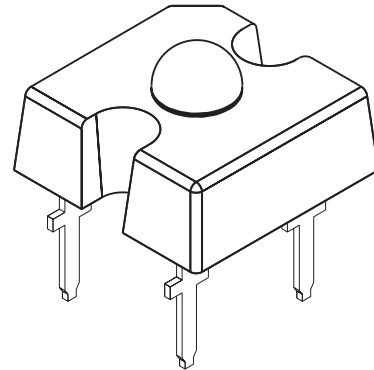
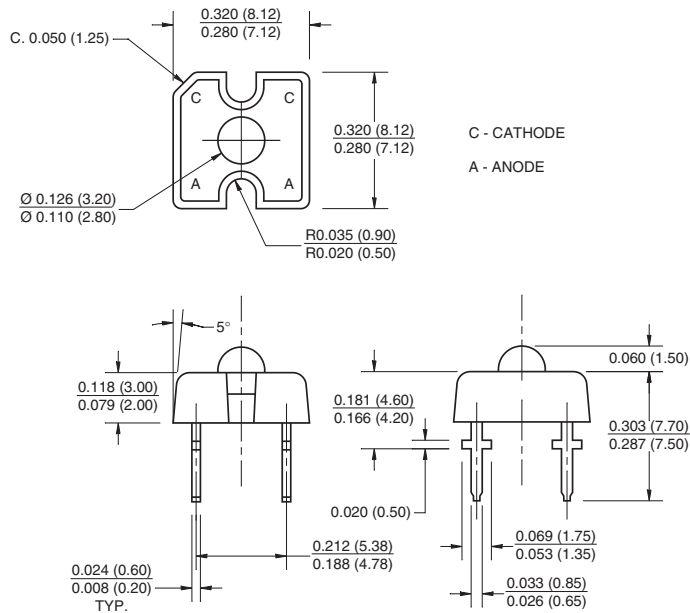


**RED QTLP320C-R    ORANGE QTLP320C-E    YELLOW QTLP320C-Y**

## PACKAGE DIMENSIONS



### NOTES:

1. Dimensions for all drawings are in inches (mm).
2. Lead spacing is measured where the leads emerge from the package.
3. Protruded resin under the flange is 0.059" (1.5 mm) max.
4. All tolerances are  $\pm 0.10$ " (0.25 mm) unless otherwise specified.

## DESCRIPTION

This low profile, 4-pin LED provides a more uniform and evenly distributed illumination than existing LED designs. Its unique optical package enables designers to utilize fewer LEDs while achieving superior lighting performance.

## FEATURES

- AllnGaP (Aluminum Indium Gallium Phosphide) technology
- High current application
- Reduced thermal resistance
- Tube packaging

## APPLICATIONS

- Exterior automotive lighting
- Area displays
- Backlighting
- Message panels

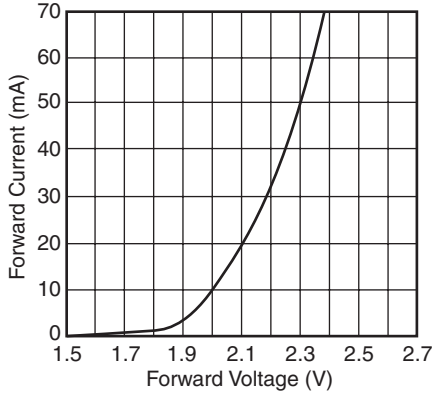
**RED QTLP320C-R    ORANGE QTLP320C-E    YELLOW QTLP320C-Y**

<b>ABSOLUTE MAXIMUM RATINGS</b> ( $T_A = 25^\circ\text{C}$ unless otherwise specified)			
Parameter	Symbol	Rating	Unit
Operating Temperature	$T_{OPR}$	-40 to +100	$^\circ\text{C}$
Storage Temperature	$T_{STG}$	-40 to +100	$^\circ\text{C}$
Lead Soldering Time	$T_{SOL}$	260 for 5 sec	$^\circ\text{C}$
Continuous Forward Current	$I_F$	70	mA
Peak Forward Current ( $f = 100\text{ Hz}$ , Duty Factor = 1/10)	$I_F$	200	mA
Reverse Voltage	$V_R$	5	V
Reverse Current	$I_R$	10	$\mu\text{A}$
Power Dissipation	$P_D$	160	mW

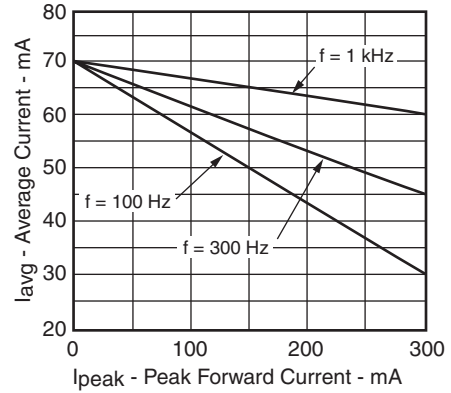
<b>ELECTRICAL/OPTICAL CHARACTERISTICS</b> ( $T_A = 25^\circ\text{C}$ )				
Part Number	QTLP320C-R	QTLP320C-E	QTLP320C-Y	Condition
Luminous Flux (lm)				$I_F = 70\text{ mA}$
Minimum	500	500	500	
Typical	1300	1300	1300	
Forward Voltage $V_F$ (V)				$I_F = 70\text{ mA}$
Maximum	2.9	2.9	2.9	
Typical	2.3	2.3	2.3	
Wavelength (nm)				$I_F = 70\text{ mA}$
Peak	630	620	590	
Dominant	625	615	589	
Spectral Line Half Width (nm)	20	18	15	$I_F = 70\text{ mA}$
Viewing Angle ( $^\circ$ )	70	70	70	$I_F = 70\text{ mA}$

**RED QTLP320C-R    ORANGE QTLP320C-E    YELLOW QTLP320C-Y**

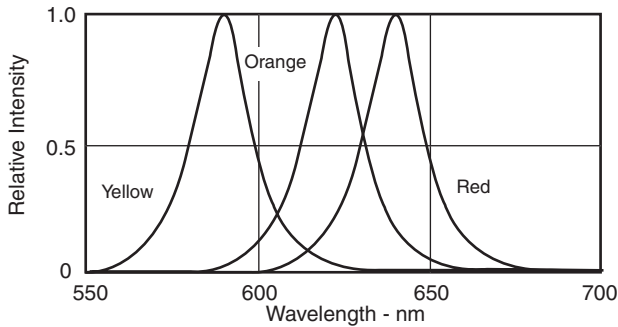
**TYPICAL PERFORMANCE CURVES**



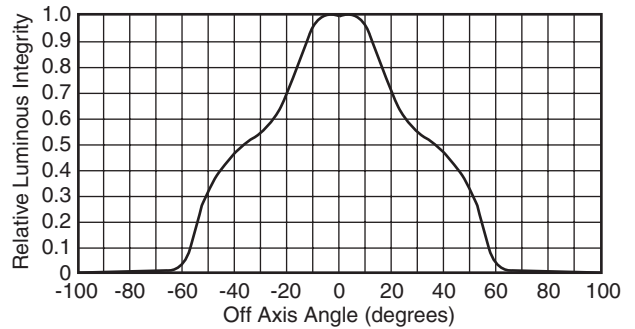
**Fig 1. Forward Current vs. Forward Voltage**



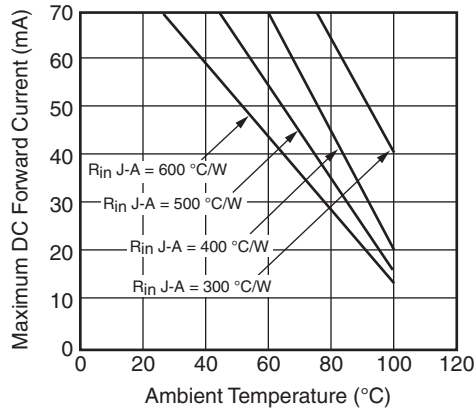
**Fig 2. Maximum Average Current vs. Peak Forward Current**



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



**Fig 4. Relative Luminous Intensity vs. Off Axis Angle**



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

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**RED QTLP320C-R    ORANGE QTLP320C-E    YELLOW QTLP320C-Y**

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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.