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SEMICONDUCTOR®

SURFACE MOUNT LED LAMP
SUPER BRIGHT 1206 (Inner Lens)

QTLP651C-R Red   **QTLP651C-E** Orange   **QTLP651C-O** Yellow-Orange

QTLP651C-Y Yellow   **QTLP651C-AG** Yellow-Green   **QTLP651C-IG** True Green

QTLP651C-IB Blue

PACKAGE DIMENSIONS

0.126 (3.2)
0.110 (2.8)
0.079 (2.0)
0.070 (1.8)
0.067 (1.7)
0.051 (1.3)

TOP

Ø0.020 (0.5)

CATHODE

10°
0.043 (1.1)
Ø0.035 (0.9)
0.035 (0.9)
0.024 (0.6)

SIDE

0.063 (1.6)
0.051 (1.3)

BOTTOM

+ —▷|— -
POLARITY
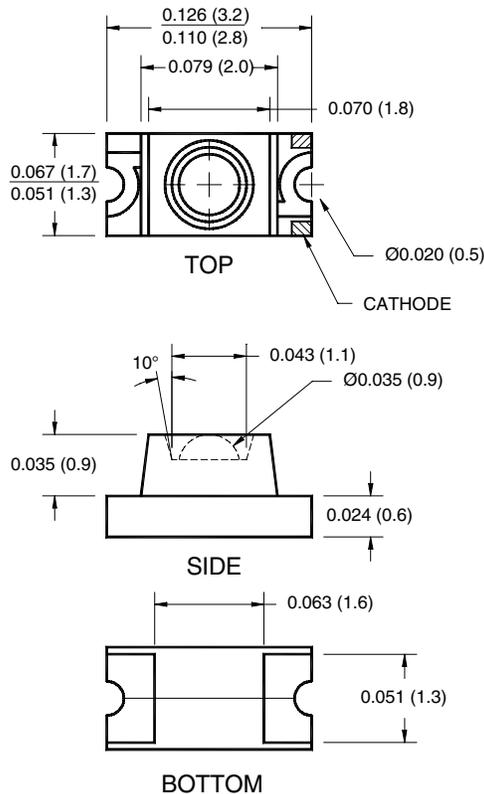
NOTE:

Dimensions for all drawings are in inches (mm).
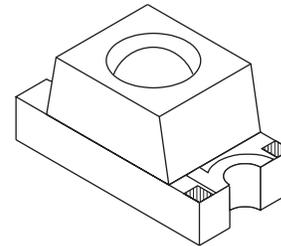
APPLICATIONS

- Keypad backlighting
- Push-button backlighting
- LCD backlighting

DESCRIPTION

These surface mount chip LEDs are designed to fit industry standard footprint. The package features a recessed, inner lens that focuses the light output, offering greater luminous intensity for direct viewing.

FEATURES

- Small footprint - 3.0(L) X 1.5(W) X 1.5(H) mm
- AlInGaP technology for -R, -E, -O, -Y and -AG
- InGaN/SiC technology for -IG and -IB
- Narrow viewing angle of 20°

- Water clear optics
- Moisture-proof packaging
- Available in 0.315" (8mm) width tape on 7" (178mm) diameter reel; 2,000 units per reel

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SURFACE MOUNT LED LAMP
SUPER BRIGHT 1206 (Inner Lens)

QTLP651C-R Red **QTLP651C-E** Orange **QTLP651C-O** Yellow-Orange

QTLP651C-Y Yellow **QTLP651C-AG** Yellow-Green **QTLP651C-IG** True Green

QTLP651C-IB Blue

ABSOLUTE MAXIMUM RATINGS (T$_A$ =25°C Unless otherwise specified)

Parameter	Symbol	QTLP651C					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	QTLP651C		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 1206 (Inner Lens)

QTLP651C-R Red **QTLP651C-E** Orange **QTLP651C-O** Yellow-Orange

QTLP651C-Y Yellow **QTLP651C-AG** Yellow-Green **QTLP651C-IG** True Green

QTLP651C-IB Blue

ELECTRICAL / OPTICAL CHARACTERISTICS (T_A =25°C)

Part Number	Symbol	QTLP651C -R	-E	-O	-Y	-AG	Condition
Luminous Intensity (mcd)							
Minimum	I_V	25	25	25	25	15	I_F = 20mA
Typical		70	70	70	70	30	
Forward Voltage (V)							
Maximum	V_F	2.4	2.4	2.4	2.4	2.4	I_F = 20mA
Typical		2.0	2.0	2.0	2.0	2.0	
Wavelength (nm)	λ_P						
Peak		630	620	610	590	575	I_F = 20mA
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 (°)	$2\Theta 1/_2$	20	20	20	20	20	I_F = 20mA

ELECTRICAL / OPTICAL CHARACTERISTICS (T_A =25°C)

Part Number	Symbol	QTLP651C -IB	-IG	Condition
Luminous Intensity (mcd)				
Minimum	I_V	35	100	I_F = 20mA
Typical		45	140	
Forward Voltage (V)				
Maximum	V_F	4.0	4.0	I_F = 20mA
Typical		3.5	3.5	
Wavelength (nm)	λ_P			
Peak		465	520	I_F = 20mA
Dominant	λ_D	470	525	
Spectral Line Half Width (nm)	$\Delta\lambda$	25	35	I_F = 20mA
Viewing Angle (°)	$2\Theta 1/_2$	20	20	I_F = 20mA

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SURFACE MOUNT LED LAMP
SUPER BRIGHT 1206 (Inner Lens)

QTLP651C-R Red **QTLP651C-E** Orange **QTLP651C-O** Yellow-Orange

QTLP651C-Y Yellow **QTLP651C-AG** Yellow-Green **QTLP651C-IG** True Green

QTLP651C-IB Blue

TYPICAL PERFORMANCE CURVES (QTLP651C-R, -E, -O, -Y and -AG)

Fig. 1 Forward Current vs. Forward Voltage
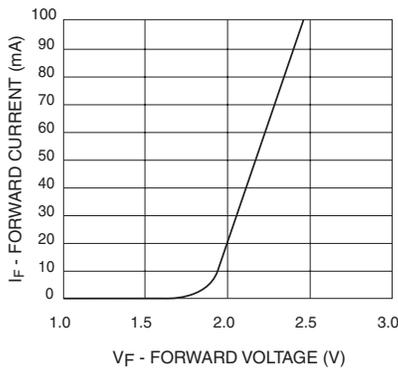
Fig. 2 Relative Luminous Intensity vs. DC Forward Current

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 1206 (Inner Lens)
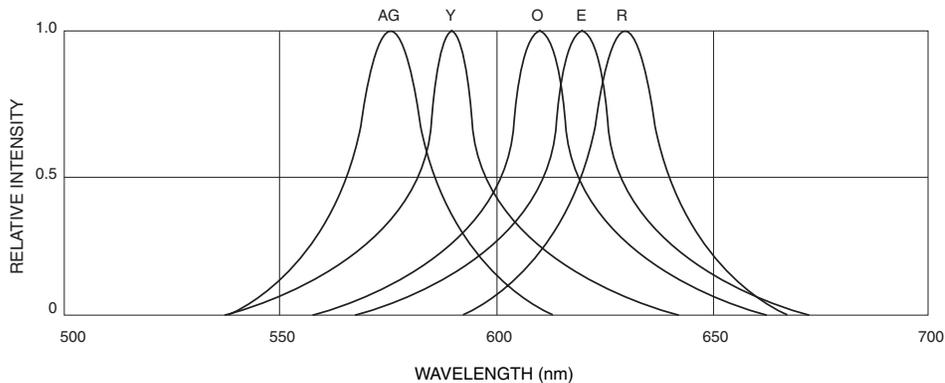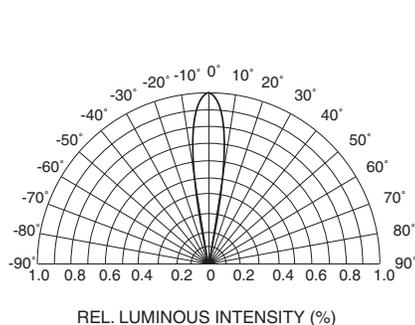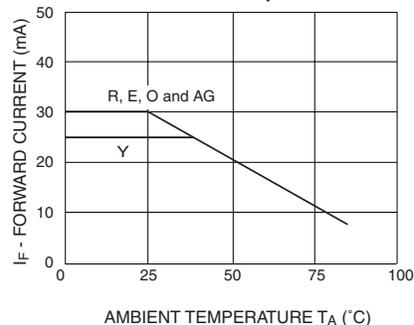
QTLP651C-R Red   **QTLP651C-E** Orange   **QTLP651C-O** Yellow-Orange

QTLP651C-Y Yellow   **QTLP651C-AG** Yellow-Green   **QTLP651C-IG** True Green

QTLP651C-IB Blue

TYPICAL PERFORMANCE CURVES (QTLP651C-IG and IB)

Fig. 1 Forward Current vs. Forward Voltage
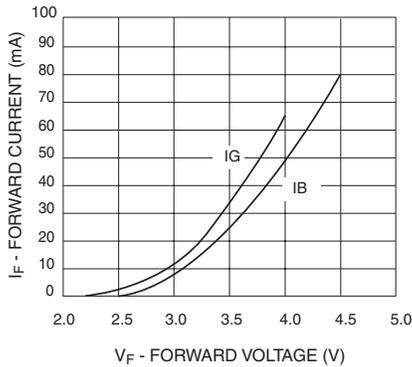
Fig. 2 Relative Luminous Intensity vs. DC Forward Current

Fig. 3 Relative Intensity vs. Peak Wavelength

Fig.4 Radiation Diagram

Fig.5 Maximum Forward Current vs. Ambient Temperature

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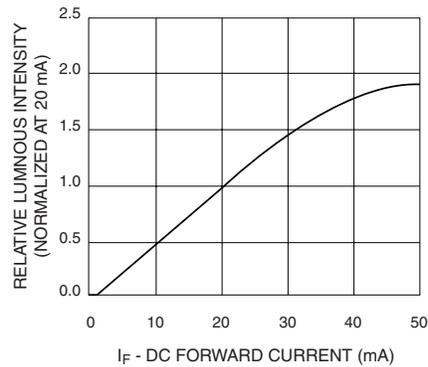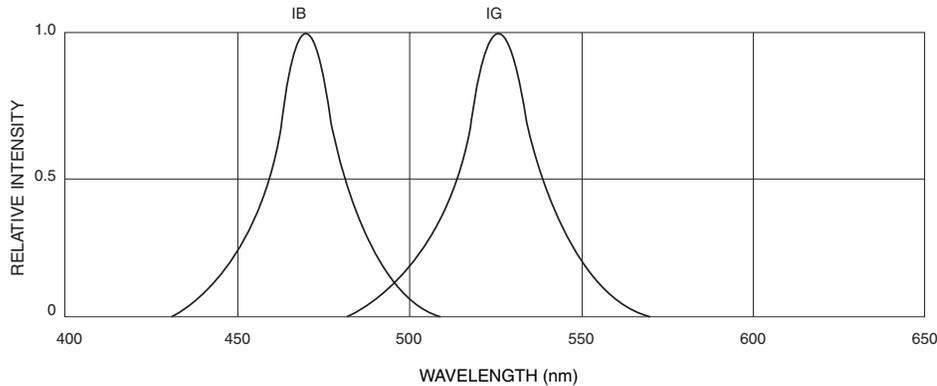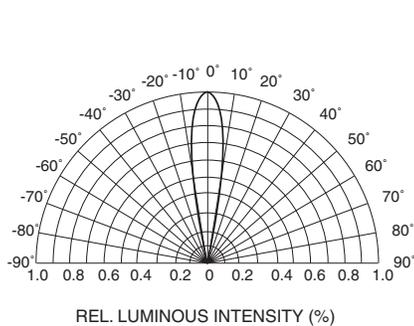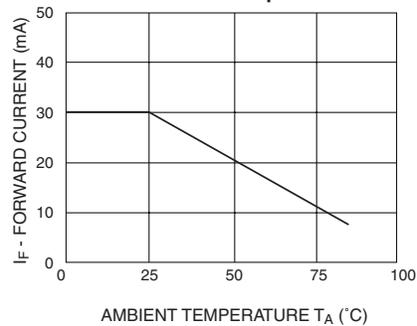
QTLP651C-R Red   **QTLP651C-E** Orange   **QTLP651C-O** Yellow-Orange

QTLP651C-Y Yellow   **QTLP651C-AG** Yellow-Green   **QTLP651C-IG** True Green

QTLP651C-IB Blue

RECOMMENDED PRINTED CIRCUIT BOARD PATTERN
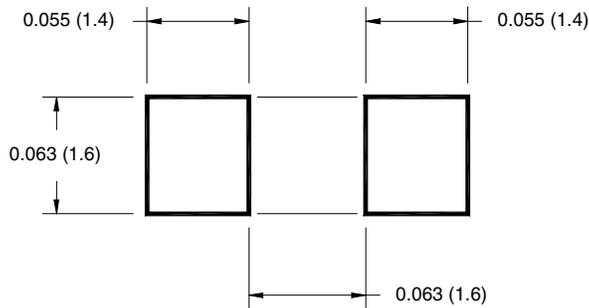
RECOMMENDED IR REFLOW SOLDERING PROFILE
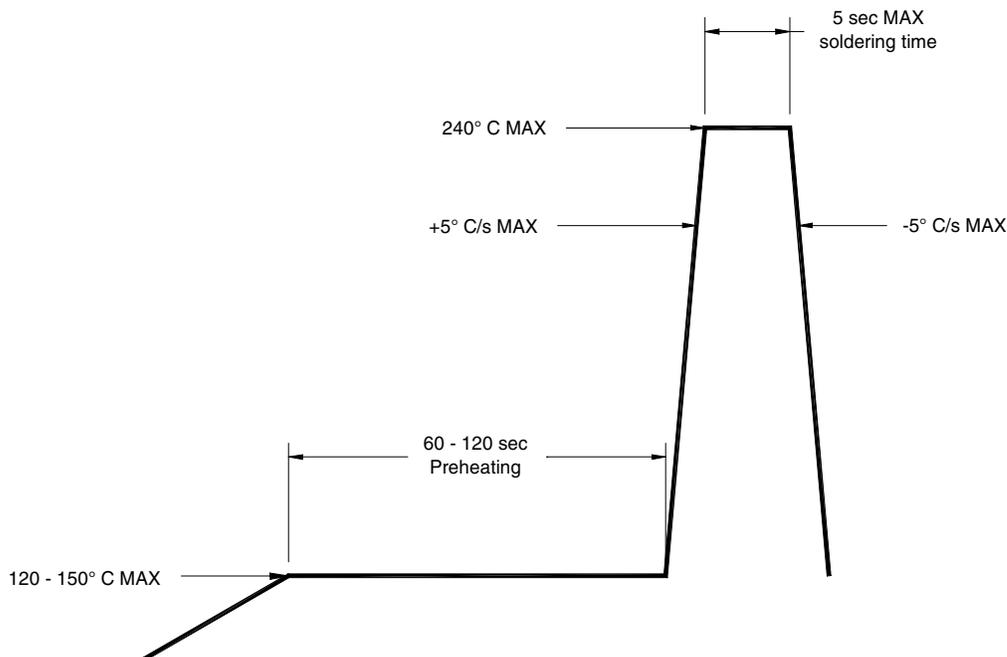
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SURFACE MOUNT LED LAMP
SUPER BRIGHT 1206 (Inner Lens)

QTLP651C-R Red

QTLP651C-E Orange

QTLP651C-O Yellow-Orange

QTLP651C-Y Yellow

QTLP651C-AG Yellow-Green

QTLP651C-IG True Green

QTLP651C-IB Blue

TAPE AND REEL DIMENSIONS

Progressive direction

Polarity
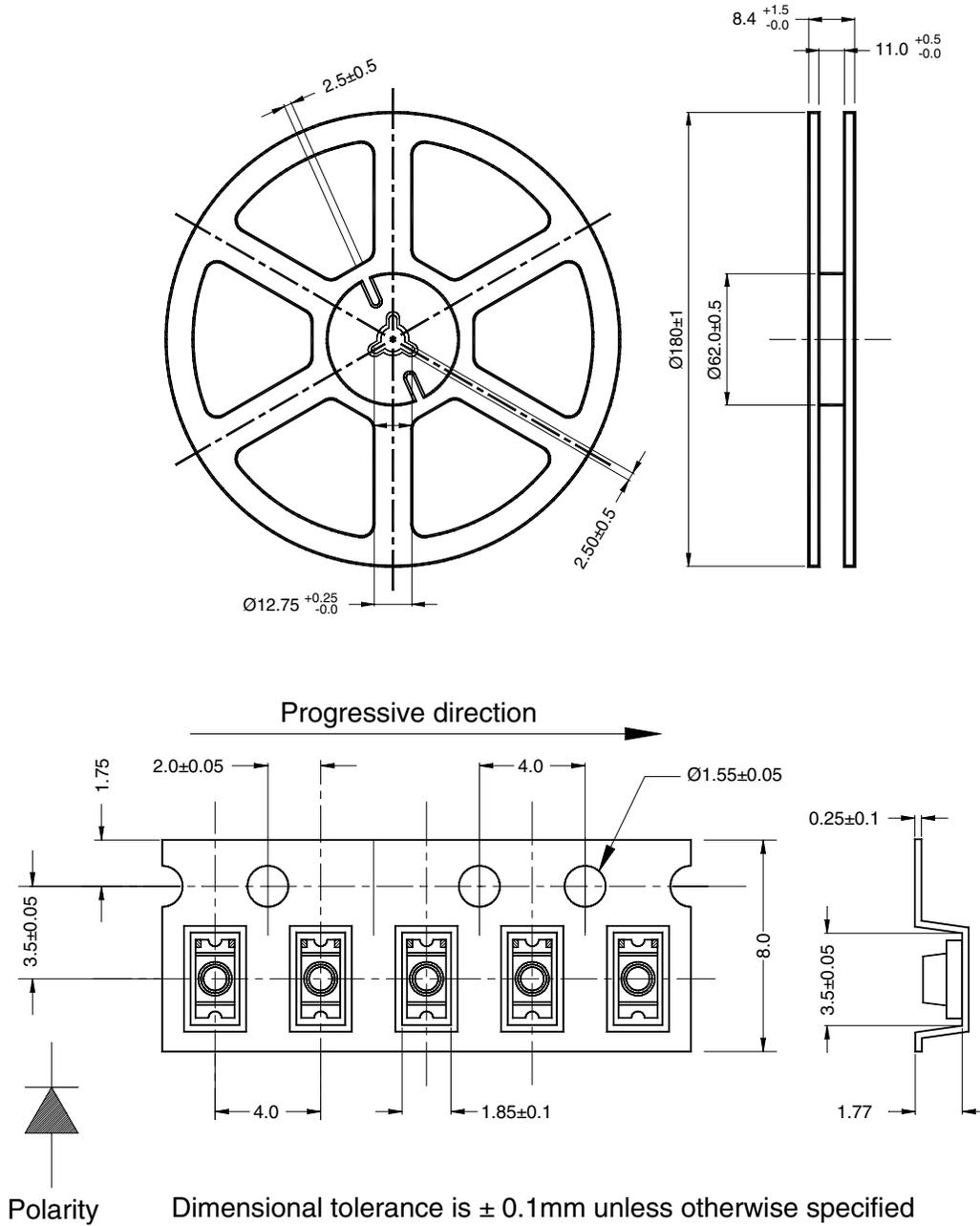
Dimensional tolerance is ± 0.1mm unless otherwise specified

Angle: ± 0.5

Unit: mm

QTLP651C-R Red   **QTLP651C-E** Orange   **QTLP651C-O** Yellow-Orange

QTLP651C-Y Yellow   **QTLP651C-AG** Yellow-Green   **QTLP651C-IG** True Green

QTLP651C-IB Blue

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QTLP651C-IG
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General description

These surface mount chip LEDs are designed to fit industry standard footprint. The package features a recessed, inner lens that focuses the light output, offering greater luminous intensity for direct viewing.

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Features

- Small footprint - 3.0(L) x 1.5(W) x 1.5(H) mm
- AllnGaP technology for -R, -E, -O, -Y and -AG
- InGaN/SiC technology for -IG and -IB
- Narrow viewing angle of 20°
- 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*	Package type	Packing method
QTLP651CIGTR	Full Production	$0.79	SMD	TAPE REEL

* 1,000 piece Budgetary Pricing

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QTLP651C-R
Red Surface Mount LED Lamp - Super Bright 1206 (Inner Lens)

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

General description

These surface mount chip LEDs are designed to fit industry standard footprint. The package features a recessed, inner lens that focuses the light output, offering greater luminous intensity for direct viewing.

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Features

- Small footprint - 3.0(L) x 1.5(W) x 1.5(H) mm
- AllnGaP technology for -R, -E, -O, -Y and -AG
- InGaN/SiC technology for -IG and -IB
- Narrow viewing angle of 20°
- 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
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- LCD backlighting

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Product status/pricing/packaging

Product	Product status	Pricing*	Package type	Packing method
QTLP651C-R.TR	Full Production	$0.081	SMD	TAPE REEL

* 1,000 piece Budgetary Pricing

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QTLP651C-Y
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General description

These surface mount chip LEDs are designed to fit industry standard footprint. The package features a recessed, inner lens that focuses the light output, offering greater luminous intensity for direct viewing.

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Features

- Small footprint - 3.0(L) x 1.5(W) x 1.5(H) mm
- AllnGaP technology for -R, -E, -O, -Y and -AG
- InGaN/SiC technology for -IG and -IB
- Narrow viewing angle of 20°
- 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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- Keypad backlighting
- Push-button backlighting
- LCD backlighting

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Product status/pricing/packaging

Product	Product status	Pricing*	Package type	Packing method
QTLP651C-Y.TR	Full Production	$0.081	SMD	TAPE REEL

* 1,000 piece Budgetary Pricing

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General description

These surface mount chip LEDs are designed to fit industry standard footprint. The package features a recessed, inner lens that focuses the light output, offering greater luminous intensity for direct viewing.

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Features

- Small footprint - 3.0(L) x 1.5(W) x 1.5(H) mm
- AllnGaP technology for -R, -E, -O, -Y and -AG
- InGaN/SiC technology for -IG and -IB
- Narrow viewing angle of 20°
- 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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- Keypad backlighting
- Push-button backlighting
- LCD backlighting

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Product status/pricing/packaging

Product	Product status	Pricing*	Package type	Packing method
QTLP651CIBTR	Full Production	$0.67	SMD	TAPE REEL

* 1,000 piece Budgetary Pricing

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QTLP651C-E

Orange Surface Mount LED Lamp - Super Bright 1206 (Inner Lens)

Contents

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

General description

These surface mount chip LEDs are designed to fit industry standard footprint. The package features a recessed, inner lens that focuses the light output, offering greater luminous intensity for direct viewing.

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Features

- Small footprint - 3.0(L) x 1.5(W) x 1.5(H) mm
- AllnGaP technology for -R, -E, -O, -Y and -AG
- InGaN/SiC technology for -IG and -IB
- Narrow viewing angle of 20°
- 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
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- LCD backlighting

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Product status/pricing/packaging

Product	Product status	Pricing*	Package type	Packing method
QTLP651C-E.TR	Full Production	$0.081	SMD	TAPE REEL

* 1,000 piece Budgetary Pricing

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QTLP651C-AG
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General description | Features | Applications | Product status/pricing/packaging

General description

These surface mount chip LEDs are designed to fit industry standard footprint. The package features a recessed, inner lens that focuses the light output, offering greater luminous intensity for direct viewing.

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Features

- Small footprint - 3.0(L) x 1.5(W) x 1.5(H) mm
- AllnGaP technology for -R, -E, -O, -Y and -AG
- InGaN/SiC technology for -IG and -IB
- Narrow viewing angle of 20°
- 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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- Keypad backlighting
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Product	Product status	Pricing*	Package type	Packing method
QTLP651CAGTR	Full Production	$0.096	SMD	TAPE REEL

* 1,000 piece Budgetary Pricing

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