—	x = 0.26 y = 0.28	$I_F = 20\text{mA}$
Peak	x,y	45	35	30	20	65	—	$I_F = 20\text{mA}$
Dominant	$\Delta\lambda$	120	120	120	120	120	120	$I_F = 20\text{mA}$
Chromatic Coordinate	$2\Theta_{1/2}$	120	120	120	120	120	120	$I_F = 20\text{mA}$
Spectral Line Half Width (nm)								
Viewing Angle ($^\circ$)								

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TYPICAL PERFORMANCE CURVES

Fig. 1 Forward Current vs. Forward Voltage

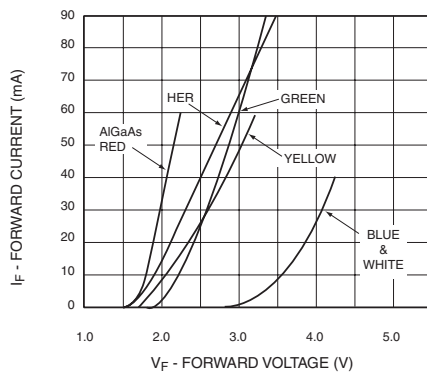


Fig. 2 Relative Luminous Intensity vs. DC Forward Current

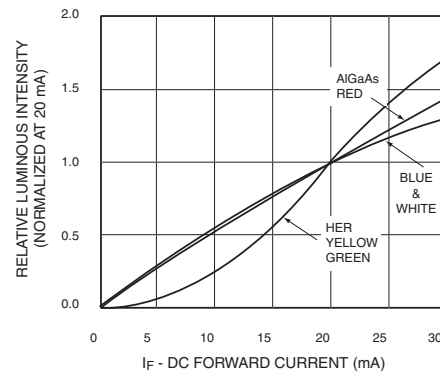


Fig. 3 Relative Intensity vs. Peak Wavelength

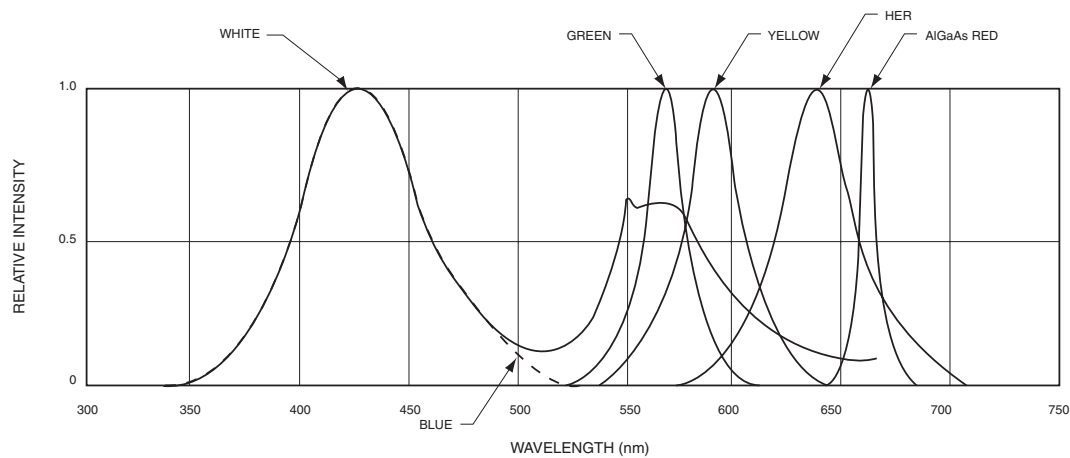


Fig. 4 Radiation Diagram

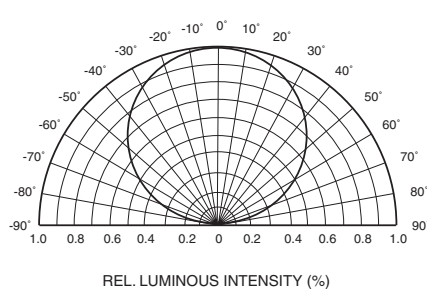
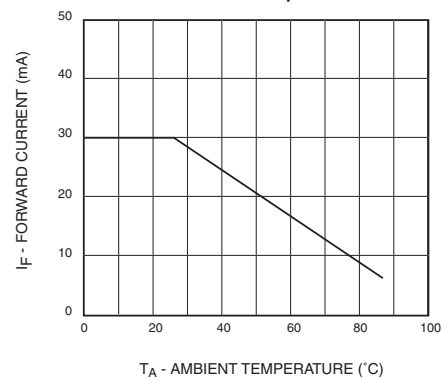


Fig. 5 Maximum Forward Current vs. Ambient Temperature



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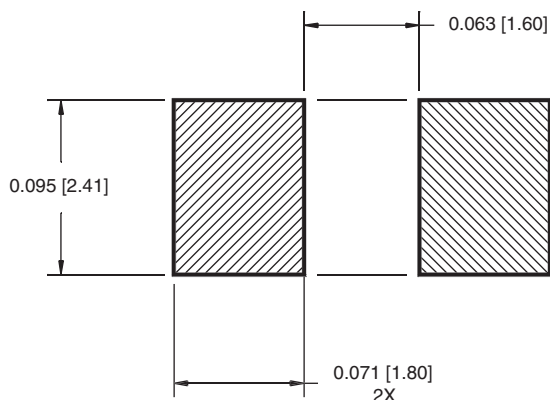
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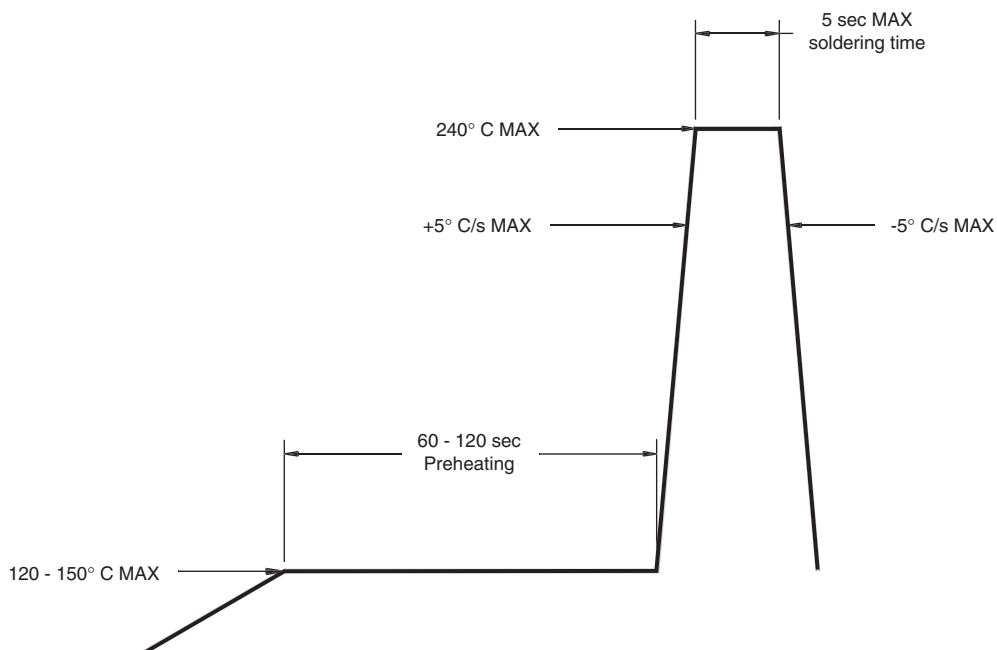
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RECOMMENDED PRINTED CIRCUIT BOARD PATTERN



RECOMMENDED IR REFLOW SOLDERING PROFILE



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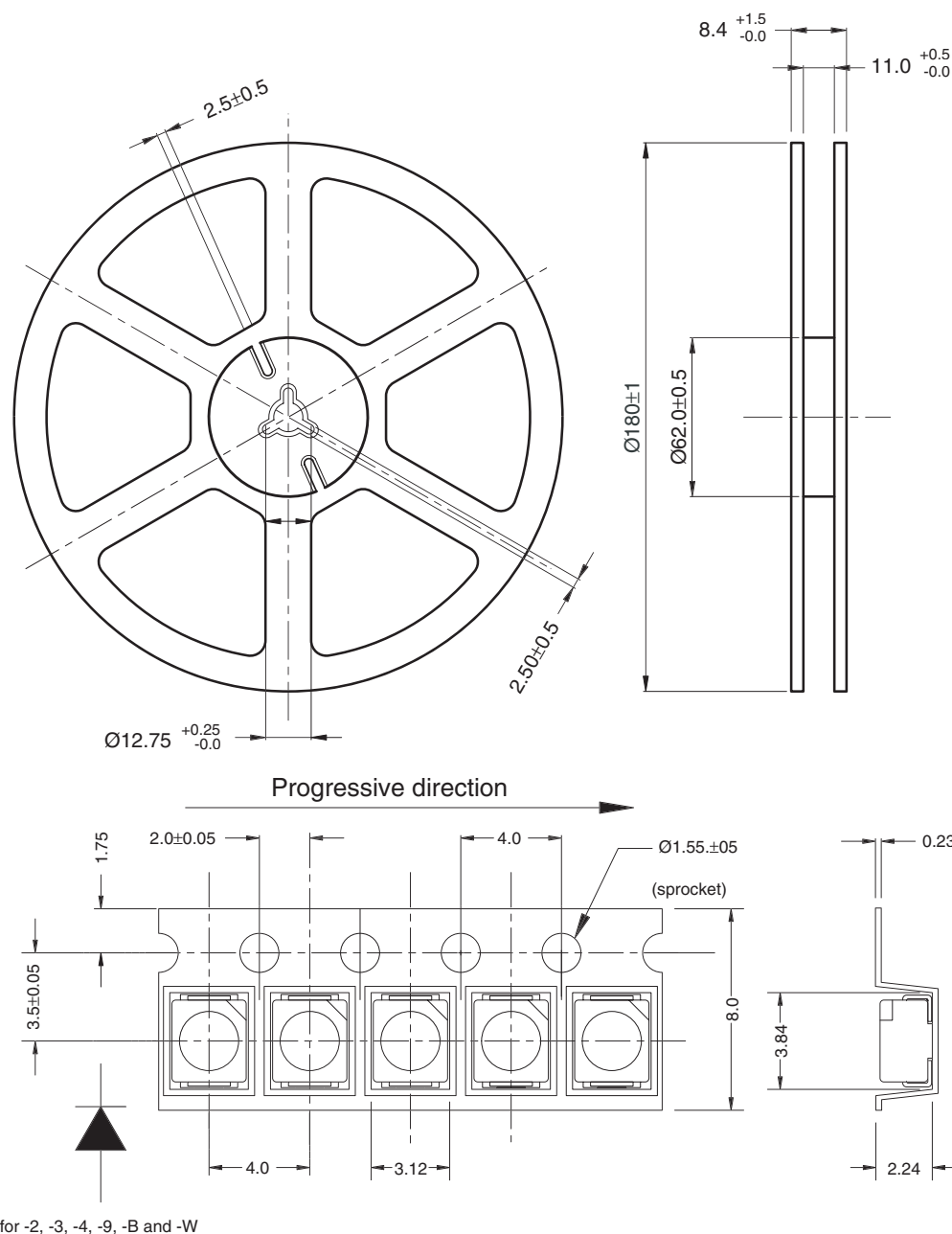
QTLP670C-4 Green

QTL P670C-7 AlGaAs Red

QTL P670C-B Blue

QTLP670C-W White

TAPE AND REEL DIMENSIONS



Polarity

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

Angle: ± 0.5

Unit: mm

Polarity marks are on the sprocket side.

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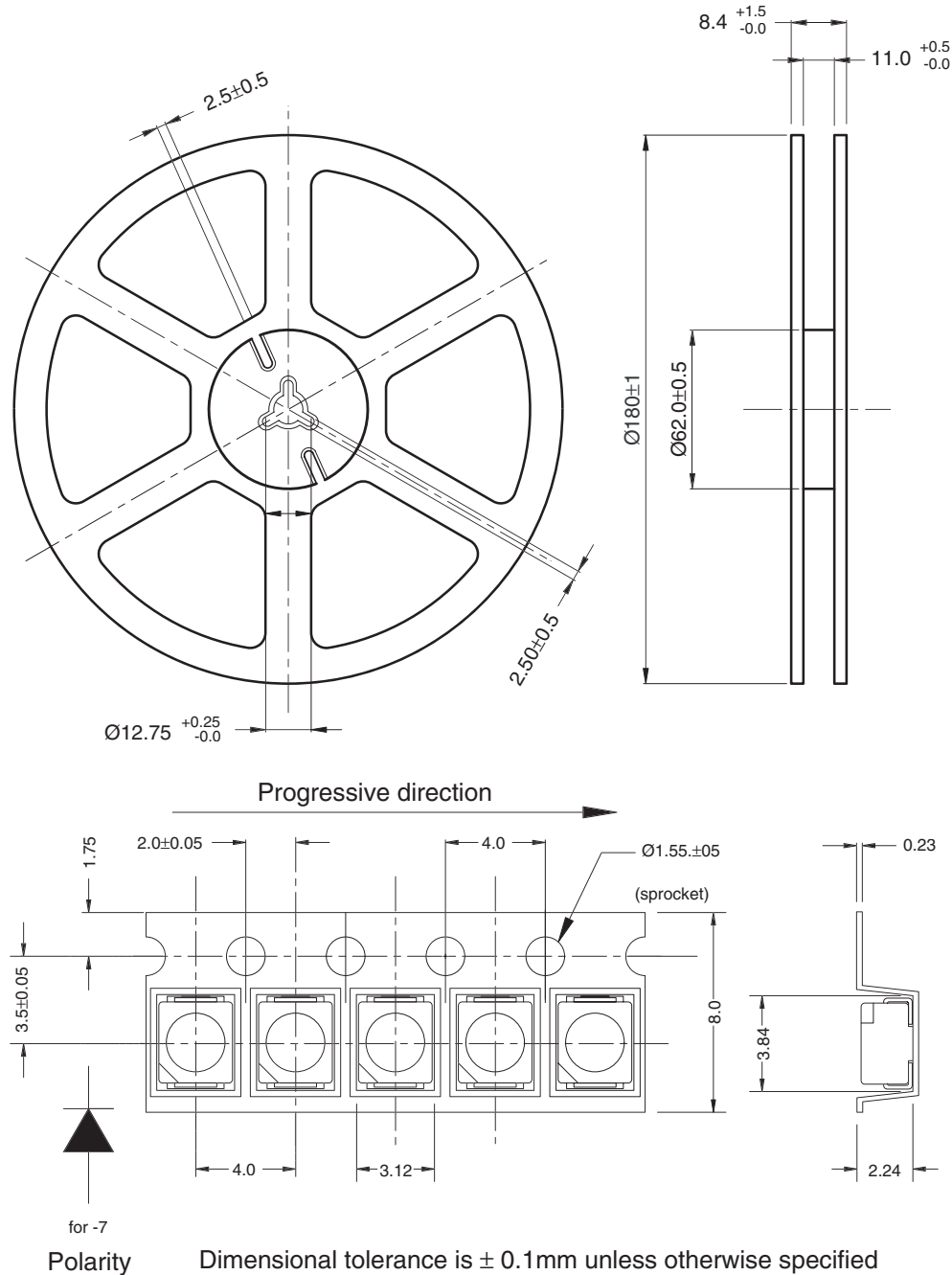
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TAPE AND REEL DIMENSIONS



Dimensional tolerance is ± 0.1 mm unless otherwise specified
Angle: ± 0.5
Unit: mm
Polarity marks are on the opposite sprocket side.

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