

FAIRCHILD
SEMICONDUCTOR®

SURFACE MOUNT LED LAMP

SUPER BRIGHT RIGHT ANGLE

QTLP610C-R Red

QTLP610C-E Orange

QTLP610C-O Yellow-Orange

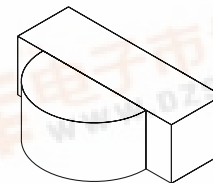
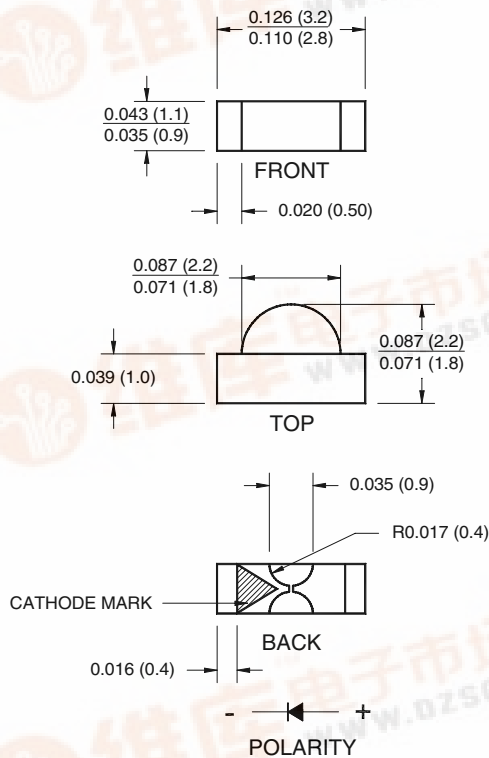
QTLP610C-Y Yellow

QTLP610C-AG Yellow-Green

QTLP610C-IG True Green

QTLP610C-IB Blue

PACKAGE DIMENSIONS



NOTE:

Dimensions for all drawings are in inches (mm).

APPLICATIONS

- LCD edge-lighting
- Edge card edge-lighting

DESCRIPTION

These super bright right angle surface mount chip LEDs emit light in the lateral direction. Small size and wide viewing angle make these LEDs ideal choices for status indication in consumer electronics, industrial control and other applications.

FEATURES

- Small footprint - 3.0(L) X 2.0(W) X 1.0(H) mm
- AllInGaP technology for -R, -E, -O, -Y and -AG
- InGaN/SiC technology for -IG and -IB
- 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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ABSOLUTE MAXIMUM RATINGS (T_A =25°C Unless otherwise specified)

Parameter	Symbol	QTLP610C					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 (I _R = 10 µA)	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

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

Parameter	Symbol	QTLP610C		Units
		-IB	-IG	
Continuous Forward Current	I _F	30	30	mA
Peak Forward Current (f = 1.0 KHz, Duty Factor = 1/10)	I _{FM}	100	100	mA
Reverse Voltage (I _R = 10 µA)	V _R	5	5	V
Power Dissipation	P _D	120	120	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

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ELECTRICAL / OPTICAL CHARACTERISTICS (T _A =25°C)							
Part Number	Symbol	QTLP610C					Condition
		-R	-E	-O	-Y	-AG	
Luminous Intensity (mcd)	I _V						I _F = 20mA
Minimum		20	20	20	20	10	
Typical		45	45	45	45	20	
Forward Voltage (V)	V _F						I _F = 20mA
Maximum		2.4	2.4	2.4	2.4	2.4	
Typical		2.0	2.0	2.0	2.0	2.0	
Wavelength (nm)	λ _P						I _F = 20mA
Peak		630	620	610	590	575	
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

ELECTRICAL / OPTICAL CHARACTERISTICS (T _A =25°C)				
Part Number	Symbol	QTLP610C		Condition
		-IB	-IG	
Luminous Intensity (mcd)	I _V			I _F = 20mA
Minimum		20	60	
Typical		30	100	
Forward Voltage (V)	V _F			I _F = 20mA
Maximum		4.0	4.0	
Typical		3.5	3.5	
Wavelength (nm)	λ _P			I _F = 20mA
Peak		465	520	
Dominant	λ _D	470	525	
Spectral Line Half Width (nm)	Δλ	25	35	I _F = 20mA
Viewing Angle (°)	2Θ _{1/2}	120	120	I _F = 20mA

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TYPICAL PERFORMANCE CURVES (QTLP610C-R, -E, -O, -Y and -AG)

Fig. 1 Forward Current vs. Forward Voltage

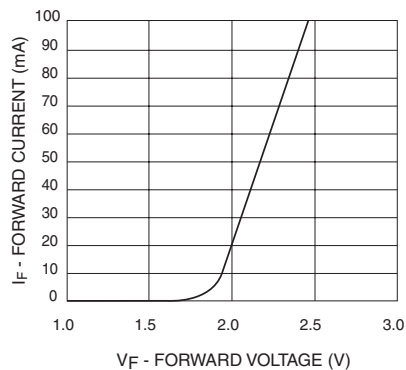


Fig. 2 Relative Luminous Intensity vs. DC Forward Current

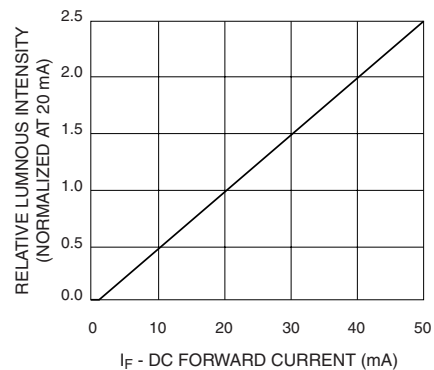


Fig. 3 Relative Intensity vs. Peak Wavelength

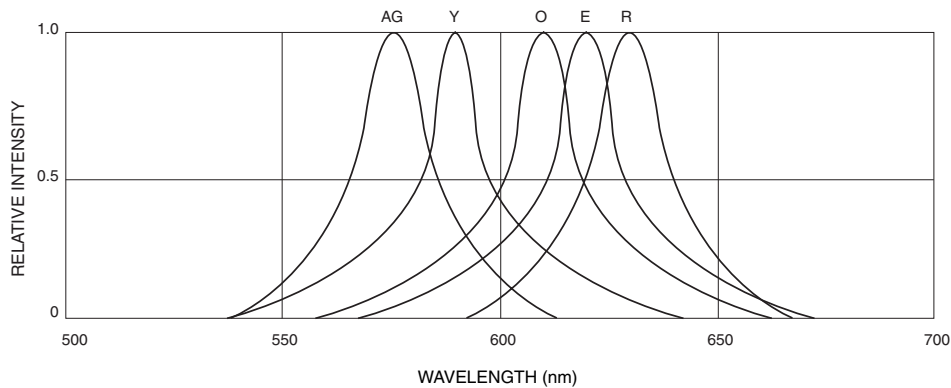


Fig.4 Radiation Diagram

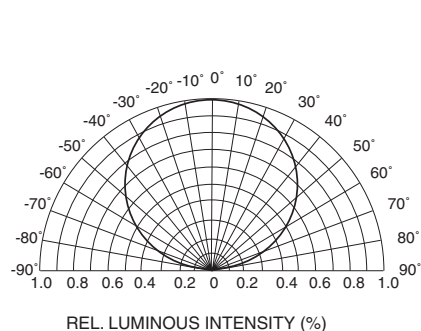
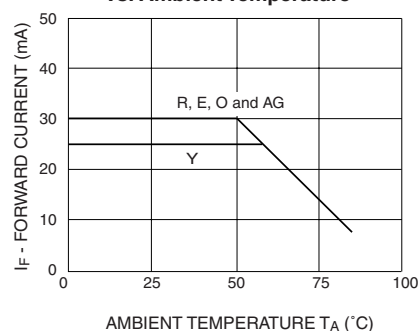


Fig.5 Maximum Forward Current vs. Ambient Temperature



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TYPICAL PERFORMANCE CURVES (QTLP610C-IG and -IB)

Fig. 1 Forward Current vs. Forward Voltage

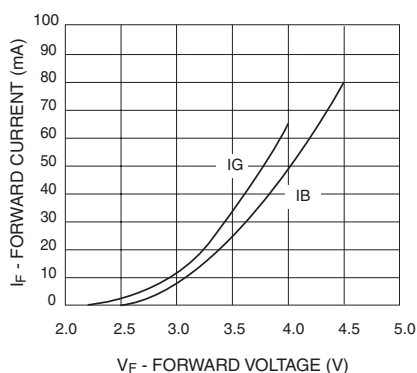


Fig. 2 Relative Luminous Intensity vs. DC Forward Current

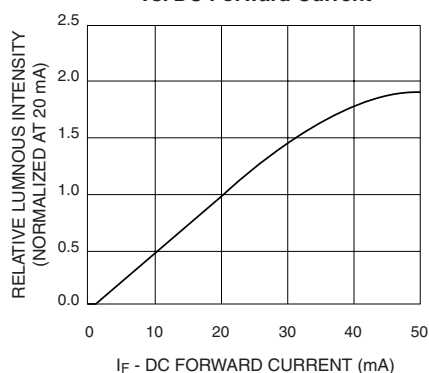


Fig. 3 Relative Intensity vs. Peak Wavelength

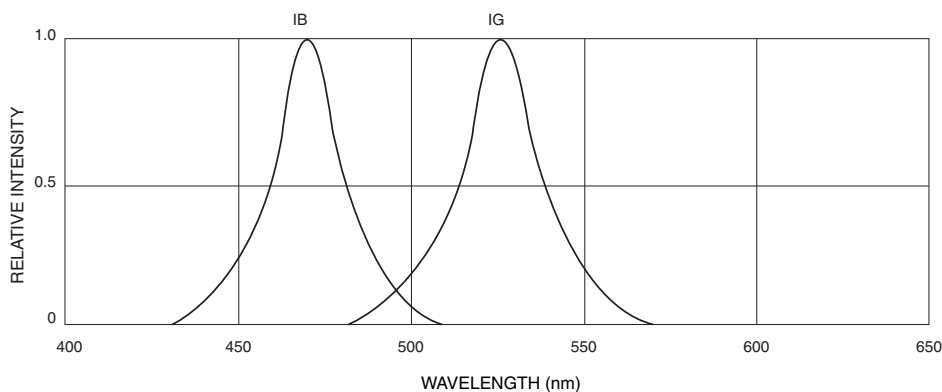


Fig. 4 Radiation Diagram

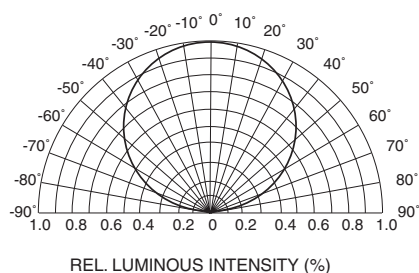
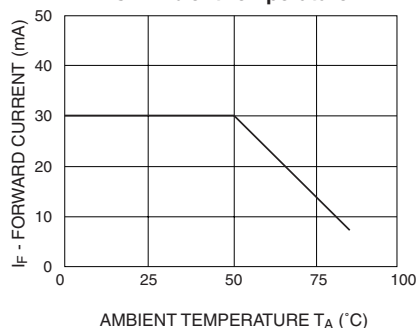


Fig. 5 Maximum Forward Current vs. Ambient Temperature



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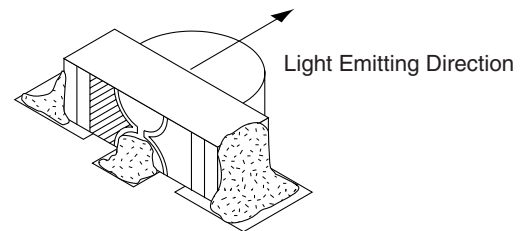
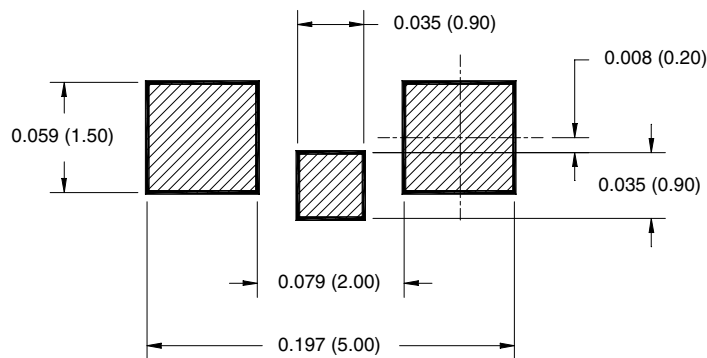
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QTLP610C-AG Yellow-Green

QTLP610C-IG True Green

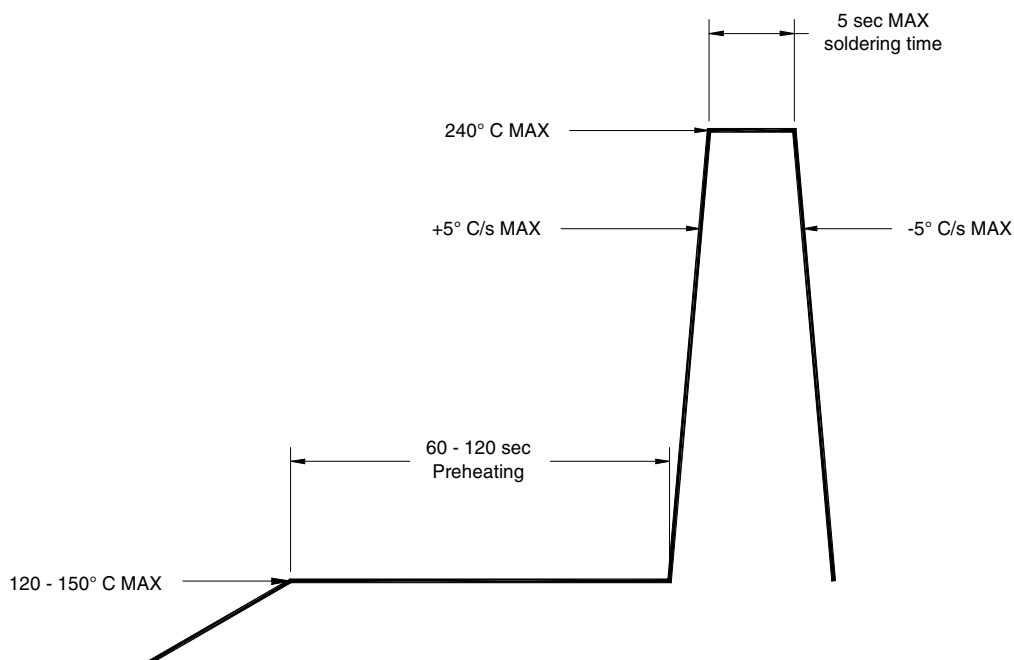
QTLP610C-IB Blue

RECOMMENDED PRINTED CIRCUIT BOARD PATTERN



Mounting Example

RECOMMENDED IR REFLOW SOLDERING PROFILE



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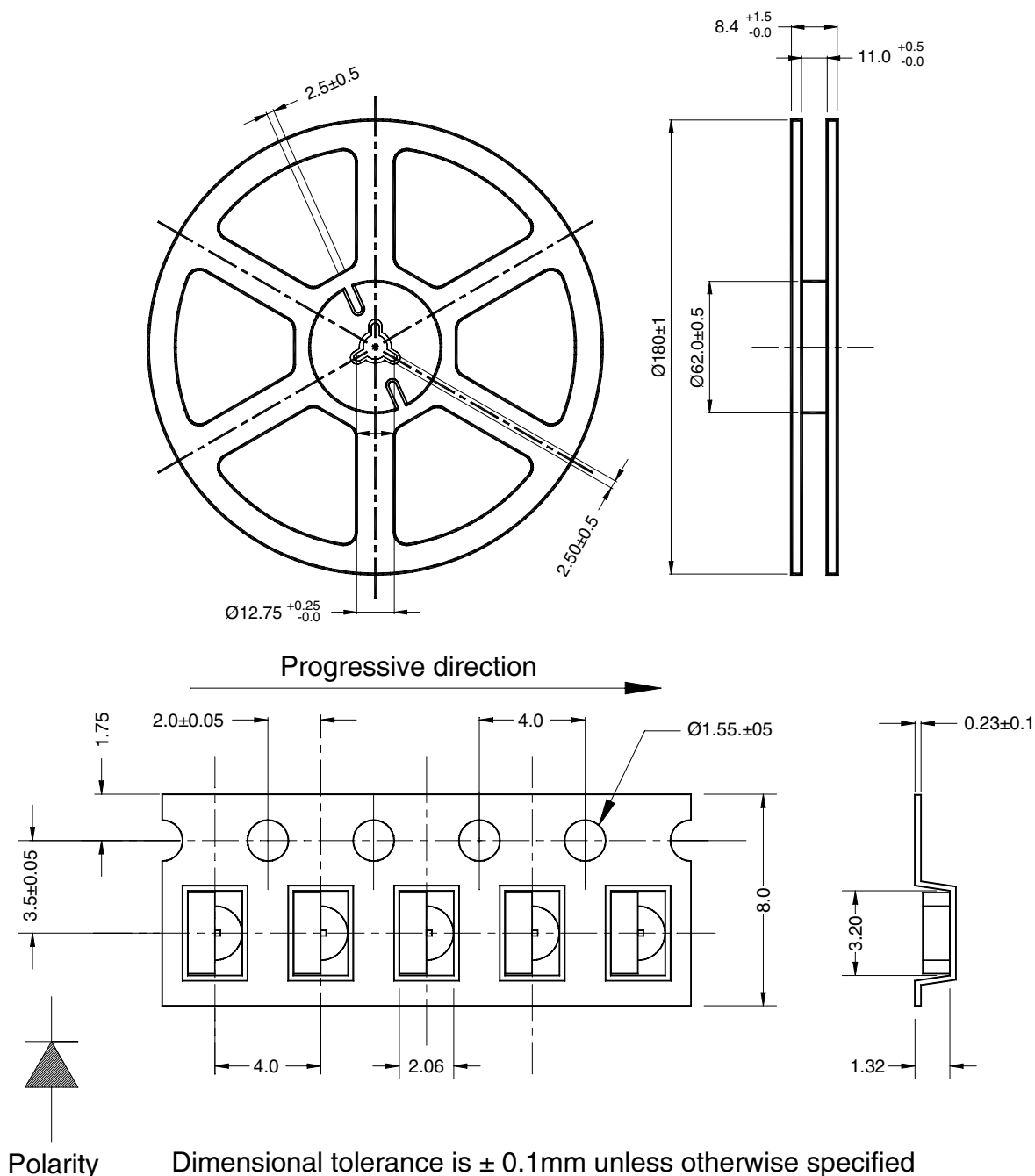
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TAPE AND REEL DIMENSIONS



Dimensional tolerance is ± 0.1 mm unless otherwise specified

Angle: ± 0.5

Unit: mm



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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.