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SEMICONDUCTOR®

SURFACE MOUNT LED LAMP
SUPER BRIGHT 0603 (0.8 mm Height)

QTLP600C-R Red   **QTLP600C-E** Orange   **QTLP600C-O** Yellow-Orange

QTLP600C-Y Yellow   **QTLP600C-AG** Yellow-Green   **QTLP600C-IG** True Green

QTLP600C-IB Blue

PACKAGE DIMENSIONS

0.071 (1.8)
0.055 (1.4)

0.035 (0.9)
0.028 (0.7)

TOP

0.047 (1.2)

0.031 (0.8)

0.012 (0.3)

SIDE

0.039 (1.0)

CATHODE

BOTTOM

+ →|← -

POLARITY
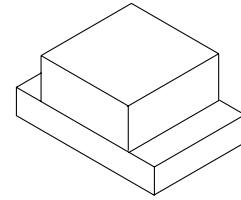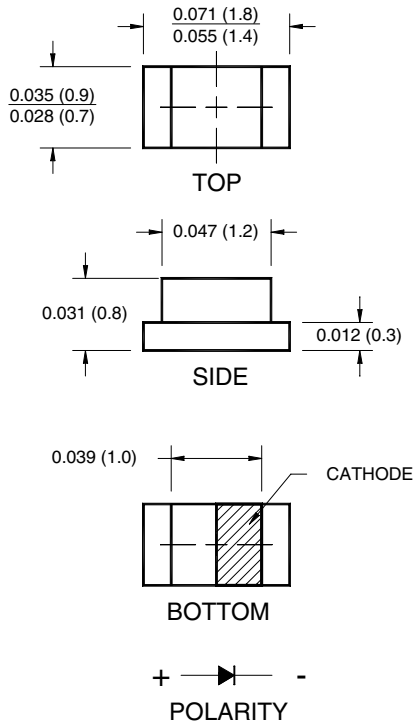
NOTE:

Dimensions for all drawings are in inches (mm).

APPLICATIONS

- Keypad backlighting
- Push-button backlighting
- LCD backlighting

DESCRIPTION

These surface mount chip LEDs are designed to fit industry standard footprint. Small size, low profile and wide viewing angle make these LEDs ideal choices for backlighting applications and panel illumination.

FEATURES

- Small footprint - 1.6(L) X 0.8(W) X 0.8(H) mm
- AllnGaP technology for -R, -E, -O, -Y and -AG
- InGaN/SiC technology for -IG and -IB
- 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

QTLP600C-R Red   **QTLP600C-E** Orange   **QTLP600C-O** Yellow-Orange

QTLP600C-Y Yellow   **QTLP600C-AG** Yellow-Green   **QTLP600C-IG** True Green

QTLP600C-IB Blue

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

Parameter	Symbol	QTLP600C					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

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

Parameter	Symbol	QTLP600C		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	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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SURFACE MOUNT LED LAMP
SUPER BRIGHT 0603 (0.8 mm Height)

QTLP600C-R Red   **QTLP600C-E** Orange   **QTLP600C-O** Yellow-Orange

QTLP600C-Y Yellow   **QTLP600C-AG** Yellow-Green   **QTLP600C-IG** True Green

QTLP600C-IB Blue

ELECTRICAL / OPTICAL CHARACTERISTICS (T_A =25°C)

Part Number	Symbol	QTLP600C					Condition
		-R	-E	-O	-Y	-AG	
Luminous Intensity (mcd)	I_V						I_F = 20mA
Minimum		15	15	15	15	10	
Typical		35	35	35	35	15	
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 (°)	$2\Theta_{1/2}$	100	100	100	100	100	I_F = 20mA

ELECTRICAL / OPTICAL CHARACTERISTICS (T_A =25°C)

Part Number	Symbol	QTLP600C		Condition
		-IB	-IG	
Luminous Intensity (mcd)	I_V			I_F = 20mA
Minimum		15	70	
Typical		25	110	
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 (°)	$2\Theta_{1/2}$	100	100	I_F = 20mA

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SURFACE MOUNT LED LAMP
SUPER BRIGHT 0603 (0.8 mm Height)

QTLP600C-R Red   **QTLP600C-E** Orange   **QTLP600C-O** Yellow-Orange

QTLP600C-Y Yellow   **QTLP600C-AG** Yellow-Green   **QTLP600C-IG** True Green

QTLP600C-IB Blue

TYPICAL PERFORMANCE CURVES (QTLP600C-R, -E, -O, -Y and -AG)

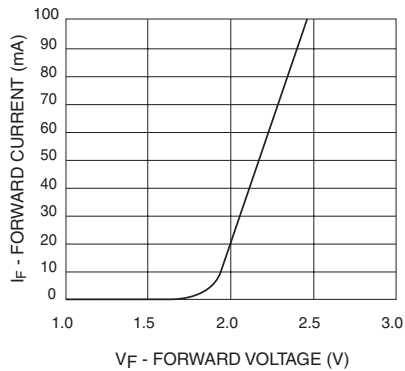**Fig. 1 Forward Current vs. Forward Voltage**
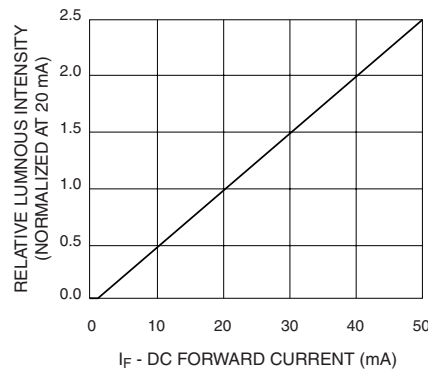

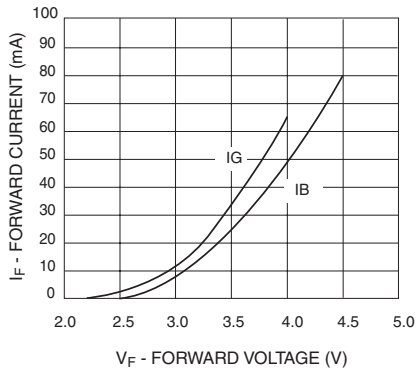**Fig. 2 Relative Luminous Intensity vs. DC Forward Current**

Fig. 3 Relative Intensity vs. Peak Wavelength

Fig.4 Radiation Diagram

Fig.5 Maximum Forward Current vs. Ambient Temperature

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SURFACE MOUNT LED LAMP
SUPER BRIGHT 0603 (0.8 mm Height)
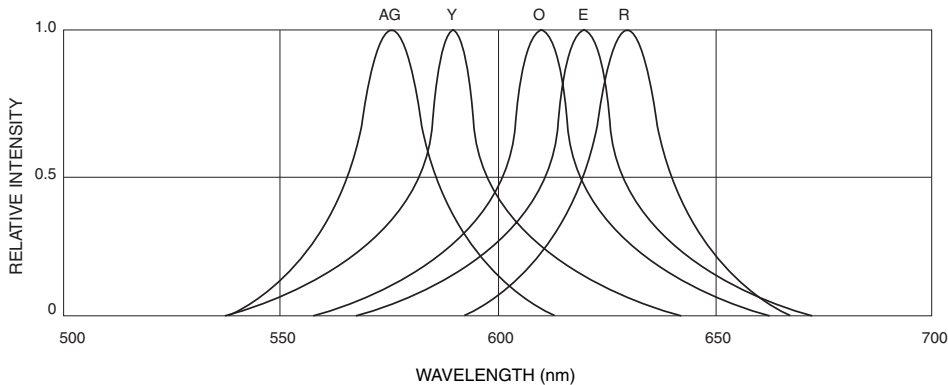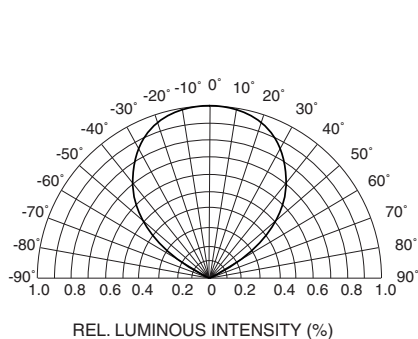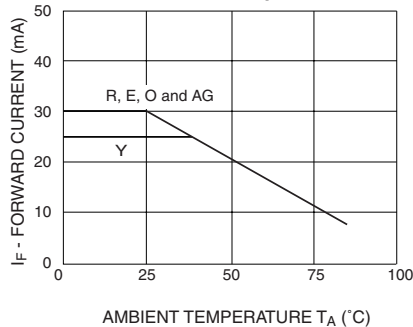
QTLP600C-R Red   **QTLP600C-E** Orange   **QTLP600C-O** Yellow-Orange

QTLP600C-Y Yellow   **QTLP600C-AG** Yellow-Green   **QTLP600C-IG** True Green

QTLP600C-IB Blue

TYPICAL PERFORMANCE CURVES (QTLP600C-IG and IB)

Fig. 1 Forward Current vs. Forward Voltage

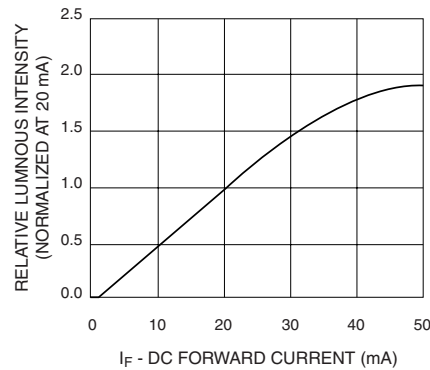
Fig. 2 Relative Luminous Intensity vs. DC Forward Current
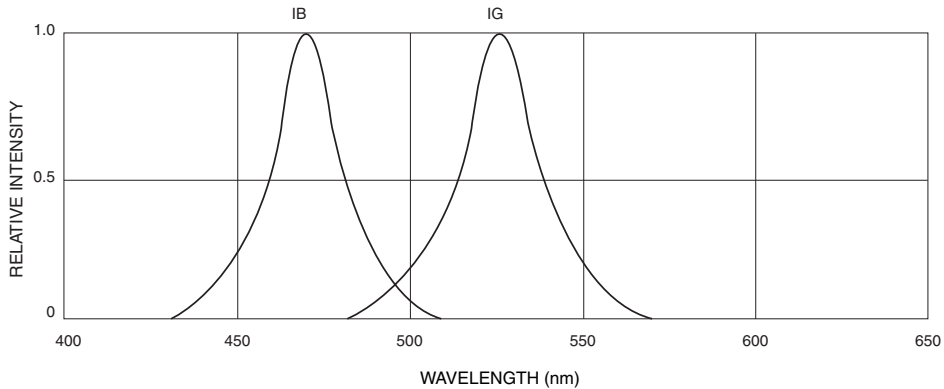

Fig. 3 Relative Intensity vs. Peak Wavelength

Fig.4 Radiation Diagram

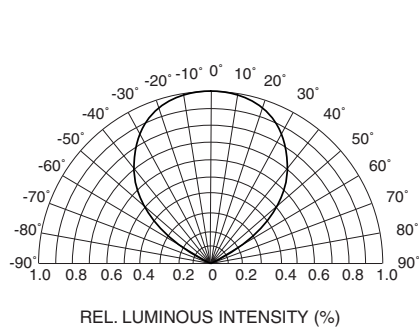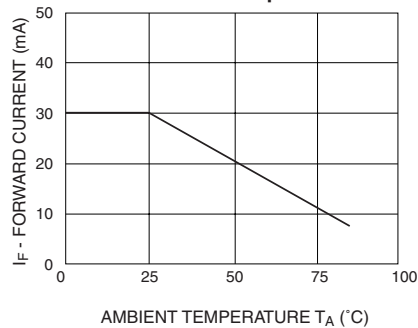Fig.5 Maximum Forward Current vs. Ambient Temperature

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SURFACE MOUNT LED LAMP
SUPER BRIGHT 0603 (0.8 mm Height)

QTLP600C-R Red   **QTLP600C-E** Orange   **QTLP600C-O** Yellow-Orange

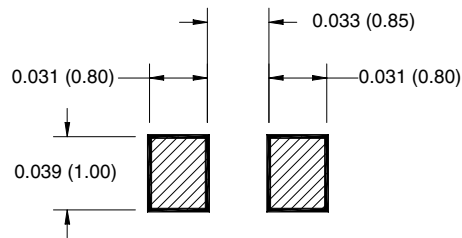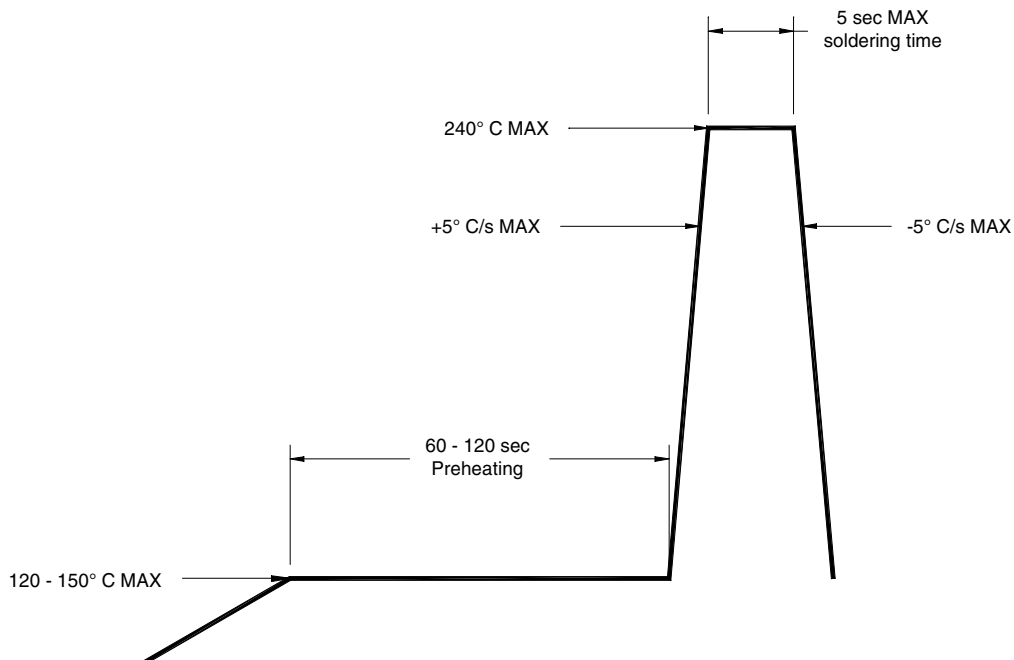**QTLP600C-Y** Yellow   **QTLP600C-AG** Yellow-Green   **QTLP600C-IG** True Green

QTLP600C-IB Blue

RECOMMENDED PRINTED CIRCUIT BOARD PATTERN

0.033 (0.85)

0.031 (0.80)   0.031 (0.80)

0.039 (1.00)

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

QTLP600C-R Red   **QTLP600C-E** Orange   **QTLP600C-O** Yellow-Orange

QTLP600C-Y Yellow   **QTLP600C-AG** Yellow-Green   **QTLP600C-IG** True Green

QTLP600C-IB Blue

TAPE AND REEL DIMENSIONS

Progressive direction

Polarity
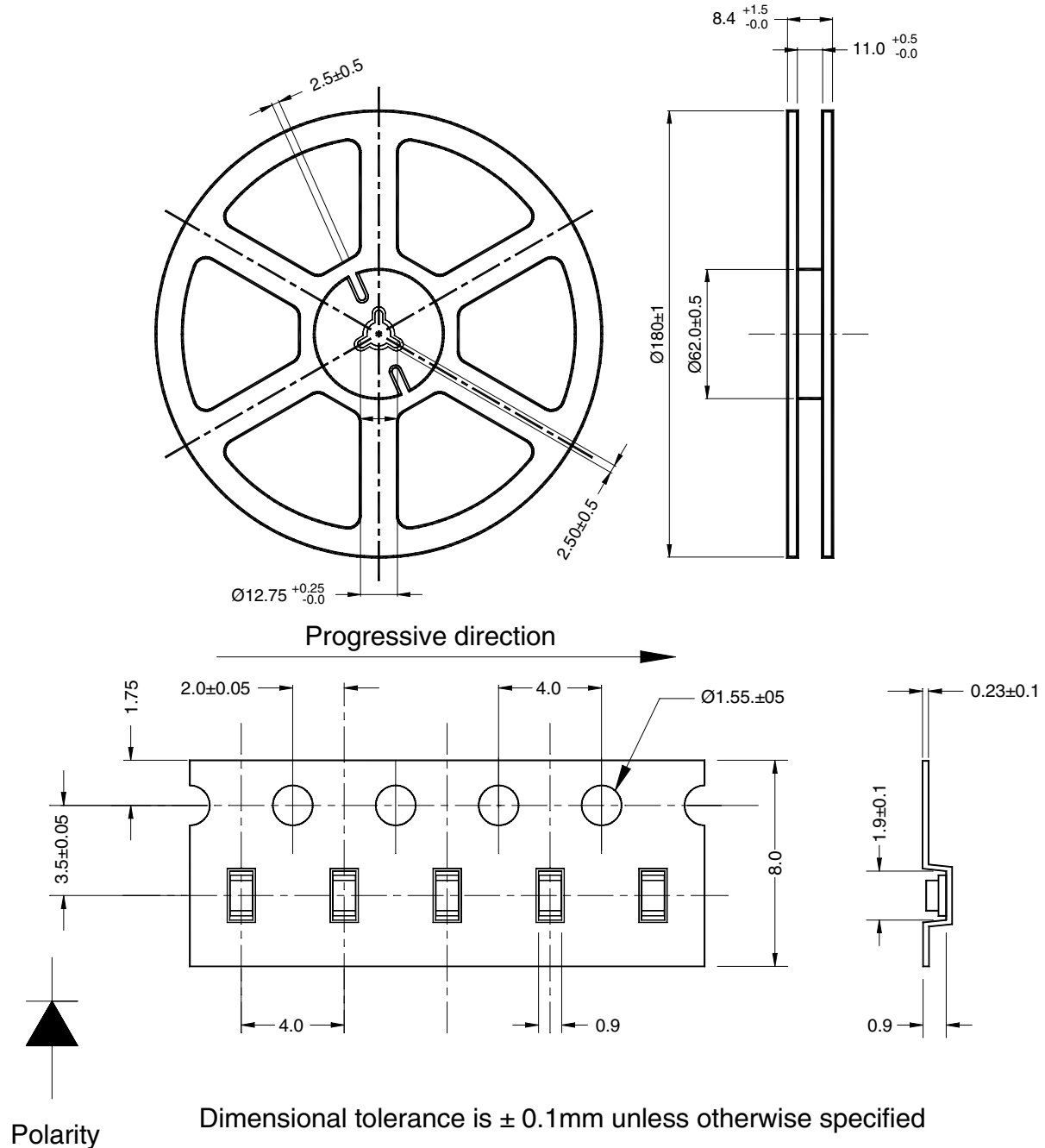
Dimensional tolerance is ± 0.1mm unless otherwise specified

Angle: ± 0.5

Unit: mm

QTLP600C-R Red

QTLP600C-E Orange

QTLP600C-O Yellow-Orange

QTLP600C-Y Yellow

QTLP600C-AG Yellow-Green

QTLP600C-IG True Green

QTLP600C-IB Blue

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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.

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QTLP600C-AG
Yellow-Green Surface Mount LED Lamp - Super Bright 0603 (0.8 mm Height)

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General description

These surface mount chip LEDs are designed to fit the industry standard footprint. Small size, low profile and wide viewing angle make these LEDs ideal choices for backlighting applications and panel illumination.

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Features

- Small footprint - 1.6(L) x 0.8(W) x 0.8(H) mm
- AllnGaP technology for -R, -E, -O, -Y and -AG
- InGaN/SiC technology for -IG and -IB
- Wide viewing angle of 100°
- 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

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Applications

- Keypad backlighting
- Push-button backlighting
- LCD backlighting

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Product status/pricing/packaging

Product	Product status	Pricing*	Inventory check & ordering	Package type	Packing method
QTLP600CAGTR	Full Production	$0.071	Purchase	SMD	BOX

* Fairchild 1,000 piece Budgetary Pricing

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QTLP600C-E
Red Surface Mount LED Lamp - Super Bright 0603 (0.8 mm Height)

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General description

These surface mount chip LEDs are designed to fit the industry standard footprint. Small size, low profile and wide viewing angle make these LEDs ideal choices for backlighting applications and panel illumination.

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Features

- Small footprint - 1.6(L) x 0.8(W) x 0.8(H) mm
- AllnGaP technology for -R, -E, -O, -Y and -AG
- InGaN/SiC technology for -IG and -IB
- Wide viewing angle of 100°
- 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

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Applications

- Keypad backlighting
- Push-button backlighting
- LCD backlighting

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Product status/pricing/packaging

Product	Product status	Pricing*	Inventory check & ordering	Package type	Packing method
QTLP600CETR	Full Production	$0.051	Purchase	SMD	BOX

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QTLP600C-IB
Surface Mount LED Lamp - Super Bright 0606

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General description

These surface mount chip LEDs are designed to fit the industry standard footprint. Small size, low profile and wide viewing angle make these LEDs ideal choices for backlighting applications and panel illumination.

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Features

- Small footprint - 1.6(L) x 0.8(W) x 0.8(H) mm
- AllnGaP technology for -R, -E, -O, -Y and -AG
- InGaN/SiC technology for -IG and -IB
- Wide viewing angle of 100°
- 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

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Applications

- Keypad backlighting
- Push-button backlighting
- LCD backlighting

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Product status/pricing/packaging

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QTLP600C-IG
High Efficiency Red Rectangular Solid State Lamp

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General description

These surface mount chip LEDs are designed to fit the industry standard footprint. Small size, low profile and wide viewing angle make these LEDs ideal choices for backlighting applications and panel illumination.

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Features

- Small footprint - 1.6(L) x 0.8(W) x 0.8(H) mm
- AllnGaP technology for -R, -E, -O, -Y and -AG
- InGaN/SiC technology for -IG and -IB
- Wide viewing angle of 100°
- 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

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Applications

- Keypad backlighting
- Push-button backlighting
- LCD backlighting

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QTLP600C-O

Yellow Surface Mount LED Lamp - Super Bright 0603 (0.8 mm Height)

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

General description

These surface mount chip LEDs are designed to fit the industry standard footprint. Small size, low profile and wide viewing angle make these LEDs ideal choices for backlighting applications and panel illumination.

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Features

- Small footprint - 1.6(L) x 0.8(W) x 0.8(H) mm
- AllnGaP technology for -R, -E, -O, -Y and -AG
- InGaN/SiC technology for -IG and -IB
- Wide viewing angle of 100°
- 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

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Applications

- Keypad backlighting
- Push-button backlighting
- LCD backlighting

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Product status/pricing/packaging

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QTLP600C-R
High Efficiency Red Surface Mount LED
Lamp - Standard Bright 0603 (0.6 mm Height)

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General description

These surface mount chip LEDs are designed to fit the industry standard footprint. Small size, low profile and wide viewing angle make these LEDs ideal choices for backlighting applications and panel illumination.

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Features

- Small footprint - 1.6(L) x 0.8(W) x 0.8(H) mm
- AllnGaP technology for -R, -E, -O, -Y and -AG
- InGaN/SiC technology for -IG and -IB
- Wide viewing angle of 100°
- 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

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Applications

- Keypad backlighting
- Push-button backlighting
- LCD backlighting

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Product status/pricing/packaging

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QTLP600C-Y
AlGaAs Red Surface Mount LED Lamp -
Standard Bright 0603 (0.6 mm Height)

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General description

These surface mount chip LEDs are designed to fit the industry standard footprint. Small size, low profile and wide viewing angle make these LEDs ideal choices for backlighting applications and panel illumination.

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Features

- Small footprint - 1.6(L) x 0.8(W) x 0.8(H) mm
- AllnGaP technology for -R, -E, -O, -Y and -AG
- InGaN/SiC technology for -IG and -IB
- Wide viewing angle of 100°
- 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

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Applications

- Keypad backlighting
- Push-button backlighting
- LCD backlighting

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Product status/pricing/packaging

Product	Product status	Pricing*	Inventory check & ordering	Package type	Packing method
QTLP600CYTR	Full Production	$0.051	Purchase	SMD	BOX

* Fairchild 1,000 piece Budgetary Pricing

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