



SURFACE MOUNT LED LAMP

SUPER BRIGHT PLCC-2

QTLP671C-S Red

QTLP671C-R Red

QTLP671C-E Orange

QTLP671C-O Yellow-Orange

QTLP671C-Y Yellow

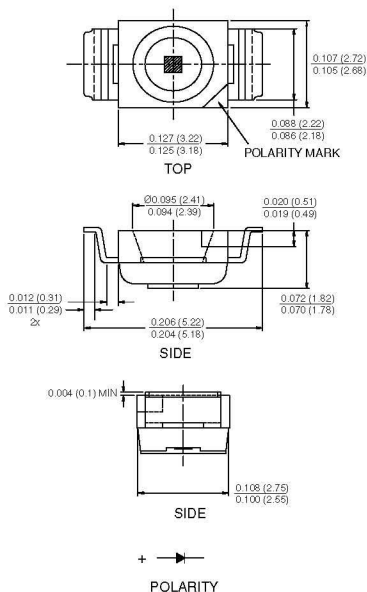
QTLP671C-AG Yellow-Green

QTLP671C-IG True Green

QTLP671C-IB Blue

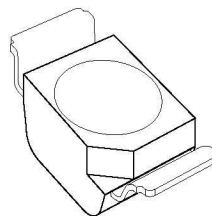
QTLP671C-IW White

PACKAGE DIMENSIONS



NOTE:

Dimensions to 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

- AlInGaP technology for -S, -R, -E, -O, -Y and -AG
- InGaN/SiC technology for -IG, -IB and -IW
- Wide viewing angle of 120°
- Water clear optics
- Available in 0.315" (8mm) width tape on 7" (178mm) diameter reel; 2,000 units per reel



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QTLP671C-IG True Green

QTLP671C-IB Blue

QTLP671C-IW White

ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ Unless otherwise specified)

Parameter	Symbol	QTLP671C						Units
		-S	-R	-E	-O	-Y	-AG	
Continuous Forward Current	I_F	30	30	30	30	25	30	mA
Peak Forward Current ($f = 1.0\text{ KHz}$, Duty Factor = 1/10)	I_{FM}	160	160	160	160	120	160	mA
Reverse Voltage ($I_R = 10\text{ }\mu\text{A}$)	V_R	5	5	5	5	5	5	V
Power Dissipation	P_D	72	72	72	72	60	72	mW
Junction Temperature	T_J	100	100	100	100	100	100	$^\circ\text{C}$
Thermal Resistance (Junction-Air)	R_{thJA}	500	500	500	500	500	500	K/W
Operating Temperature	T_{OPR}	-40 to +95						$^\circ\text{C}$
Storage Temperature	T_{STG}	-40 to +100						$^\circ\text{C}$
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	QTLP671C			Units
		-IB	-IG	-IW	
Continuous Forward Current	I_F	30	30	20	mA
Peak Forward Current ($f = 1.0\text{ KHz}$, Duty Factor = 1/10)	I_{FM}	100	100	70	mA
Reverse Voltage ($I_R = 10\text{ }\mu\text{A}$)	V_R	5	5	5	V
Power Dissipation	P_D	120	120	80	mW
Junction Temperature	T_J	125	125	125	$^\circ\text{C}$
Thermal Resistance Junction-Air	R_{thJA}	400	400	400	K/W
Operating Temperature	T_{OPR}	-40 to +95			$^\circ\text{C}$
Storage Temperature	T_{STG}	-40 to +100			$^\circ\text{C}$
Lead Soldering Time	T_{SOL}	260 for 5 sec			$^\circ\text{C}$



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ELECTRICAL / OPTICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$)								
Part Number	Symbol	QTLP671C						Condition
		-S	-R	-E	-O	-Y	-AG	
Luminous Intensity (mcd)								
Minimum	I_V	25	25	25	25	25	15	$I_F = 20\text{mA}$
Typical		65	65	65	65	65	30	
Forward Voltage (V)								
Maximum	V_F	2.4	2.4	2.4	2.4	2.4	2.4	$I_F = 20\text{mA}$
Typical		2.0	2.0	2.0	2.0	2.0	2.0	
Wavelength (nm)								
Peak	λ_P	640	630	620	610	590	575	$I_F = 20\text{mA}$
Dominant	λ_D	632	624	615	605	589	573	
Spectral Line Half Width (nm)	$\Delta\lambda$	20	20	18	18	15	20	$I_F = 20\text{mA}$
Viewing Angle ($^\circ$)	$2\Theta^{1/2}$	120	120	120	120	120	120	$I_F = 20\text{mA}$

ELECTRICAL / OPTICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$)					
Part Number	Symbol	QTLP671C			Condition
		-IB	-IG	-IW	
Luminous Intensity (mcd)					
Minimum	I_V	30	75	100	$I_F = 20\text{mA}$
Typical		60	115	250	
Forward Voltage (V)					
Maximum	V_F	4.0	4.0	4.0	$I_F = 20\text{mA}$
Typical		3.5	3.5	3.5	
Wavelength (nm)					
Peak	λ_P	465	520	—	$I_F = 20\text{mA}$
Dominant	λ_D	470	525	—	
Chromaticity Coordinate	x,y	—	—	$x = 0.30, y = 0.31$	$I_F = 20\text{mA}$
Spectral Line Half Width (nm)	$\Delta\lambda$	25	35	—	$I_F = 20\text{mA}$
Viewing Angle ($^\circ$)	$2\Theta^{1/2}$	120	120	120	$I_F = 20\text{mA}$



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TYPICAL PERFORMANCE CURVES (QTLP671C-S, -R, -E, -O, -Y and -AG)

Fig. 1 Forward Current vs. Forward Voltage

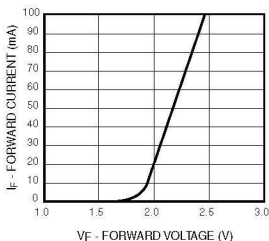


Fig. 2 Relative Luminous Intensity vs. DC Forward Current

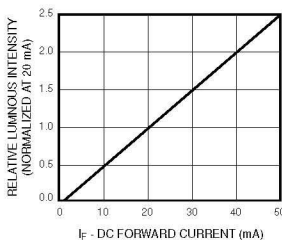


Fig. 3 Relative Intensity vs. Peak Wavelength

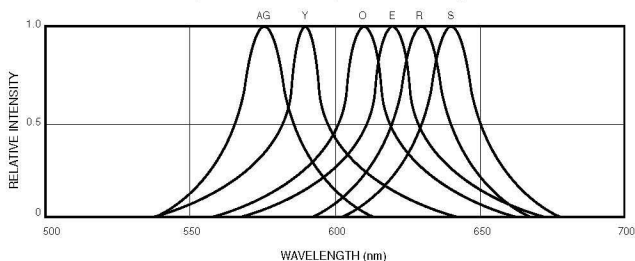


Fig.4 Radiation Diagram

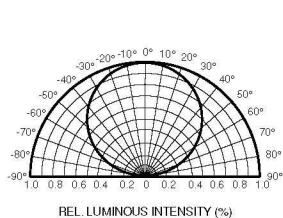
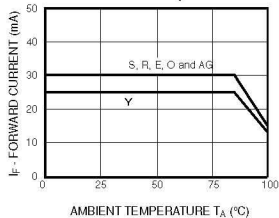


Fig.5 Maximum Forward Current vs. Ambient Temperature





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TYPICAL PERFORMANCE CURVES (QTLP671C-IG, -IB and -IW)

Fig. 1 Forward Current vs. Forward Voltage

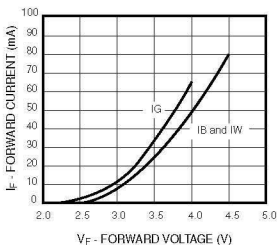


Fig. 2 Relative Luminous Intensity vs. DC Forward Current

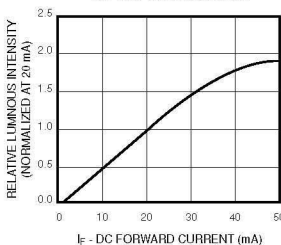


Fig. 3 Relative Intensity vs. Peak Wavelength

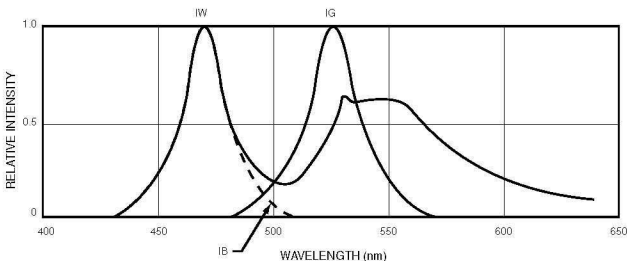


Fig. 4 Radiation Diagram

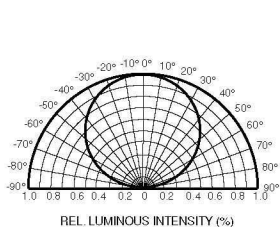
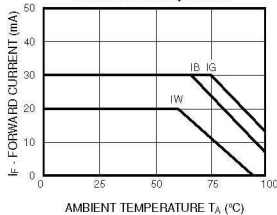


Fig. 5 Maximum Forward Current vs. Ambient Temperature





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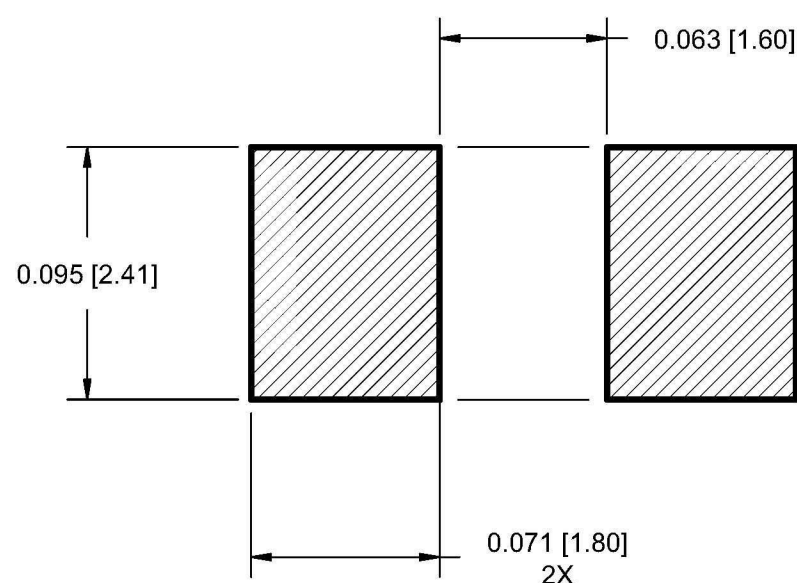
QTLP671C-IB Blue

QTLP671C-E Orange

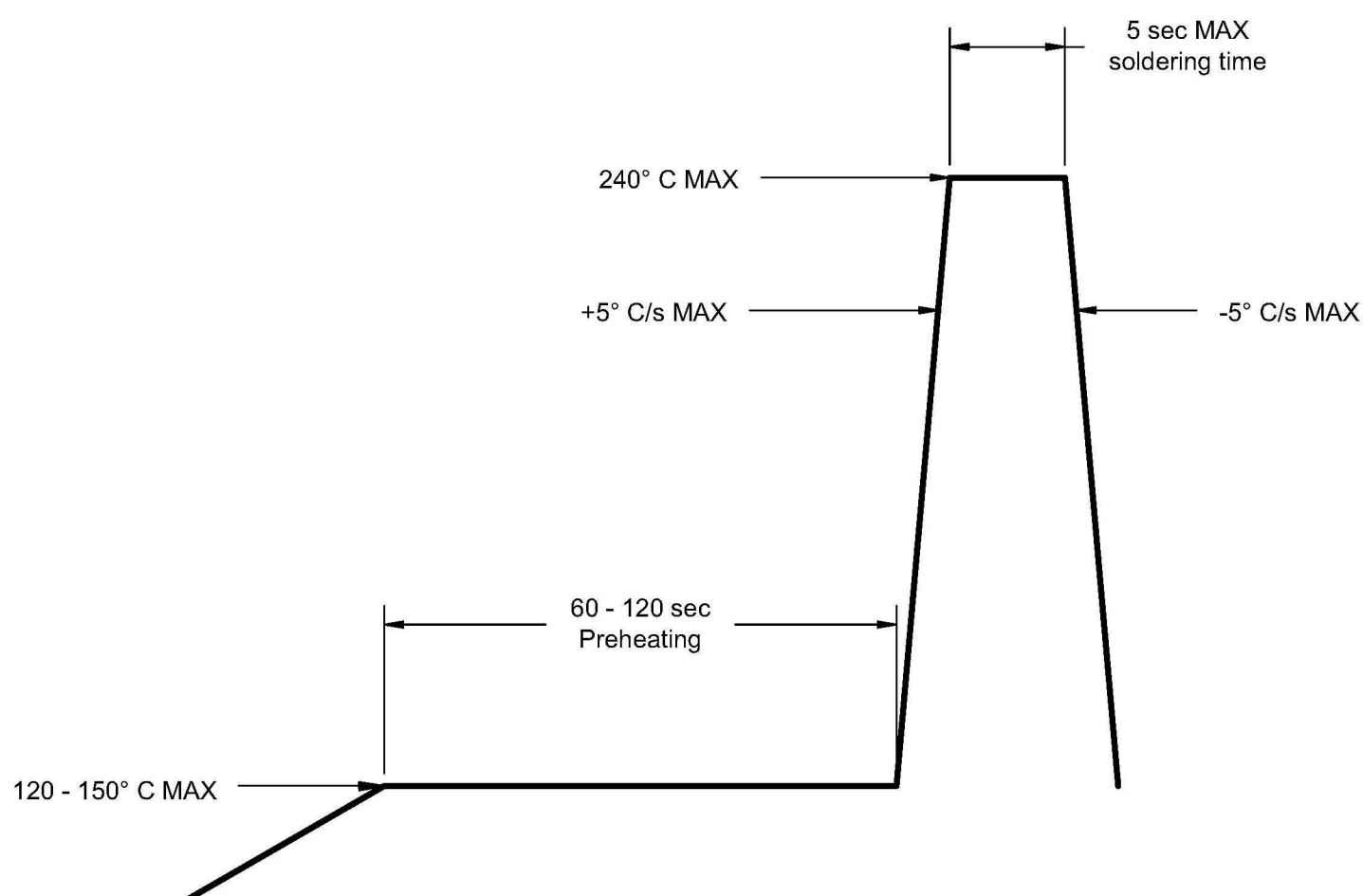
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QTLP671C-IW White

RECOMMENDED PRINTED CIRCUIT BOARD PATTERN



RECOMMENDED REFLOW SOLDERING PROFILE





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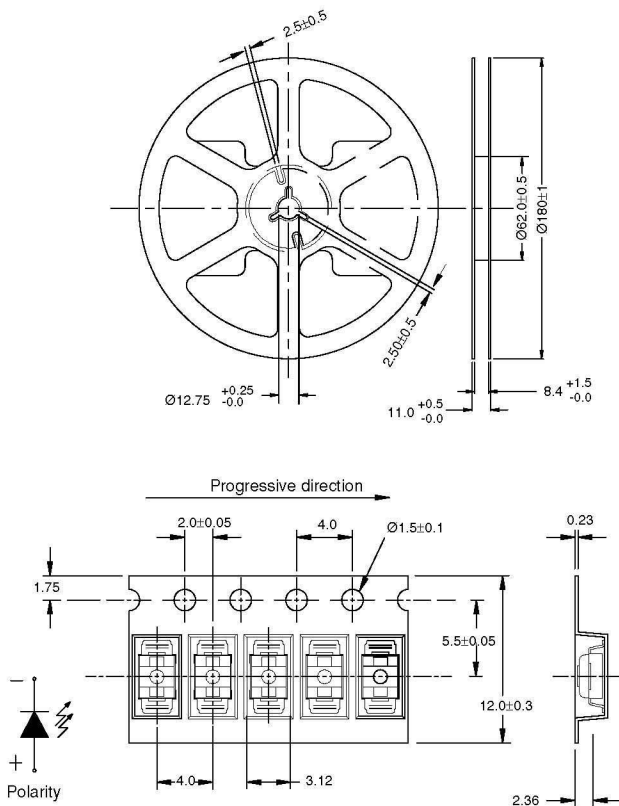
QTLP671C-AG Yellow-Green

QTLP671C-IG True Green

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TAPE AND REEL DIMENSIONS



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

Angle: ± 0.5

Unit: mm



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DISCLAIMER

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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.