

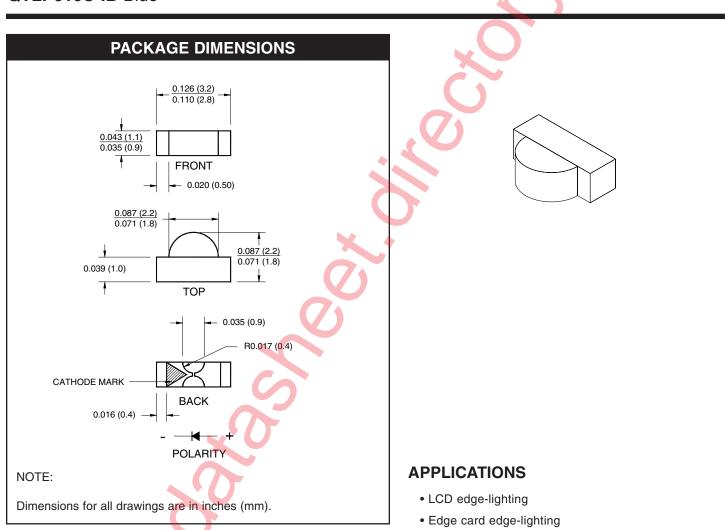
SEMICONDUCTOR®

- QTLP610C-R Red
- QTLP610C-E Orange
- QTLP610C-Y Yellow
- QTLP610C-AG Yellow-Green

QTLP610C-O Yellow-Orange

QTLP610C-IG True Green

QTLP610C-IB Blue



### 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
- AllnGaP technology for -R, -E, -O, -Y and -AG
- InGaN/SiC technology for -IG and -IB
- $\bullet$  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



SEMICONDUCTOR®

QTLP610C-R Red

QTLP610C-E Orange

QTLP610C-O Yellow-Orange

QTLP610C-Y Yellow

QTLP610C-AG Yellow-Green

QTLP610C-IG True Green

QTLP610C-IB Blue

<b>D</b>		QTLP610C					
Parameter	Symbol	-R	-E	-0	-Y	-AG	Units
Continuous Forward Current	I <sub>F</sub>	30	30	30	25	30	mA
Peak Forward Current	In	160	160	160	120	160	mA
(f = 1.0 KHz, Duty Factor = $1/10$ )	IFM	100	100	100	120	100	110.4
Reverse Voltage (I <sub>R</sub> = 10 µA)	V <sub>R</sub>	5	5	5	5	5	V
Power Dissipation	PD	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	

ABSOLUTE MAXIMUM RATINGS (TA =25°C Unless otherwise specified)						
Parameter		QTLP610C				
	Symbol	-IB	-IG	Units		
Continuous Forward Current	I <sub>F</sub>	30	30	mA		
Peak Forward Current	I <sub>FM</sub>	100	100			
(f = 1.0 KHz, Duty Factor = 1/10)		100	100	mA		
Reverse Voltage (I <sub>R</sub> = 10 µA)	V <sub>R</sub>	5	5	V		
Power Dissipation	PD	120	120	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		



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QTLP610C-IB Blue

		QTLP610C					
Part Number	Symbol	-R	-E	-0	-Y	-AG	Condition
Luminous Intensity (mcd)							
Minimum	Ι <sub>V</sub>	20	20	20	20	10	I <sub>F</sub> = 20mA
Typical		45	45	45	45	20	
Forward Voltage (V)							
Maximum	VF	2.4	2.4	2.4	2.4	2.4	I <sub>F</sub> = 20mA
Typical		2.0	2.0	2.0	2.0	2.0	
Wavelength (nm)	, .						
Peak	λ <sub>P</sub>	630	620	610	590	575	I <sub>F</sub> = 20mA
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 (°)	2 <del>0</del> 1/2	120	120	120	120	120	I <sub>F</sub> = 20mA

ELECTRICAL / OPTICAL CHARACTERISTICS (TA =25°C)					
Part Number		QTI	_P610C		
	Symbol	-IB	-IG	Condition	
Luminous Intensity (mcd)					
Minimum	Iv	20	60	I <sub>F</sub> = 20mA	
Typical		30	100		
Forward Voltage (V)					
Maximum	V <sub>F</sub>	4.0	4.0	I <sub>F</sub> = 20mA	
Typical		3.5	3.5		
Wavelength (nm)					
Peak	λ <sub>P</sub>	465	520	$I_F = 20 mA$	
Dominant	λ <sub>D</sub>	470	525		
Spectral Line Half Width (nm)	Δλ	25	35	I <sub>F</sub> = 20mA	
Viewing Angle (°)	201/ <sub>2</sub>	120	120	I <sub>F</sub> = 20mA	



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# 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

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

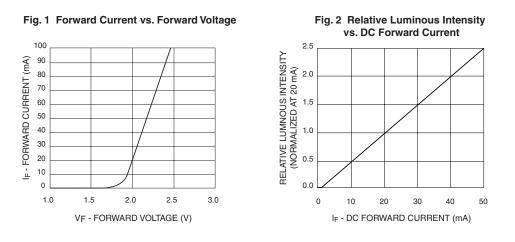


Fig. 3 Relative Intensity vs. Peak Wavelength

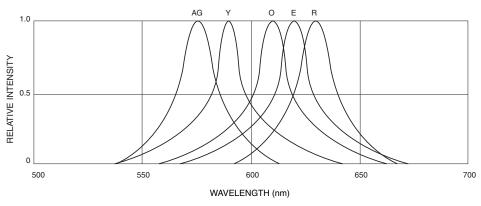
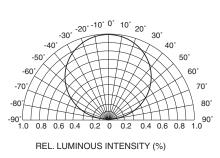
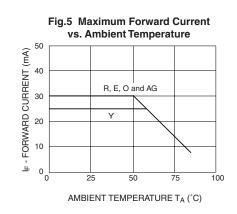


Fig.4 Radiation Diagram







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# SUPER BRIGHT RIGHT ANGLE

QTLP610C-R Red

QTLP610C-E Orange

QTLP610C-O Yellow-Orange

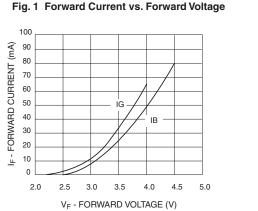
QTLP610C-Y Yellow

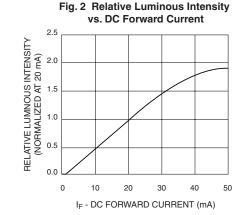
QTLP610C-AG Yellow-Green

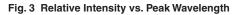
QTLP610C-IG True Green

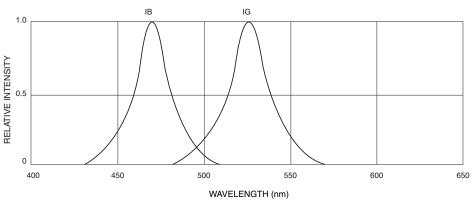
QTLP610C-IB Blue

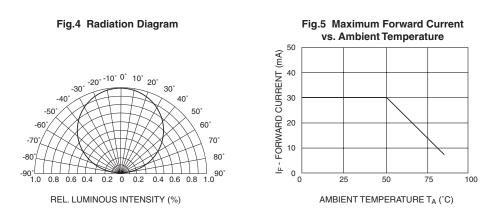
### TYPICAL PERFORMANCE CURVES (QTLP610C-IG and -IB)













SEMICONDUCTOR®

QTLP610C-R Red

QTLP610C-E Orange

QTLP610C-O Yellow-Orange

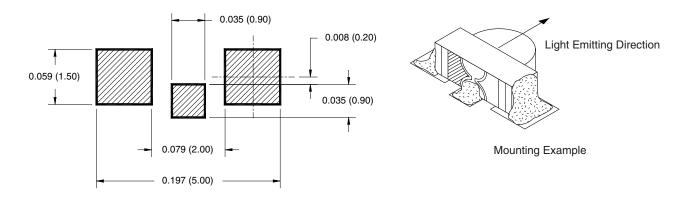
QTLP610C-Y Yellow

QTLP610C-AG Yellow-Green

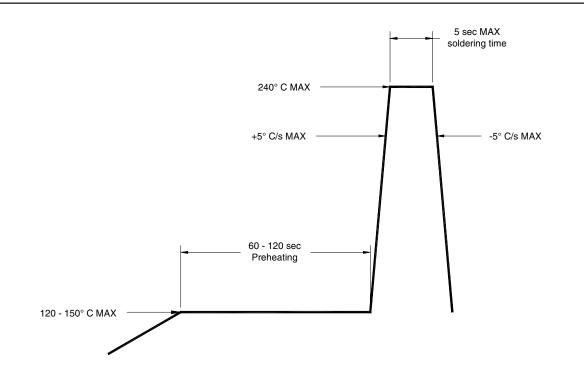
QTLP610C-IG True Green

QTLP610C-IB Blue

### RECOMMENDED PRINTED CIRCUIT BOARD PATTERN



### **RECOMMENDED IR REFLOW SOLDERING PROFILE**





SEMICONDUCTOR®

QTLP610C-R Red

QTLP610C-E Orange

QTLP610C-O Yellow-Orange

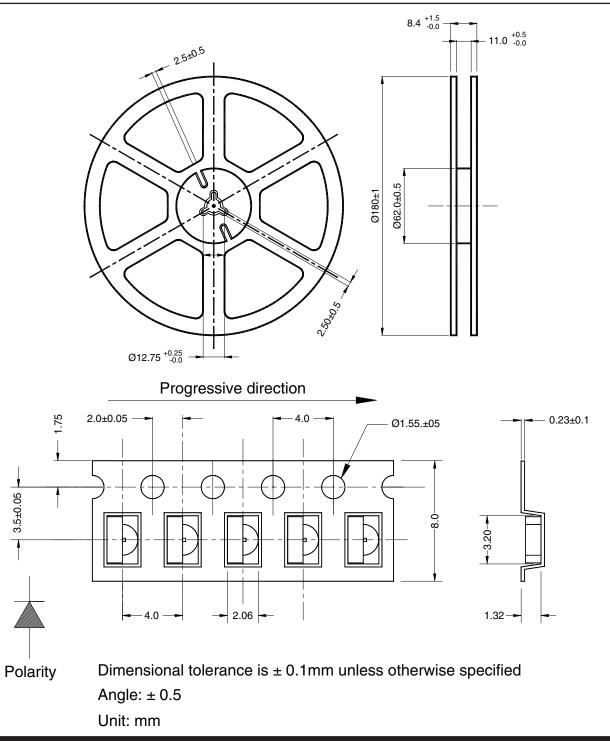
QTLP610C-Y Yellow

QTLP610C-AG Yellow-Green

QTLP610C-IG True Green

QTLP610C-IB Blue

### TAPE AND REEL DIMENSIONS





SEMICONDUCTOR®

QTLP610C-R Red

QTLP610C-E Orange

QTLP610C-O Yellow-Orange

QTLP610C-Y Yellow

QTLP610C-AG Yellow-Green

QTLP610C-IG True Green

QTLP610C-IB Blue

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technical support my Fairchild	<ul> <li>Small footprint - 3.0(L) x 2.0(W) x 1.0(H) mm</li> </ul>		

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and -AG

• Water clear optics

2,000 units per reel

company

#### Applications

- LCD edge-lighting
- Edge card edge-lighting

• AllnGaP technology for -R, -E, -O, -Y

• InGaN/SiC technology for -IG and -IB

• Available in 0.315-inch (8 mm) width tape on 7-inch (178 mm) diameter reel;

• Wide viewing angle of 120°

#### Product Folder - Fairchild P/N QTLP610C-O - Product information

Product status/pricing/packaging

Product	Product status	Pricing*	Package type	Packing method
QTLP610COTR	Full Production	\$0.071	SMD, Right Angle	TAPE REEL

\* 1,000 piece Budgetary Pricing

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my Fairchild	• Small footprint - 3.0(L) x 2.0(W) x 1.0(H) mm	_	
company	<ul> <li>AllnGaP technology for -R, -E, -O, -Y and -AG</li> <li>InGaN/SiC technology for -IG and -IB</li> <li>Wide viewing angle of 120°</li> <li>Water clear optics</li> <li>Available in 0.315-inch (8 mm) width tape on 7-inch (178 mm) diameter reel; 2,000 units per reel</li> </ul>		

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Applications

- LCD edge-lighting
- Edge card edge-lighting

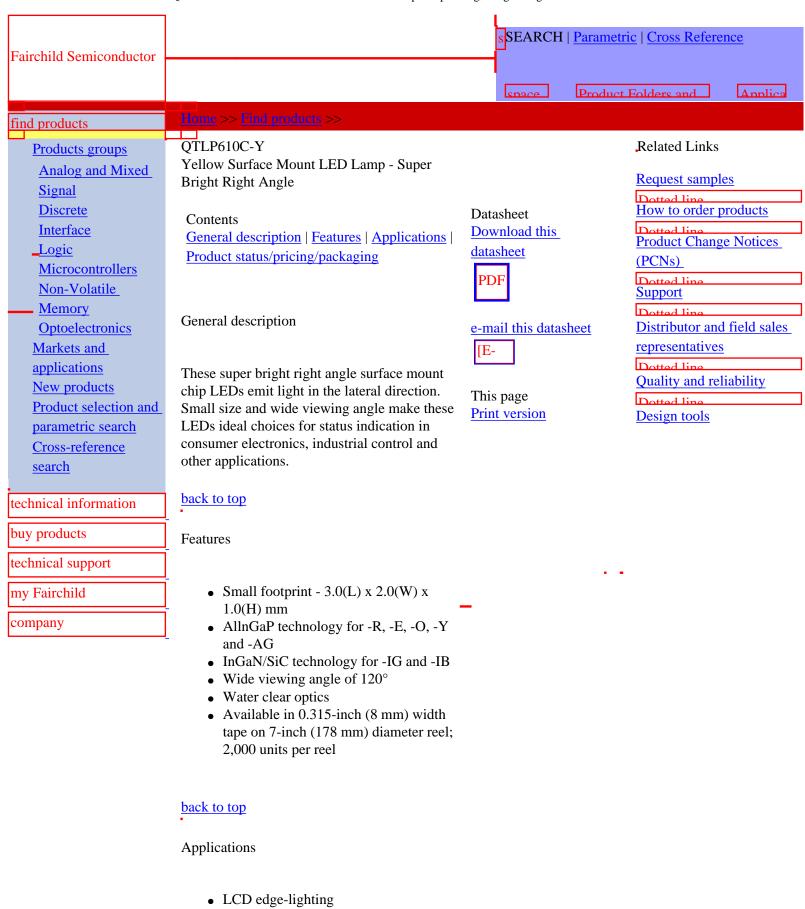
Product	Product status	Pricing*	Package type	Packing method
QTLP610CRAGTR	Full Production	\$0.159	SMD, Right Angle	TAPE REEL
QTLP610C-R.TR	Full Production	\$0.088	SMD, Right Angle	TAPE REEL

\* 1,000 piece Budgetary Pricing

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Product Folder - Fairchild P/N QTLP610C-Y - Yellow Surface Mount LED Lamp - Super Bright Right Angle



• Edge card edge-lighting

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Product	Product status	Pricing*	Package type	Packing method
QTLP610C-Y.TR	Full Production	\$0.088	SMD, Right Angle	TAPE REEL

\* 1,000 piece Budgetary Pricing

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- InGaN/SiC technology for -IG and -IB
- Wide viewing angle of 120°
- Water clear optics
- Available in 0.315-inch (8 mm) width tape on 7-inch (178 mm) diameter reel; 2,000 units per reel

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#### Applications

- LCD edge-lighting
- Edge card edge-lighting

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#### Product Folder - Fairchild P/N QTLP610C-IG - Product information

Product status/pricing/packaging

Product	Product status	Pricing*	Package type	Packing method
QTLP610CIGTR	Full Production	\$0.65	SMD, Right Angle	TAPE REEL

\* 1,000 piece Budgetary Pricing

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buy products	Features		
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Applications

1.0(H) mm

• Water clear optics

2,000 units per reel

• LCD edge-lighting • Edge card edge-lighting

and -AG

• AllnGaP technology for -R, -E, -O, -Y

• InGaN/SiC technology for -IG and -IB

• Available in 0.315-inch (8 mm) width tape on 7-inch (178 mm) diameter reel;

• Wide viewing angle of 120°

Product	Product status	Pricing*	Package type	Packing method
QTLP610CIBTR	Full Production	\$0.54	SMD, Right Angle	TAPE REEL

\* 1,000 piece Budgetary Pricing

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company	<ul> <li>AllnGaP technology for -R, -E, -O, -Y and -AG</li> <li>InGaN/SiC technology for -IG and -IB</li> <li>Wide viewing angle of 120°</li> <li>Water clear optics</li> <li>Available in 0.315-inch (8 mm) width tape on 7-inch (178 mm) diameter reel;</li> </ul>		

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Applications

• LCD edge-lighting

2,000 units per reel

• Edge card edge-lighting

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Product	Product status	Pricing*	Package type	Packing method
QTLP610C-E.TR	Full Production	\$0.088	SMD, Right Angle	TAPE REEL

\* 1,000 piece Budgetary Pricing

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buy products	Features		
technical support	• Small footprint - 3.0(L) x 2.0(W) x		•

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company

#### Applications

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• LCD edge-lighting

1.0(H) mm

• Water clear optics

2,000 units per reel

and -AG

• AllnGaP technology for -R, -E, -O, -Y

• InGaN/SiC technology for -IG and -IB

• Available in 0.315-inch (8 mm) width tape on 7-inch (178 mm) diameter reel;

• Wide viewing angle of 120°

• Edge card edge-lighting

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Product	Product status	Pricing*	Package type	Packing method
QTLP610CAGTR	Full Production	\$0.115	SMD, Right Angle	TAPE REEL

\* 1,000 piece Budgetary Pricing

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