

QTLP690C-R Red

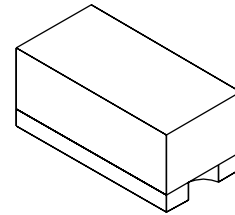
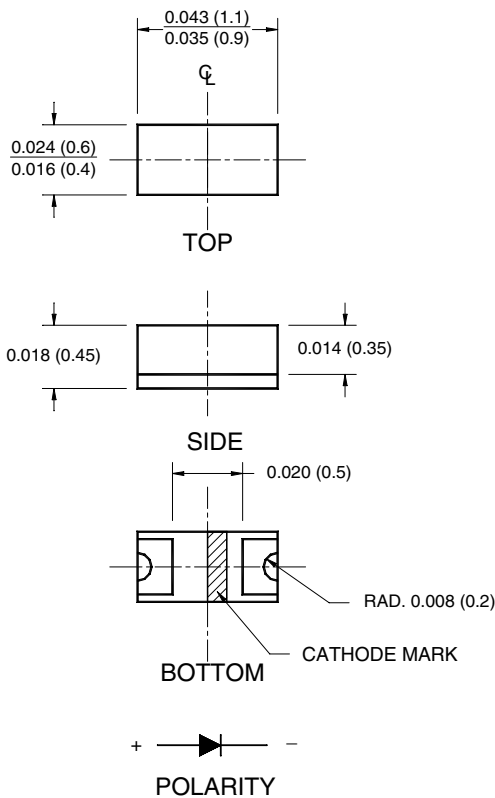
QTLP690C-E Orange

QTLP690C-O Yellow-Orange

QTLP690C-Y Yellow

QTLP690C-AG Yellow-Green

### PACKAGE DIMENSIONS



**NOTE:**

Dimensions for all drawings are in inches (mm).

### APPLICATIONS

- Keypad backlighting
- Push-button backlighting

### DESCRIPTION

Extremely thin and compact, the 0402 chip LED is ideal for compact products. Ultra-miniature footprint, low profile and wide viewing angle make QTLP690C a perfect candidate for backlighting cell phone key pads.

### FEATURES

- Ultra-miniature - 1.0(L) X 0.5(W) X 0.45(H) mm
- AllInGaP technology for -R, -E, -O, -Y and -AG
- Wide viewing angle of 100°
- 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<sub>A</sub> =25°C Unless otherwise specified)

Parameter	Symbol	QTLP690C					Units
		-R	-E	-O	-Y	-AG	
Continuous Forward Current	I <sub>F</sub>	30	30	30	25	30	mA
Peak Forward Current (f = 1.0 KHz, Duty Factor = 1/10)	I <sub>FM</sub>	160	160	160	120	160	mA
Reverse Voltage	V <sub>R</sub>	5	5	5	5	5	V
Power Dissipation	P <sub>D</sub>	72	72	72	60	72	mW
Operating Temperature	T <sub>OPR</sub>	-40 to +85					°C
Storage Temperature	T <sub>STG</sub>	-40 to +90					°C
Lead Soldering Time	T <sub>SOL</sub>	260 for 5 sec					°C

**ELECTRICAL / OPTICAL CHARACTERISTICS** (T<sub>A</sub> =25°C)

Part Number	Symbol	QTLP690C					Condition
		-R	-E	-O	-Y	-AG	
Luminous Intensity (mcd)	I <sub>v</sub>	15	15	15	15	10	I <sub>F</sub> = 20mA
Minimum							
Typical		35	35	35	35	15	
Forward Voltage (V)	V <sub>F</sub>	2.4	2.4	2.4	2.4	2.4	I <sub>F</sub> = 20mA
Maximum							
Typical		2.0	2.0	2.0	2.0	2.0	
Wavelength (nm)	λ <sub>P</sub>	630	620	610	590	575	I <sub>F</sub> = 20mA
Peak							
Dominant	λ <sub>D</sub>	624	615	605	589	573	
Spectral Line Half Width (nm)	Δλ	20	18	18	15	20	I <sub>F</sub> = 20mA
Viewing Angle (°)	2Θ <sub>1/2</sub>	120	120	120	120	120	I <sub>F</sub> = 20mA

**QTLP690C-R** Red

**QTLP690C-E** Orange

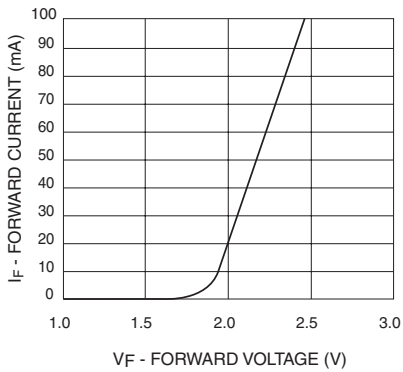
**QTLP690C-O** Yellow-Orange

**QTLP690C-Y** Yellow

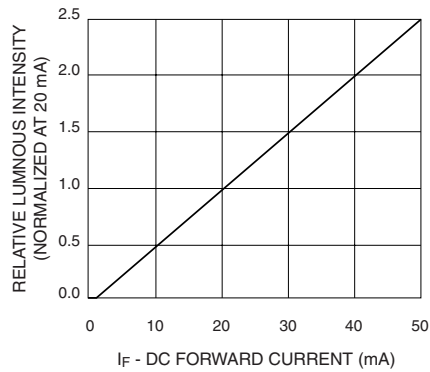
**QTLP690C-AG** Yellow-Green

**TYPICAL PERFORMANCE CURVES**

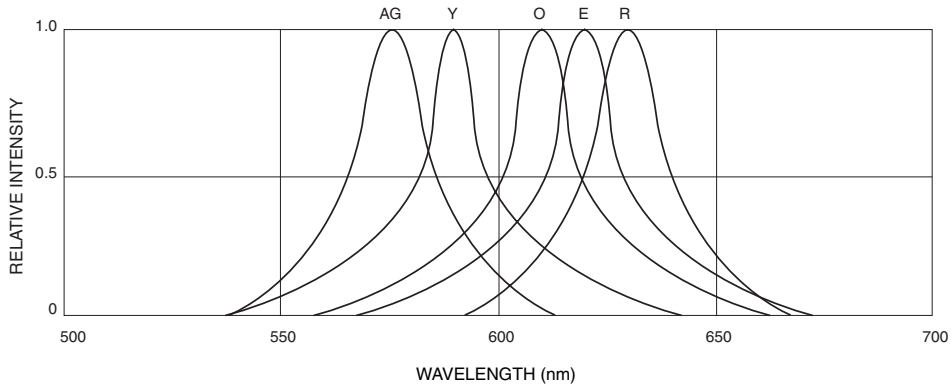
**Fig. 1 Forward Current vs. Forward Voltage**



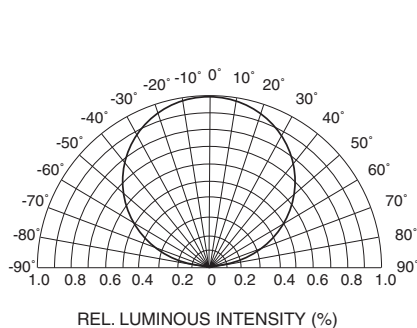
**Fig. 2 Relative Luminous Intensity vs. DC Forward Current**



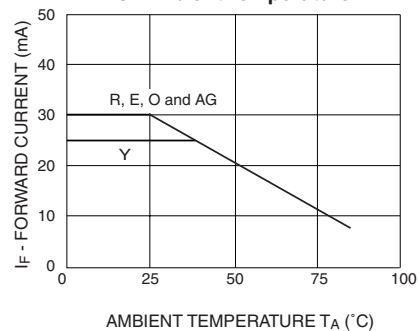
**Fig. 3 Relative Intensity vs. Peak Wavelength**



**Fig.4 Radiation Diagram**



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



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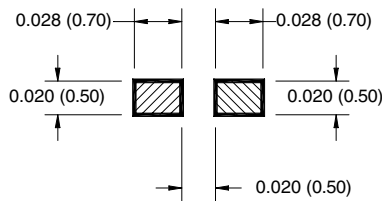
QTLP690C-E Orange

QTLP690C-O Yellow-Orange

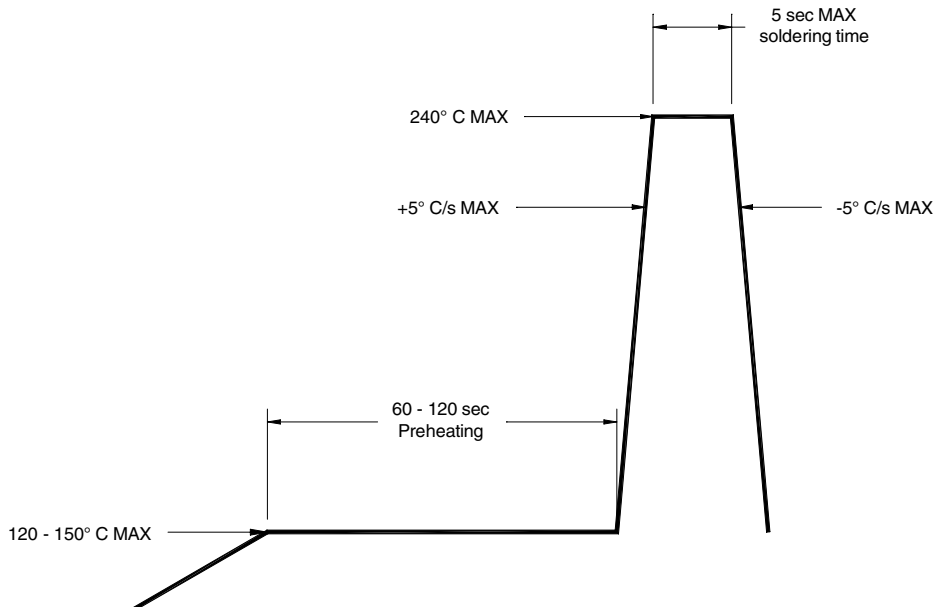
QTLP690C-Y Yellow

QTLP690C-AG Yellow-Green

**RECOMMENDED PRINTED CIRCUIT BOARD PATTERN**



**RECOMMENDED IR REFLOW SOLDERING PROFILE**



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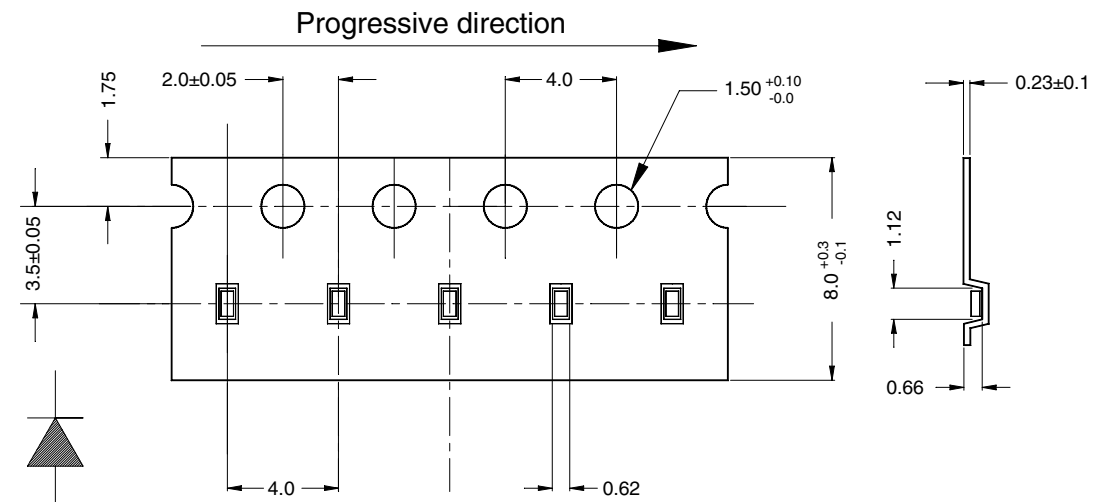
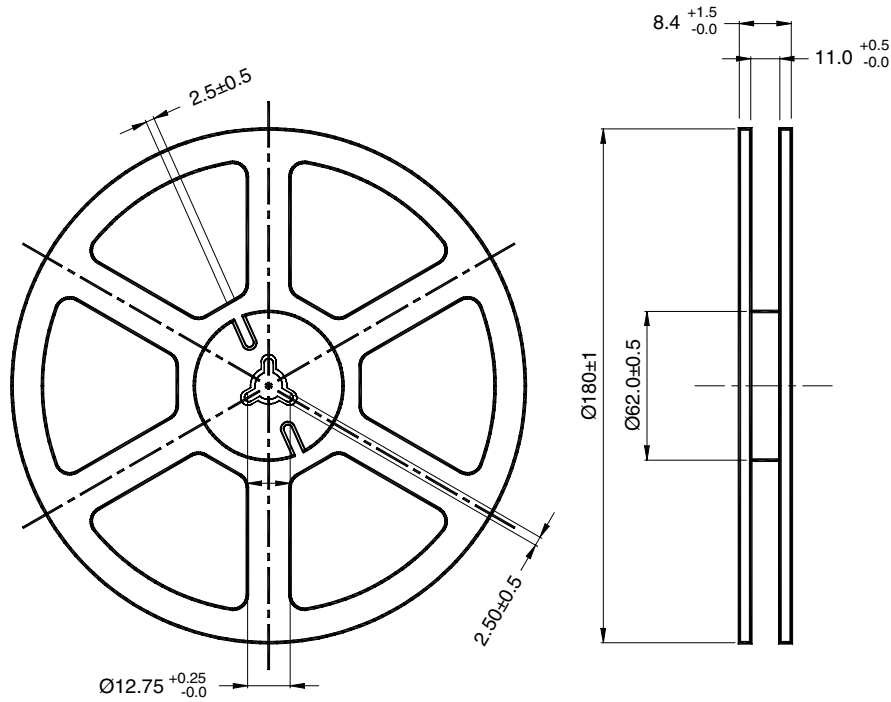
QTLP690C-E Orange

QTLP690C-O Yellow-Orange

QTLP690C-Y Yellow

QTLP690C-AG Yellow-Green

**TAPE AND REEL DIMENSIONS**



Polarity

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

Unit = mm

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