

QTLP660C-R Red

QTLP660C-E Orange

QTLP660C-O Yellow-Orange

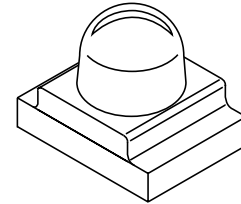
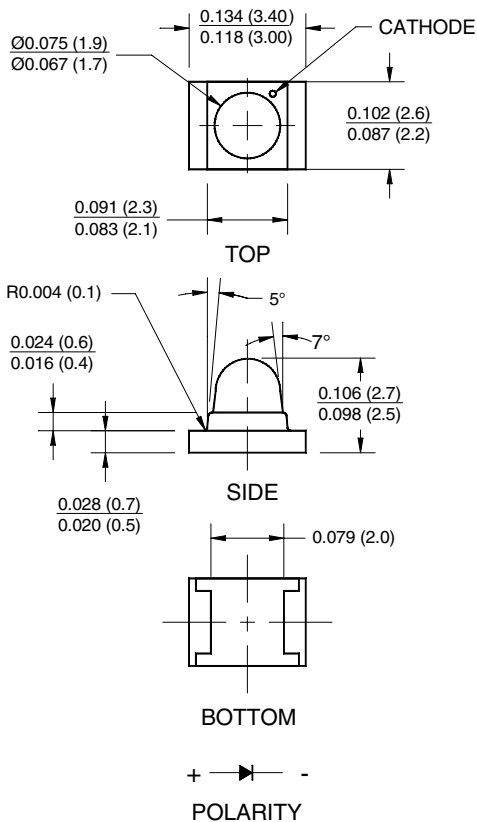
QTLP660C-Y Yellow

QTLP660C-AG Yellow-Green

QTLP660C-IG True Green

QTLP660C-IB Blue

## PACKAGE DIMENSIONS



NOTE:

Dimensions for all drawings are in inches (mm).

## APPLICATIONS

- Backlighting
- Status indication for consumer electronics and other equipment

## DESCRIPTION

These super bright surface mount chip LEDs are designed with a 1.8 mm dome lens that focuses the light output.

## FEATURES

- Small footprint - 3.2(L) X 2.4(W) X 2.6(H) mm
- AlInGaP technology for -R, -E, -O, -Y and -AG
- InGaN/SiC technology for -IG and -IB
- Narrow viewing angle of 30°
- 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 1.8 mm (Dome Lens)

QTLP660C-R Red

QTLP660C-E Orange

QTLP660C-O Yellow-Orange

QTLP660C-Y Yellow

QTLP660C-AG Yellow-Green

QTLP660C-IG True Green

QTLP660C-IB Blue

### ABSOLUTE MAXIMUM RATINGS (T<sub>A</sub> =25°C Unless otherwise specified)

Parameter	Symbol	QTLP660C					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

### ABSOLUTE MAXIMUM RATINGS (T<sub>A</sub> =25°C Unless otherwise specified)

Parameter	Symbol	QTLP660C		Units
		-IB	-IG	
Continuous Forward Current	I <sub>F</sub>	30	30	mA
Peak Forward Current (f = 1.0 KHz, Duty Factor = 1/10)	I <sub>FM</sub>	100	100	mA
Reverse Voltage	V <sub>R</sub>	5	5	V
Power Dissipation	P <sub>D</sub>	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

QTLP660C-R Red

QTLP660C-E Orange

QTLP660C-O Yellow-Orange

QTLP660C-Y Yellow

QTLP660C-AG Yellow-Green

QTLP660C-IG True Green

QTLP660C-IB Blue

ELECTRICAL / OPTICAL CHARACTERISTICS (T <sub>A</sub> =25°C)								
Part Number	Symbol	QTLP660C					Condition	
		-R	-E	-O	-Y	-AG		
Luminous Intensity (mcd)	I <sub>V</sub>	Minimum	150	150	150	150	110	I <sub>F</sub> = 20mA
		Typical	400	400	400	400	160	
Forward Voltage (V)	V <sub>F</sub>	Maximum	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)	λ <sub>P</sub>	Peak	630	620	610	590	575	I <sub>F</sub> = 20mA
		Dominant	λ <sub>D</sub>	624	615	605	589	
Spectral Line Half Width (nm)	Δλ	20	18	18	15	20	I <sub>F</sub> = 20mA	
Viewing Angle (°)	2Θ <sub>1/2</sub>	30	30	30	30	30	I <sub>F</sub> = 20mA	

ELECTRICAL / OPTICAL CHARACTERISTICS (T <sub>A</sub> =25°C)					
Part Number	Symbol	QTLP660C		Condition	
		-IB	-IG		
Luminous Intensity (mcd)	I <sub>V</sub>	Minimum	110	500	I <sub>F</sub> = 20mA
		Typical	150	900	
Forward Voltage (V)	V <sub>F</sub>	Maximum	4.0	4.0	I <sub>F</sub> = 20mA
		Typical	3.5	3.5	
Wavelength (nm)	λ <sub>P</sub>	Peak	465	520	I <sub>F</sub> = 20mA
		Dominant	λ <sub>D</sub>	470	
Spectral Line Half Width (nm)	Δλ	25	35	I <sub>F</sub> = 20mA	
Viewing Angle (°)	2Θ <sub>1/2</sub>	30	30	I <sub>F</sub> = 20mA	

QTLP660C-R Red

QTLP660C-E Orange

QTLP660C-O Yellow-Orange

QTLP660C-Y Yellow

QTLP660C-AG Yellow-Green

QTLP660C-IG True Green

QTLP660C-IB Blue

## TYPICAL PERFORMANCE CURVES (QTLP660C-R, -E, -O, -Y and -AG)

Fig. 1 Forward Current vs. Forward Voltage

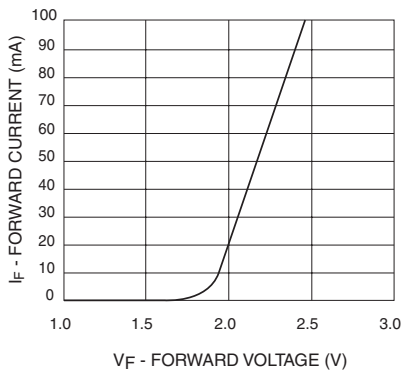


Fig. 2 Relative Luminous Intensity vs. DC Forward Current

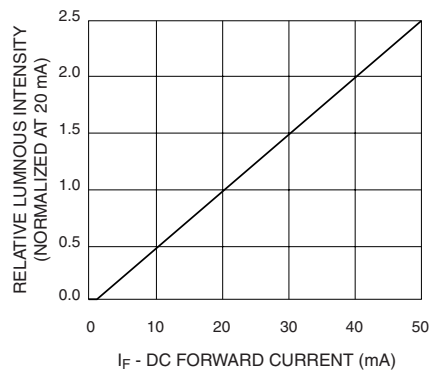


Fig. 3 Relative Intensity vs. Peak Wavelength

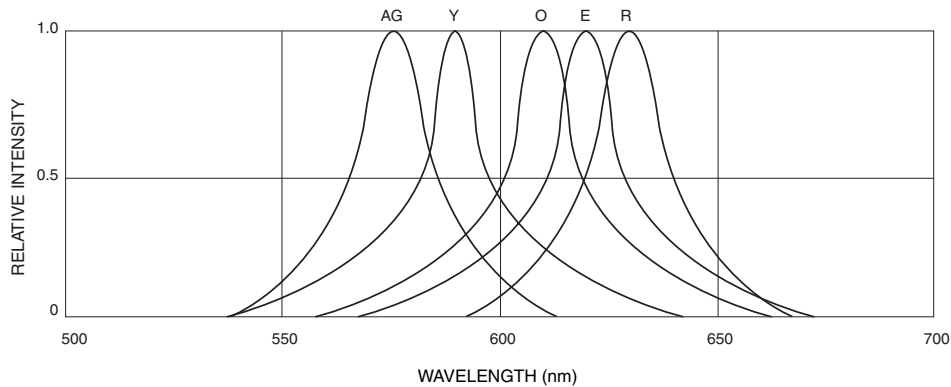


Fig. 4 Radiation Diagram

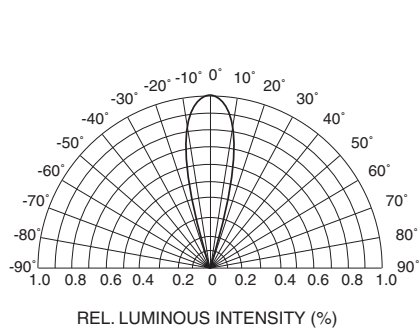
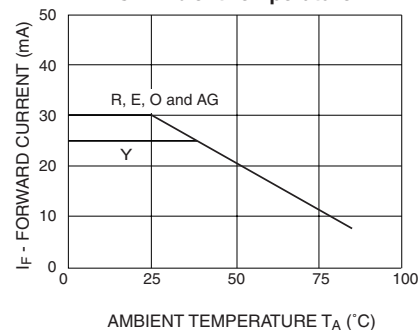


Fig. 5 Maximum Forward Current vs. Ambient Temperature



QTLP660C-R Red

QTLP660C-E Orange

QTLP660C-O Yellow-Orange

QTLP660C-Y Yellow

QTLP660C-AG Yellow-Green

QTLP660C-IG True Green

QTLP660C-IB Blue

## TYPICAL PERFORMANCE CURVES (QTLP660C-IG and IB)

Fig. 1 Forward Current vs. Forward Voltage

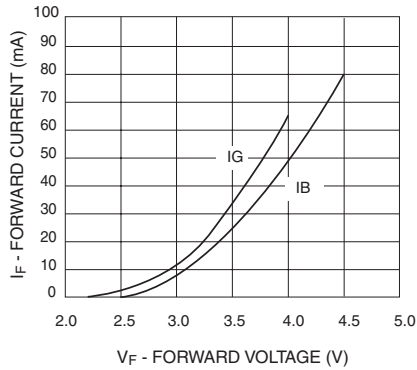


Fig. 2 Relative Luminous Intensity vs. DC Forward Current

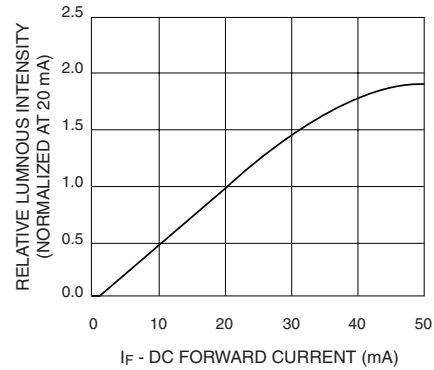


Fig. 3 Relative Intensity vs. Peak Wavelength

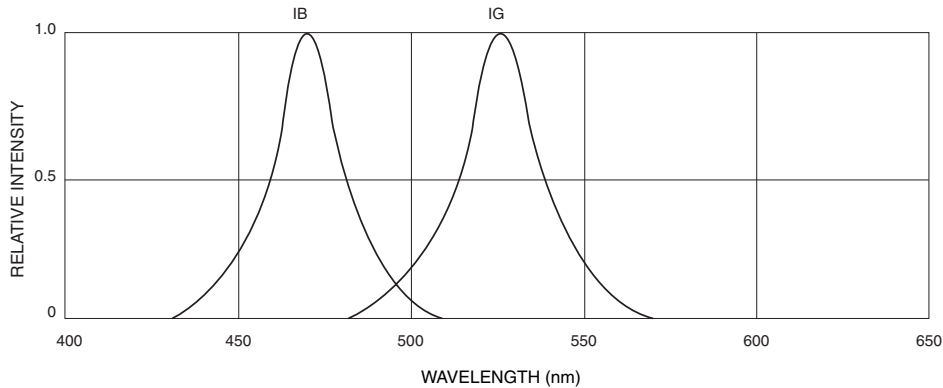


Fig.4 Radiation Diagram

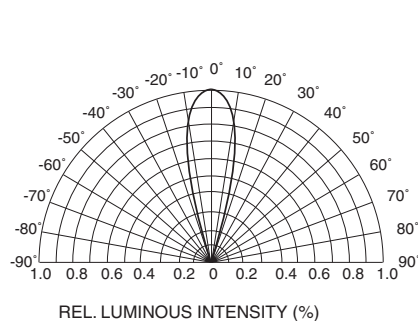
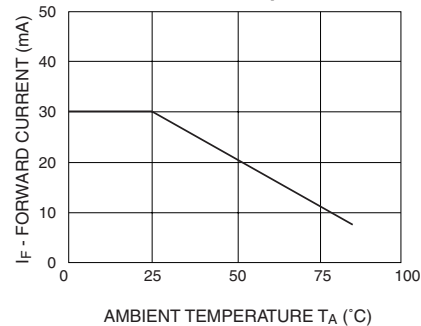


Fig.5 Maximum Forward Current vs. Ambient Temperature



# SURFACE MOUNT LED LAMP SUPER BRIGHT 1.8 mm (Dome Lens)

QTLP660C-R Red

QTLP660C-E Orange

QTLP660C-O Yellow-Orange

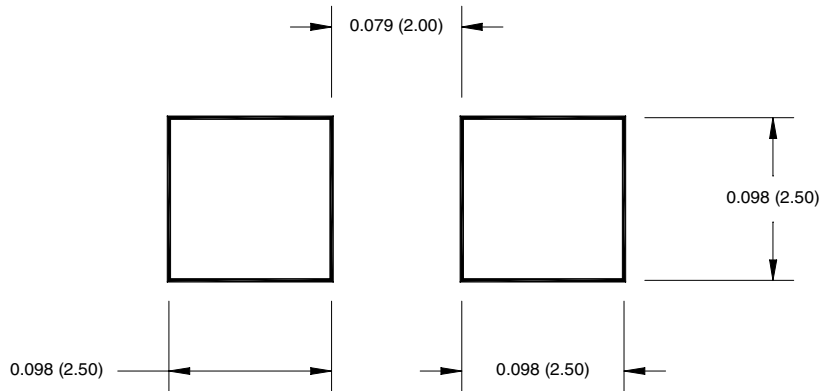
QTLP660C-Y Yellow

QTLP660C-AG Yellow-Green

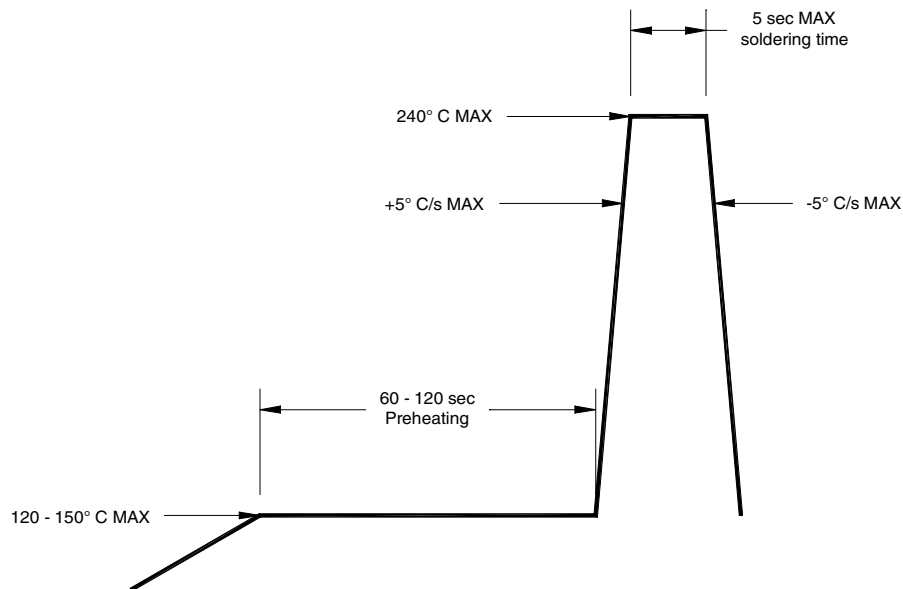
QTLP660C-IG True Green

QTLP660C-IB Blue

## RECOMMENDED PRINTED CIRCUIT BOARD PATTERN



## RECOMMENDED IR REFLOW SOLDERING PROFILE



QTLP660C-R Red

QTLP660C-E Orange

QTLP660C-O Yellow-Orange

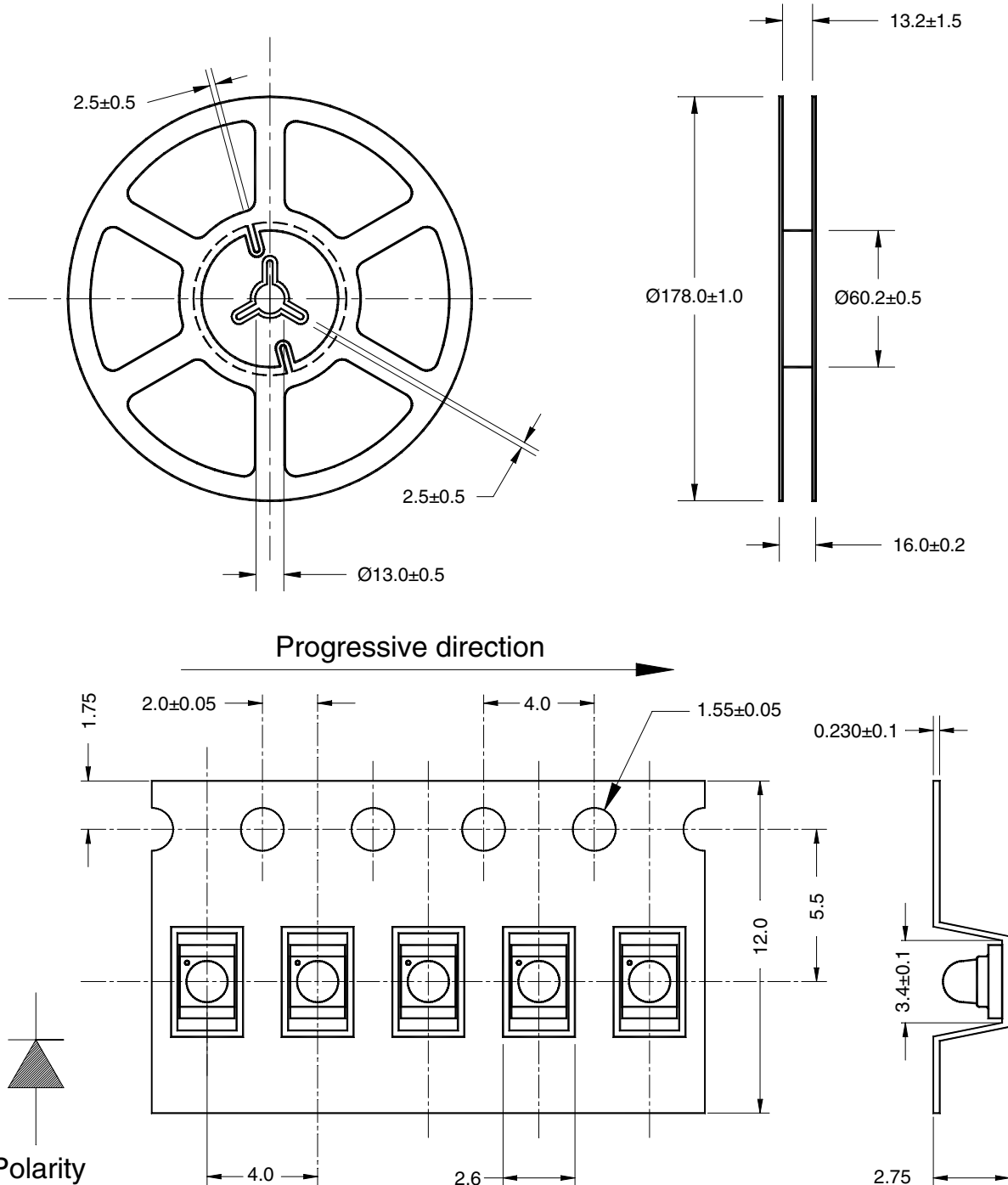
QTLP660C-Y Yellow

QTLP660C-AG Yellow-Green

QTLP660C-IG True Green

QTLP660C-IB Blue

**TAPE AND REEL DIMENSIONS**



---

**QTLP660C-R** Red

**QTLP660C-E** Orange

**QTLP660C-O** Yellow-Orange

**QTLP660C-Y** Yellow

**QTLP660C-AG** Yellow-Green

**QTLP660C-IG** True Green

**QTLP660C-IB** Blue

---

#### **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.



Fairchild Semiconductor

SEARCH | [Parametric](#) | [Cross Reference](#)[space](#)[Product Folders and](#)[Applies](#)[find products](#)[Home >> Find products >>](#)[Products groups](#)[Analog and Mixed](#)[Signal](#)[Discrete](#)[Interface](#)[Logic](#)[Microcontrollers](#)[Non-Volatile](#)[Memory](#)[Optoelectronics](#)[Markets and](#)[applications](#)[New products](#)[Product selection and](#)[parametric search](#)[Cross-reference](#)[search](#)

QTLP660C-O

Product information

Contents

[General description](#) | [Features](#) | [Applications](#) |[Product status/pricing/packaging](#)

General description

These super bright surface mount chip LEDs are designed with a 1.8 mm dome lens that focuses the light output.

[back to top](#)

Features

- Small footprint - 3.2(L) x 2.4(W) x 2.6(H) mm
- AllInGaP technology for -R, -E, -O, -Y and -AG
- InGaN/SiC technology for -IG and -IB
- Narrow viewing angle of 30°
- Water clear optics
- Moisture-proof packaging
- 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

- Backlighting
- Status indication for consumer electronics and other equipment

[back to top](#)

Product status/pricing/packaging

[Related Links](#)[Request samples](#)[Dotted line](#)[How to order products](#)[Dotted line](#)[Product Change Notices](#)[\(PCNs\)](#)[Dotted line](#)[Support](#)[Dotted line](#)[Distributor and field sales](#)[representatives](#)[Dotted line](#)[Quality and reliability](#)[Dotted line](#)[Design tools](#)

Datasheet

[Download this](#)[datasheet](#)[PDF](#)[e-mail this datasheet](#)[\[E-](#)

This page

[Print version](#)

<b>Product</b>	<b>Product status</b>	<b>Pricing*</b>	<b>Package type</b>	<b>Packing method</b>
QTLP660COTR	Full Production	\$0.10	SMD	TAPE REEL

\* 1,000 piece Budgetary Pricing

[back to top](#)

[Home](#) | [Find products](#) | [Technical information](#) | [Buy products](#) |  
[Support](#) | [Company](#) | [Contact us](#) | [Site index](#) | [Privacy policy](#)

---

[© Copyright 2002 Fairchild Semiconductor](#)

---

Fairchild Semiconductor

SEARCH | Parametric | Cross Reference

space

Product Folders and

Applies

find products

Home >> Find products >>

Products groups

Analog and Mixed

Signal

Discrete

Interface

Logic

Microcontrollers

Non-Volatile

Memory

Optoelectronics

Markets and

applications

New products

Product selection and

parametric search

Cross-reference

search

QTLP660C-R

Red Surface Mount LED Lamp Super Bright

1.8 mm (Dome Lens)

Contents

[General description](#) | [Features](#) | [Applications](#) |

[Product status/pricing/packaging](#)

Datasheet

[Download this](#)

[datasheet](#)

PDF

[e-mail this datasheet](#)

[E-

This page

[Print version](#)

Related Links

[Request samples](#)

[Dotted line](#)

[How to order products](#)

[Dotted line](#)

[Product Change Notices](#)

[\(PCNs\)](#)

[Dotted line](#)

[Support](#)

[Dotted line](#)

[Distributor and field sales](#)

[representatives](#)

[Dotted line](#)

[Quality and reliability](#)

[Dotted line](#)

[Design tools](#)

General description

These super bright surface mount chip LEDs are designed with a 1.8 mm dome lens that focuses the light output.

[back to top](#)

Features

- Small footprint - 3.2(L) x 2.4(W) x 2.6(H) mm
- AllInGaP technoogy for -R, -E, -O, -Y and -AG
- InGaN/SiC technology for -IG and -IB
- Narrow viewing angle of 30°
- Water clear optics
- Moisture-proof packaging
- 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

- Backlighting
- Status indication for consumer electronics and other equipment

[back to top](#)

technical information

buy products

technical support

my Fairchild

company

Product status/pricing/packaging

<b>Product</b>	<b>Product status</b>	<b>Pricing*</b>	<b>Package type</b>	<b>Packing method</b>
QTLP660CRTR	Full Production	\$0.10	SMD	TAPE REEL

\* 1,000 piece Budgetary Pricing

[back to top](#)

[Home](#) | [Find products](#) | [Technical information](#) | [Buy products](#) | [Support](#) | [Company](#) | [Contact us](#) | [Site index](#) | [Privacy policy](#)

[© Copyright 2002 Fairchild Semiconductor](#)

Fairchild Semiconductor

SEARCH | [Parametric](#) | [Cross Reference](#)[space](#)[Product Folders and](#)[Applies](#)[find products](#)[Home >> Find products >>](#)[Products groups](#)[Analog and Mixed](#)[Signal](#)[Discrete](#)[Interface](#)[Logic](#)[Microcontrollers](#)[Non-Volatile](#)[Memory](#)[Optoelectronics](#)[Markets and](#)[applications](#)[New products](#)[Product selection and](#)[parametric search](#)[Cross-reference](#)[search](#)

## QTLP660C-Y

Product information

Contents

[General description](#) | [Features](#) | [Applications](#) | [Product status/pricing/packaging](#)

## General description

These super bright surface mount chip LEDs are designed with a 1.8 mm dome lens that focuses the light output.

[back to top](#)

## Features

- Small footprint - 3.2(L) x 2.4(W) x 2.6(H) mm
- AllInGaP technology for -R, -E, -O, -Y and -AG
- InGaN/SiC technology for -IG and -IB
- Narrow viewing angle of 30°
- Water clear optics
- Moisture-proof packaging
- 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

- Backlighting
- Status indication for consumer electronics and other equipment

[back to top](#)[Product status/pricing/packaging](#)

## Related Links

[Request samples](#)[Dotted line](#)[How to order products](#)[Dotted line](#)[Product Change Notices](#)[\(PCNs\)](#)[Dotted line](#)[Support](#)[Dotted line](#)[Distributor and field sales](#)[representatives](#)[Dotted line](#)[Quality and reliability](#)[Dotted line](#)[Design tools](#)

Datasheet

[Download this datasheet](#)[PDF](#)[e-mail this datasheet](#)[\[E-](#)

This page

[Print version](#)

<b>Product</b>	<b>Product status</b>	<b>Pricing*</b>	<b>Package type</b>	<b>Packing method</b>
QTLP660CYTR	Full Production	\$0.10	SMD	TAPE REEL

\* 1,000 piece Budgetary Pricing

[back to top](#)

[Home](#) | [Find products](#) | [Technical information](#) | [Buy products](#) | [Support](#) | [Company](#) | [Contact us](#) | [Site index](#) | [Privacy policy](#)

© Copyright 2002 Fairchild Semiconductor

Products groups

Analog and Mixed

Signal

Discrete

Interface

Logic

Microcontrollers

Non-Volatile

Memory

Optoelectronics

Markets and

applications

New products

Product selection and

parametric search

Cross-reference

search

QTLP660C-IG

Product information

Contents

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

General description

These super bright surface mount chip LEDs are designed with a 1.8 mm dome lens that focuses the light output.

back to top

Features

- Small footprint - 3.2(L) x 2.4(W) x 2.6(H) mm
- AllInGaP technoogy for -R, -E, -O, -Y and -AG
- InGaN/SiC technology for -IG and -IB
- Narrow viewing angle of 30°
- Water clear optics
- Moisture-proof packaging
- 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

- Backlighting
- Status indication for consumer electronics and other equipment

back to top

Product status/pricing/packaging

Related Links

Request samples

Dotted line  
How to order products

Dotted line  
Product Change Notices

(PCNs)

Dotted line  
Support

Dotted line  
Distributor and field sales representatives

Dotted line  
Quality and reliability

Dotted line  
Design tools

Datasheet

Download this datasheet

PDF

e-mail this datasheet

[E-

This page

Print version

<b>Product</b>	<b>Product status</b>	<b>Pricing*</b>	<b>Package type</b>	<b>Packing method</b>
QTLP660CIGTR	Full Production	\$0.79	SMD	TAPE REEL

\* 1,000 piece Budgetary Pricing

[back to top](#)

[Home](#) | [Find products](#) | [Technical information](#) | [Buy products](#) | [Support](#) | [Company](#) | [Contact us](#) | [Site index](#) | [Privacy policy](#)

© Copyright 2002 Fairchild Semiconductor



Products groups

Analog and Mixed

Signal

Discrete

Interface

Logic

Microcontrollers

Non-Volatile

Memory

Optoelectronics

Markets and

applications

New products

Product selection and

parametric search

Cross-reference

search

QTLP660C-IB

Product information

Contents

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

General description

These super bright surface mount chip LEDs are designed with a 1.8 mm dome lens that focuses the light output.

back to top

Features

- Small footprint - 3.2(L) x 2.4(W) x 2.6(H) mm
- AllInGaP technoogy for -R, -E, -O, -Y and -AG
- InGaN/SiC technology for -IG and -IB
- Narrow viewing angle of 30°
- Water clear optics
- Moisture-proof packaging
- 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

- Backlighting
- Status indication for consumer electronics and other equipment

back to top

Product status/pricing/packaging

Related Links

Request samples

Dotted line  
How to order products

Dotted line  
Product Change Notices

(PCNs)

Dotted line  
Support

Dotted line  
Distributor and field sales representatives

Dotted line  
Quality and reliability

Dotted line  
Design tools

Datasheet

Download this datasheet

PDF

e-mail this datasheet

[E-

This page

Print version

<b>Product</b>	<b>Product status</b>	<b>Pricing*</b>	<b>Package type</b>	<b>Packing method</b>
QTLP660CIBTR	Full Production	\$0.67	SMD	TAPE REEL

\* 1,000 piece Budgetary Pricing

[back to top](#)

[Home](#) | [Find products](#) | [Technical information](#) | [Buy products](#) |  
[Support](#) | [Company](#) | [Contact us](#) | [Site index](#) | [Privacy policy](#)

---

[© Copyright 2002 Fairchild Semiconductor](#)

---

Products groups

Analog and Mixed

Signal

Discrete

Interface

Logic

Microcontrollers

Non-Volatile

Memory

Optoelectronics

Markets and applications

New products

Product selection and parametric search

Cross-reference search

QTLP660C-E

Product information

Contents

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

General description

These super bright surface mount chip LEDs are designed with a 1.8 mm dome lens that focuses the light output.

back to top

Features

- Small footprint - 3.2(L) x 2.4(W) x 2.6(H) mm
- AllInGaP technoogy for -R, -E, -O, -Y and -AG
- InGaN/SiC technology for -IG and -IB
- Narrow viewing angle of 30°
- Water clear optics
- Moisture-proof packaging
- 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

- Backlighting
- Status indication for consumer electronics and other equipment

back to top

Product status/pricing/packaging

Related Links

Request samples

Dotted line  
How to order products

Dotted line  
Product Change Notices

(PCNs)

Dotted line  
Support

Dotted line  
Distributor and field sales representatives

Dotted line  
Quality and reliability

Dotted line  
Design tools

Datasheet

Download this datasheet

PDF

e-mail this datasheet

[E-

This page

Print version

<b>Product</b>	<b>Product status</b>	<b>Pricing*</b>	<b>Package type</b>	<b>Packing method</b>
QTLP660CETR	Full Production	\$0.10	SMD	TAPE REEL

\* 1,000 piece Budgetary Pricing

[back to top](#)

[Home](#) | [Find products](#) | [Technical information](#) | [Buy products](#) |  
[Support](#) | [Company](#) | [Contact us](#) | [Site index](#) | [Privacy policy](#)

© Copyright 2002 Fairchild Semiconductor

Products groups

Analog and Mixed

Signal

Discrete

Interface

Logic

Microcontrollers

Non-Volatile

Memory

Optoelectronics

Markets and

applications

New products

Product selection and

parametric search

Cross-reference

search

QTLP660C-AG

Product information

Contents

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

General description

These super bright surface mount chip LEDs are designed with a 1.8 mm dome lens that focuses the light output.

back to top

Features

- Small footprint - 3.2(L) x 2.4(W) x 2.6(H) mm
- AllInGaP technology for -R, -E, -O, -Y and -AG
- InGaN/SiC technology for -IG and -IB
- Narrow viewing angle of 30°
- Water clear optics
- Moisture-proof packaging
- 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

- Backlighting
- Status indication for consumer electronics and other equipment

back to top

Product status/pricing/packaging

Related Links

Request samples

Dotted line  
How to order products

Dotted line  
Product Change Notices

(PCNs)

Dotted line  
Support

Dotted line  
Distributor and field sales representatives

Dotted line  
Quality and reliability

Dotted line  
Design tools

Datasheet

Download this datasheet

PDF

e-mail this datasheet

[E-

This page

Print version

<b>Product</b>	<b>Product status</b>	<b>Pricing*</b>	<b>Package type</b>	<b>Packing method</b>
QTLP660CAGTR	Full Production	\$0.114	SMD	TAPE REEL

\* 1,000 piece Budgetary Pricing

[back to top](#)

[Home](#) | [Find products](#) | [Technical information](#) | [Buy products](#) | [Support](#) | [Company](#) | [Contact us](#) | [Site index](#) | [Privacy policy](#)

© Copyright 2002 Fairchild Semiconductor