

FAIRCHILD
SEMICONDUCTOR®

SURFACE MOUNT LED LAMP

SUPER BRIGHT 0402

QTLP690C-R Red

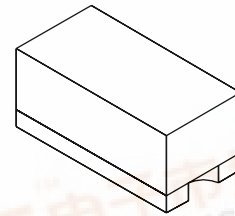
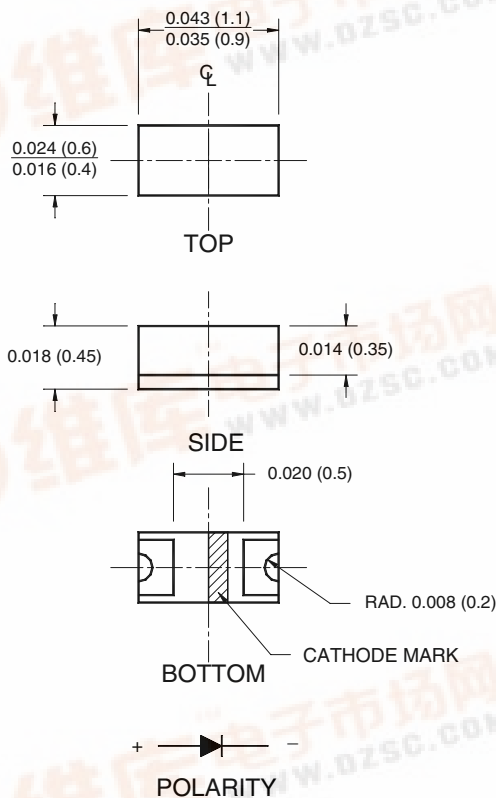
QTLP690C-E Orange

QTLP690C-O Yellow-Orange

QTLP690C-Y Yellow

QTLP690C-AG Yellow-Green

PACKAGE DIMENSIONS



APPLICATIONS

- Keypad backlighting
- Push-button backlighting

NOTE:

Dimensions for all drawings are in inches (mm).

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
- AllnGaP 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



SURFACE MOUNT LED LAMP

SUPER BRIGHT 0402

QTLP690C-R Red

QTLP690C-E Orange

QTLP690C-O Yellow-Orange

QTLP690C-Y Yellow

QTLP690C-AG Yellow-Green

ABSOLUTE MAXIMUM RATINGS (T_A =25°C Unless otherwise specified)

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

ELECTRICAL / OPTICAL CHARACTERISTICS (T_A =25°C)

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

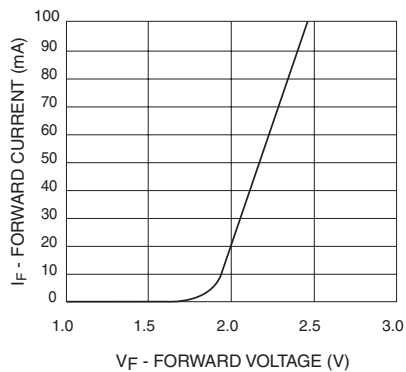


Fig. 2 Relative Luminous Intensity vs. DC Forward Current

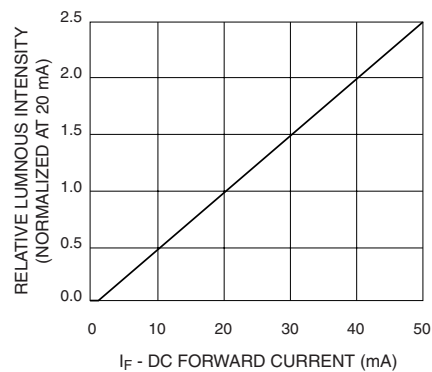


Fig. 3 Relative Intensity vs. Peak Wavelength

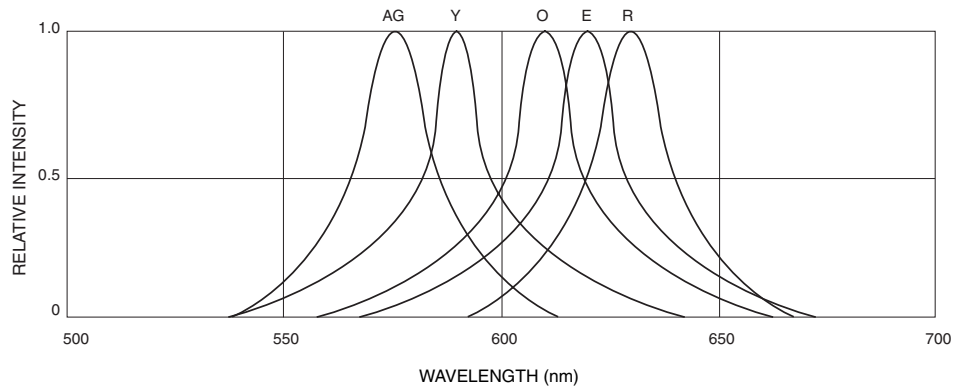


Fig.4 Radiation Diagram

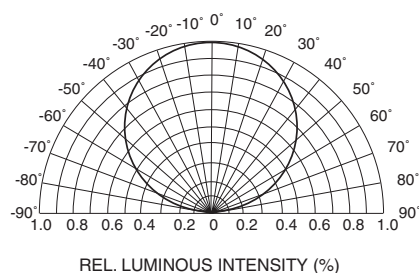
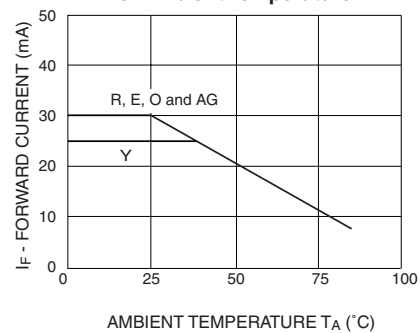


Fig.5 Maximum Forward Current vs. Ambient Temperature



SURFACE MOUNT LED LAMP SUPER BRIGHT 0402

QTLP690C-R Red

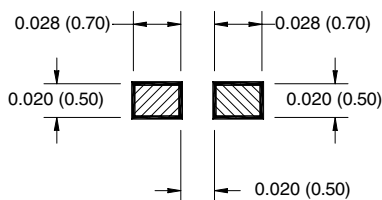
QTLP690C-E Orange

QTLP690C-O Yellow-Orange

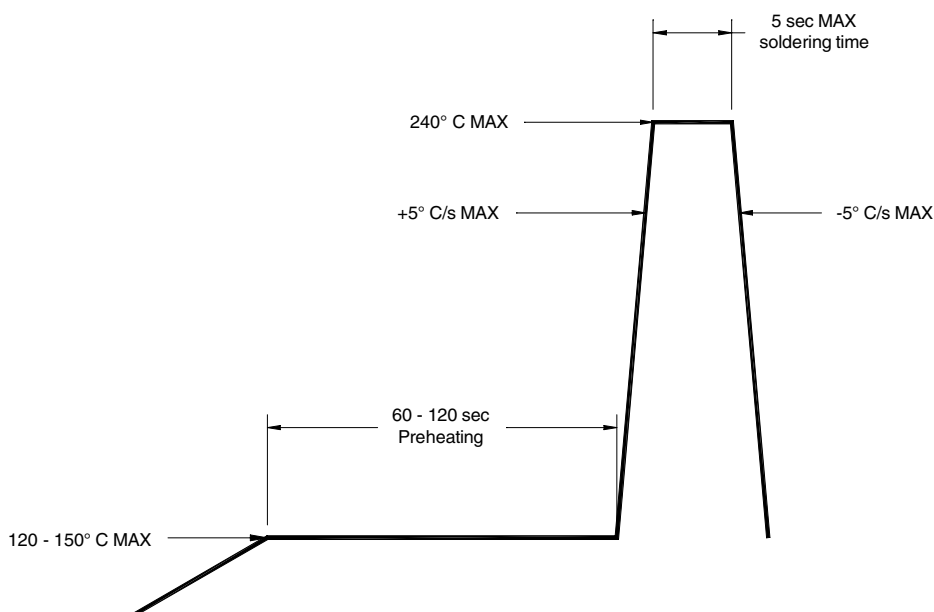
QTLP690C-Y Yellow

QTLP690C-AG Yellow-Green

RECOMMENDED PRINTED CIRCUIT BOARD PATTERN



RECOMMENDED IR REFLOW SOLDERING PROFILE





QTLP690C-O Yellow-Orange

QTLP690C-AG Yellow-Green

Technical drawing of a circular part. The top view shows a circular part with a central hole of diameter $\varnothing 12.75^{+0.25}_{-0.0}$ and six radial slots. The slots have a width of 2.5 ± 0.5 mm. The side view shows a cylindrical part with an outer diameter of $\varnothing 180 \pm 1$ mm and an inner diameter of $\varnothing 62.0 \pm 0.5$ mm. The total height is 11.0 mm, with a top flange of 8.4 mm ($+1.5/-0.0$) and a bottom flange of 2.5 mm ($+0.5/-0.0$).

Progressive direction

Technical drawing of a rectangular part. The top view shows a rectangular part with a width of 8.0 mm ($+0.3/-0.1$) and a length of 1.75 mm. There are four circular holes with a diameter of 4.0 mm, spaced 2.0 mm (± 0.05) apart. The distance from the center of the first hole to the left edge is 4.0 mm, and from the center of the last hole to the right edge is 4.0 mm. The distance from the center of the first hole to the right edge is 1.50 mm ($+0.10/-0.0$). The distance from the center of the last hole to the left edge is 0.62 mm. The side view shows a rectangular part with a height of 1.12 mm and a width of 0.23 mm (± 0.1). The distance from the top edge to the bottom edge is 0.66 mm.

Dimensional tolerance is ± 0.1 mm unless otherwise specified
Unit = mm



SURFACE MOUNT LED LAMP

SUPER BRIGHT 0402

QTLP690C-R Red

QTLP690C-E Orange

QTLP690C-O Yellow-Orange

QTLP690C-Y Yellow

QTLP690C-AG Yellow-Green

DISCLAIMER

FAIRCHILD SEMICONDUCTOR RESERVES THE RIGHT TO MAKE CHANGES WITHOUT FURTHER NOTICE TO ANY PRODUCTS HEREIN TO IMPROVE RELIABILITY, FUNCTION OR DESIGN. FAIRCHILD DOES NOT ASSUME ANY LIABILITY ARISING OUT OF THE APPLICATION OR USE OF ANY PRODUCT OR CIRCUIT DESCRIBED HEREIN; NEITHER DOES IT CONVEY ANY LICENSE UNDER ITS PATENT RIGHTS, NOR THE RIGHTS OF OTHERS.

LIFE SUPPORT POLICY

FAIRCHILD'S PRODUCTS ARE NOT AUTHORIZED FOR USE AS CRITICAL COMPONENTS IN LIFE SUPPORT DEVICES OR SYSTEMS WITHOUT THE EXPRESS WRITTEN APPROVAL OF THE PRESIDENT OF FAIRCHILD SEMICONDUCTOR CORPORATION. As used herein:

1. Life support devices or systems are devices or systems which, (a) are intended for surgical implant into the body, or (b) support or sustain life, and (c) whose failure to perform when properly used in accordance with instructions for use provided in labeling, can be reasonably expected to result in a significant injury of the user.
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.