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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

0.126 (3.2)
0.110 (2.8)

0.043 (1.1)
0.035 (0.9)

FRONT

0.020 (0.50)

0.087 (2.2)
0.071 (1.8)

0.087 (2.2)
0.071 (1.8)

0.039 (1.0)

TOP

0.035 (0.9)

R0.017 (0.4)

CATHODE MARK

BACK

0.016 (0.4)

−   ◄│   +

POLARITY
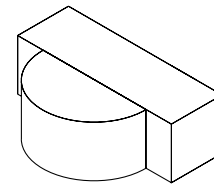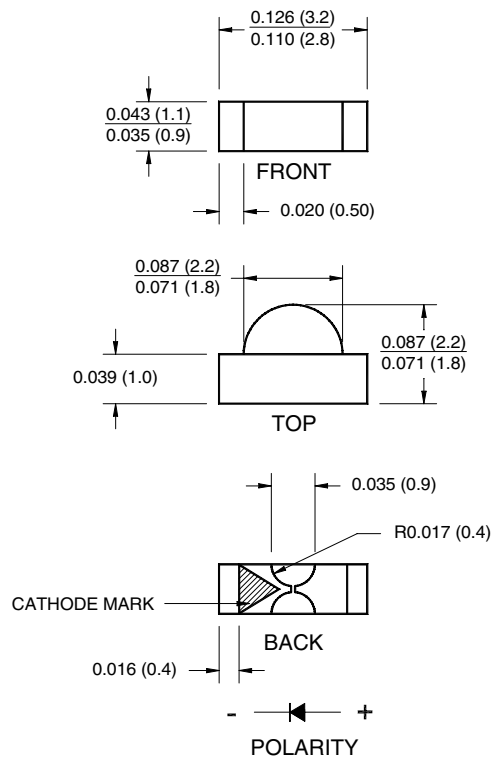
NOTE:

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
- AlInGaP 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

SURFACE MOUNT LED LAMP
SUPER BRIGHT RIGHT ANGLE

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QTLP610C-R Red   **QTLP610C-E** Orange   **QTLP610C-O** Yellow-Orange

QTLP610C-Y Yellow   **QTLP610C-AG** Yellow-Green **QTLP610C-IG** True Green

QTLP610C-IB Blue

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

SURFACE MOUNT LED LAMP
SUPER BRIGHT RIGHT ANGLE

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QTLP610C-R Red   **QTLP610C-E** Orange   **QTLP610C-O** Yellow-Orange

QTLP610C-Y Yellow   **QTLP610C-AG** Yellow-Green   **QTLP610C-IG** True Green

QTLP610C-IB Blue

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)	$\Delta\lambda$	20	18	18	15	20	I_F = 20mA
Viewing Angle (°)	$2\Theta_{1/2}$	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)	$\Delta\lambda$	25	35	I_F = 20mA
Viewing Angle (°)	$2\Theta_{1/2}$	120	120	I_F = 20mA

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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)
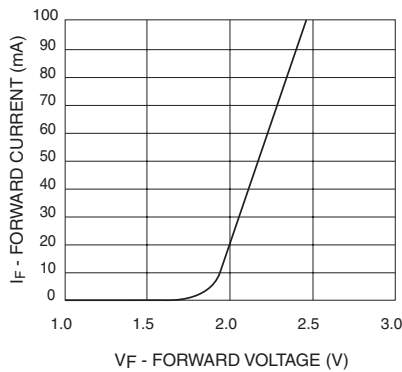
Fig. 1 Forward Current vs. Forward Voltage

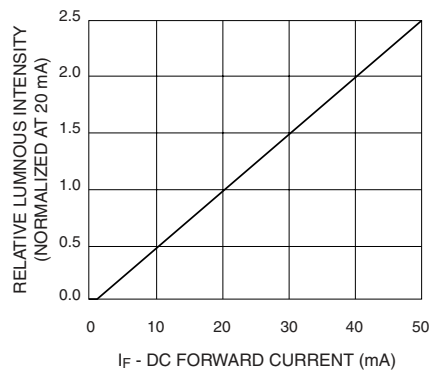**Fig. 2 Relative Luminous Intensity vs. DC Forward Current**
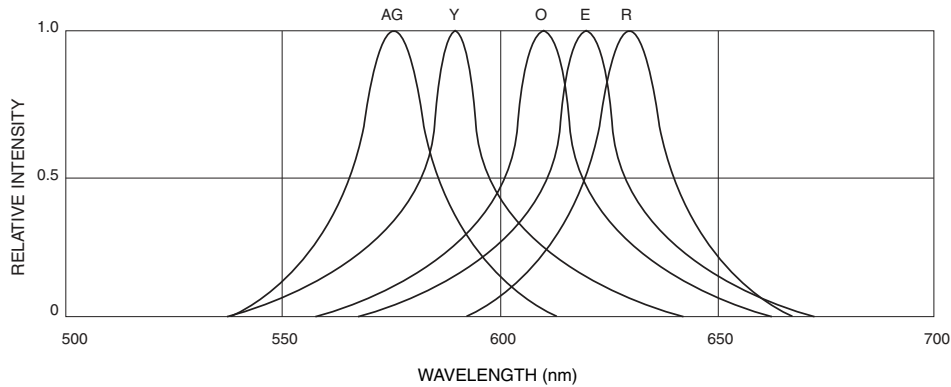
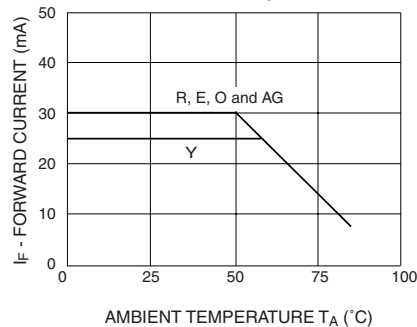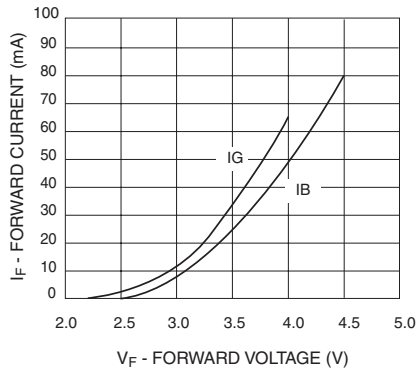**Fig. 3 Relative Intensity vs. Peak Wavelength**

Fig.4 Radiation Diagram

Fig.5 Maximum Forward Current vs. Ambient Temperature

SURFACE MOUNT LED LAMP
SUPER BRIGHT RIGHT ANGLE
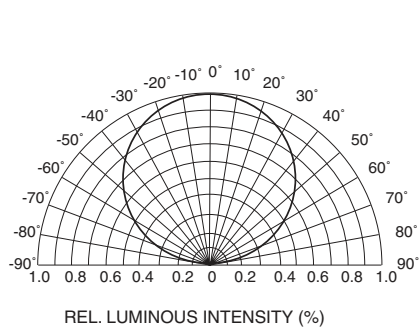
QTLP610C-R Red   **QTLP610C-E** Orange   **QTLP610C-O** Yellow-Orange

QTLP610C-Y Yellow   **QTLP610C-AG** Yellow-Green   **QTLP610C-IG** True Green

QTLP610C-IB Blue

TYPICAL PERFORMANCE CURVES (QTLP610C-IG and -IB)

Fig. 1 Forward Current vs. Forward Voltage

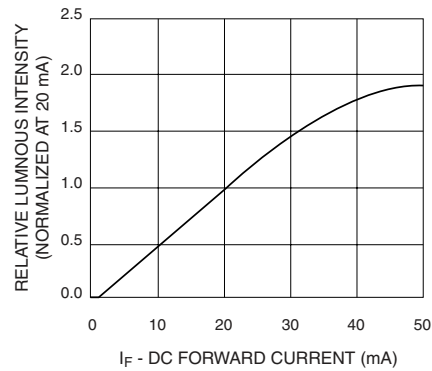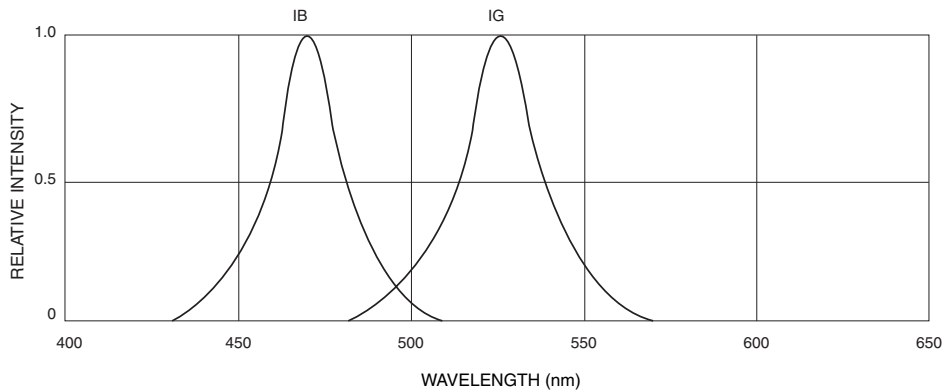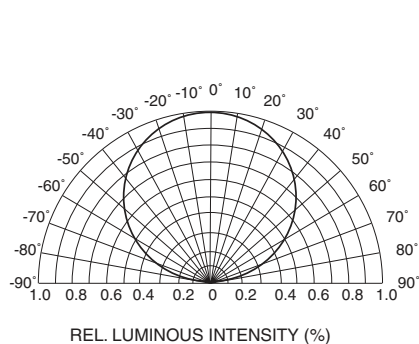**Fig. 2 Relative Luminous Intensity vs. DC Forward Current**

Fig. 3 Relative Intensity vs. Peak Wavelength

Fig.4 Radiation Diagram
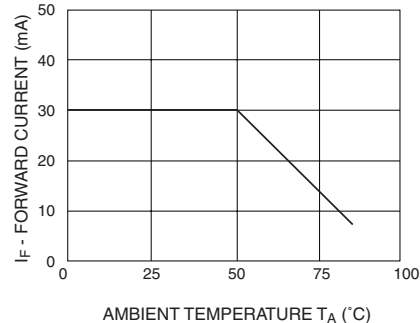

Fig.5 Maximum Forward Current vs. Ambient Temperature

SURFACE MOUNT LED LAMP
SUPER BRIGHT RIGHT ANGLE

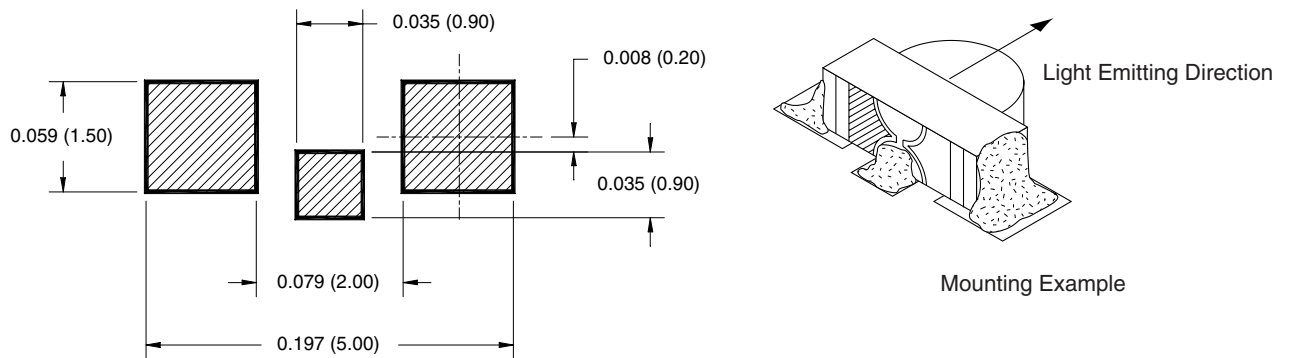**QTLP610C-R** Red   **QTLP610C-E** Orange   **QTLP610C-O** Yellow-Orange
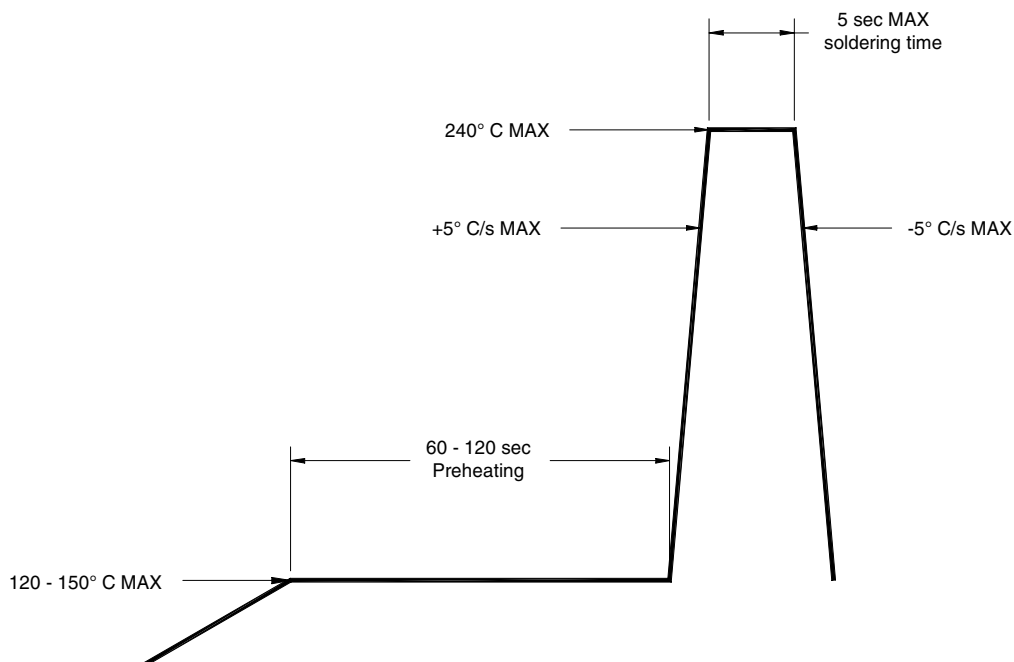
QTLP610C-Y Yellow   **QTLP610C-AG** Yellow-Green   **QTLP610C-IG** True Green

QTLP610C-IB Blue

RECOMMENDED PRINTED CIRCUIT BOARD PATTERN

0.035 (0.90)

0.008 (0.20)

0.059 (1.50)

0.035 (0.90)

0.079 (2.00)

0.197 (5.00)

Light Emitting Direction

Mounting Example

RECOMMENDED IR REFLOW SOLDERING PROFILE

5 sec MAX soldering time

240° C MAX

+5° C/s MAX

-5° C/s MAX

60 - 120 sec Preheating

120 - 150° C MAX

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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

2.5±0.5

8.4 +1.5 −0.0

11.0 +0.5 −0.0

Ø180±1

Ø62.0±0.5

2.50±0.5

Ø12.75 +0.25 −0.0

Progressive direction

1.75

2.0±0.05

4.0

Ø1.55.±05

0.23±0.1

3.5±0.05

8.0

3.20

4.0

2.06

1.32

Polarity
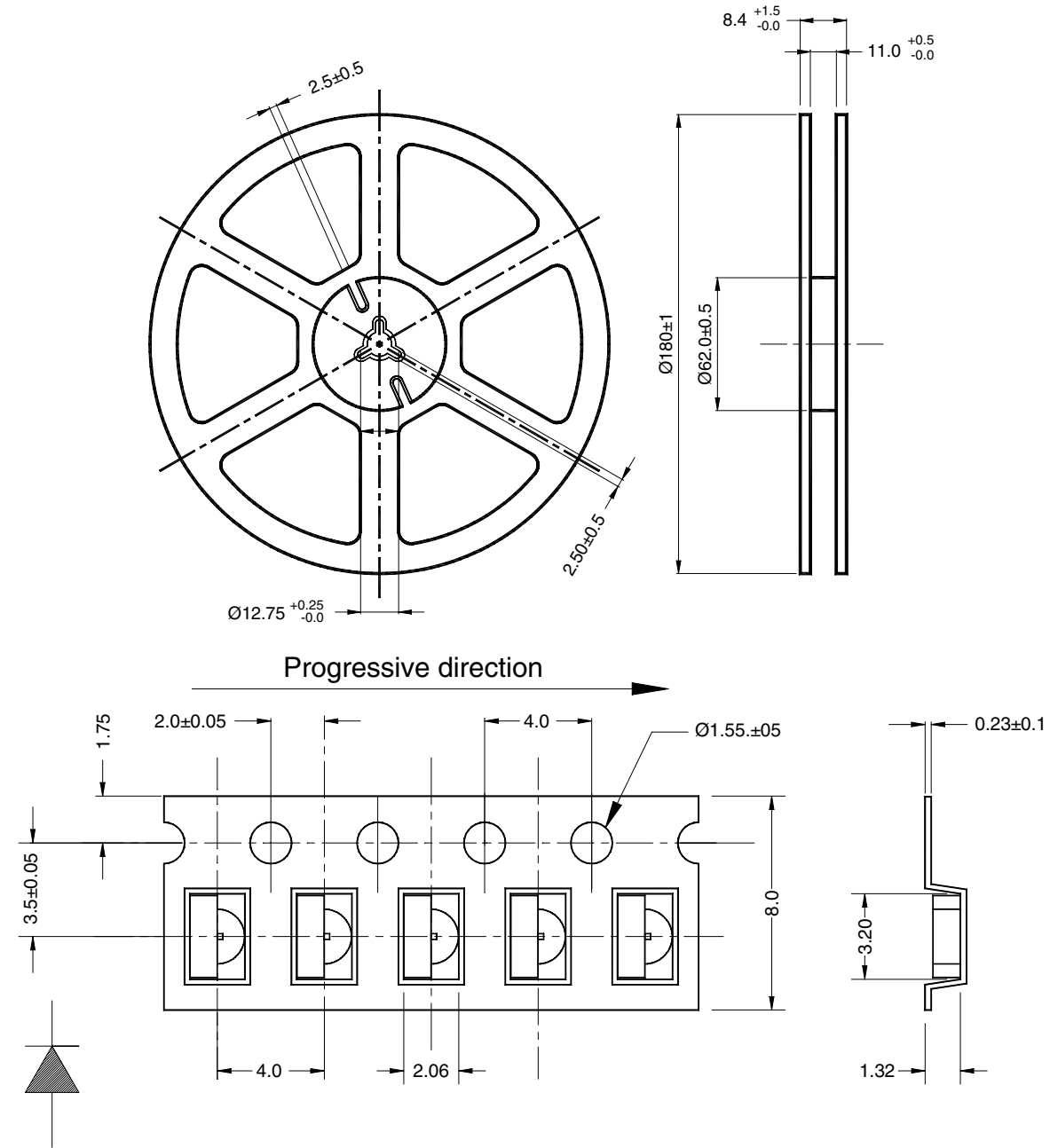
Dimensional tolerance is ± 0.1mm unless otherwise specified

Angle: ± 0.5

Unit: mm

SURFACE MOUNT LED LAMP
SUPER BRIGHT RIGHT ANGLE

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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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- Markets and applications
- New products
- Product selection and parametric search
- Cross-reference search

technical information

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QTLP610C-O
Product information

Contents
General description | Features | Applications | Product status/pricing/packaging

General 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.

back to top

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
- 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

back to top

Applications

- LCD edge-lighting
- Edge card edge-lighting

back to top

Datasheet
Download this datasheet

PDF

e-mail this datasheet

[E-

This page
Print version

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Request samples

Dotted line

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Product Change Notices (PCNs)

Dotted line

Support

Dotted line

Distributor and field sales representatives

Dotted line

Quality and reliability

Dotted line

Design tools

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

back to top

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Products groups
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Memory
Optoelectronics
Markets and applications
New products
Product selection and parametric search
Cross-reference search

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QTLP610C-R
Red Surface Mount LED Lamp - Super Bright Right Angle

Contents
General description | Features | Applications |
Product status/pricing/packaging

General 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.

back to top

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
- 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

back to top

Applications

- LCD edge-lighting
- Edge card edge-lighting

back to top

Datasheet
Download this datasheet

PDF

e-mail this datasheet

[E-

This page
Print version

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How to order products

Product Change Notices (PCNs)

Support

Distributor and field sales representatives

Quality and reliability

Design tools

Product status/pricing/packaging

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

back to top

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Support | Company | Contact us | Site index | Privacy policy

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Products groups
Analog and Mixed Signal
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Optoelectronics
Markets and applications
New products
Product selection and parametric search
Cross-reference search

technical information

buy products

technical support

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QTLP610C-Y
Yellow Surface Mount LED Lamp - Super Bright Right Angle

Contents
General description | Features | Applications |
Product status/pricing/packaging

General 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.

back to top

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
- 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

back to top

Applications

- LCD edge-lighting
- Edge card edge-lighting

back to top

Datasheet
Download this datasheet

PDF

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[E-

This page
Print version

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Request samples

How to order products

Product Change Notices (PCNs)

Support

Distributor and field sales representatives

Quality and reliability

Design tools

Product status/pricing/packaging

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

back to top

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- Memory
- Optoelectronics
- Markets and applications
- New products
- Product selection and parametric search
- Cross-reference search

technical information

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QTLP610C-IG
Product information

Contents

General description | Features | Applications | Product status/pricing/packaging

General 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.

back to top

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
- 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

back to top

Applications

- LCD edge-lighting
- Edge card edge-lighting

back to top

Datasheet
Download this datasheet

PDF

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[E-

This page
Print version

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Product Change Notices (PCNs)

Dotted line

Support

Dotted line

Distributor and field sales representatives

Dotted line

Quality and reliability

Dotted line

Design tools

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

back to top

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  - Analog and Mixed Signal
  - Discrete
  - Interface
  - Logic
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  - Non-Volatile Memory
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- Markets and applications
- New products
- Product selection and parametric search
- Cross-reference search

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QTLP610C-IB
Product information

Contents
General description | Features | Applications | Product status/pricing/packaging

General 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.

back to top

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
- 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

back to top

Applications

- LCD edge-lighting
- Edge card edge-lighting

back to top

Datasheet
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PDF

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[E-

This page
Print version

Related Links

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Product Change Notices (PCNs)

Dotted line

Support

Dotted line

Distributor and field sales representatives

Dotted line

Quality and reliability

Dotted line

Design tools

Product status/pricing/packaging

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

* 1,000 piece Budgetary Pricing

back to top

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- Markets and applications
- New products
- Product selection and parametric search
- Cross-reference search

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buy products

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QTLP610C-E
Orange Surface Mount LED Lamp - Super Bright Right Angle

Contents
General description | Features | Applications |
Product status/pricing/packaging

General 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.

back to top

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
- Wide viewing angle of 120°
- Water clear optics
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back to top

Applications

- LCD edge-lighting
- Edge card edge-lighting

back to top

Datasheet
Download this datasheet

PDF

e-mail this datasheet

[E-

This page
Print version

Related Links

Request samples

How to order products

Product Change Notices (PCNs)

Support

Distributor and field sales representatives

Quality and reliability

Design tools

Product status/pricing/packaging

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

back to top

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  - Analog and Mixed Signal
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  - Interface
  - Logic
  - Microcontrollers
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  - Optoelectronics
- Markets and applications
- New products
- Product selection and parametric search
- Cross-reference search

technical information

buy products

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QTLP610C-AG
Product information

Contents
General description | Features | Applications | Product status/pricing/packaging

General 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.

back to top

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
- 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

back to top

Applications

- LCD edge-lighting
- Edge card edge-lighting

back to top

Datasheet
Download this datasheet

PDF

e-mail this datasheet

[E-

This page
Print version

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Request samples

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Product Change Notices (PCNs)

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Support

Dotted line

Distributor and field sales representatives

Dotted line

Quality and reliability

Dotted line

Design tools

Product status/pricing/packaging

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

* 1,000 piece Budgetary Pricing

back to top

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