

SURFACE MOUNT LED LAMP SUPER BRIGHT 1206 (Reverse Mount)

QTLP652C-R Red

QTLP652C-E Orange

QTLP652C-O Yellow-Orange

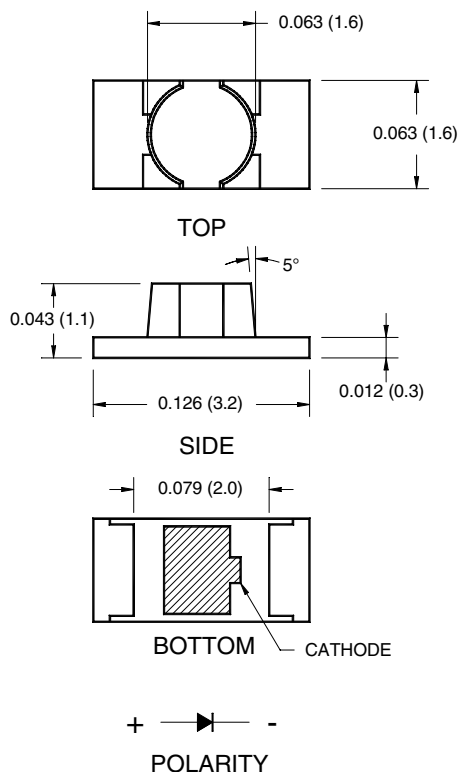
QTLP652C-Y Yellow

QTLP652C-AG Yellow-Green

QTLP652C-IG True Green

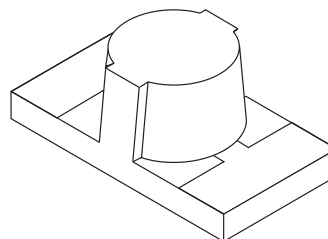
QTLP652C-IB Blue

PACKAGE DIMENSIONS



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. They are reverse mountable and designed to emit light through a small cut-out hole in the PC board.

FEATURES

- Small footprint - 3.2(L) X 1.6(W) X 1.1(H) mm
- AlInGaP technology for -R, -E, -O, -Y and -AG
- InGaN/SiC technology for -IG and -IB
- Wide 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 1206 (Reverse Mount)

QTLP652C-R Red

QTLP652C-E Orange

QTLP652C-O Yellow-Orange

QTLP652C-Y Yellow

QTLP652C-AG Yellow-Green

QTLP652C-IG True Green

QTLP652C-IB Blue

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

Parameter	Symbol	QTLP652C					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	QTLP652C		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

SURFACE MOUNT LED LAMP

SUPER BRIGHT 1206 (Reverse Mount)

QTLP652C-R Red

QTLP652C-E Orange

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QTLP652C-Y Yellow

QTLP652C-AG Yellow-Green

QTLP652C-IG True Green

QTLP652C-IB Blue

ELECTRICAL / OPTICAL CHARACTERISTICS (T_A = 25°C)

Part Number	Symbol	QTLP652C					Condition
		-R	-E	-O	-Y	-AG	
Luminous Intensity (mcd)	I _V	15	15	15	15	10	I _F = 20mA
Minimum		40	40	40	40	15	
Typical							
Forward Voltage (V)	V _F	2.4	2.4	2.4	2.4	2.4	I _F = 20mA
Maximum		2.0	2.0	2.0	2.0	2.0	
Typical							
Wavelength (nm)	λ _P	630	620	610	590	575	I _F = 20mA
Peak		624	615	605	589	573	
Dominant	λ _D						
Spectral Line Half Width (nm)	Δλ	20	18	18	15	20	I _F = 20mA
Viewing Angle (°)	2Θ _{1/2}	130	130	130	130	130	I _F = 20mA

ELECTRICAL / OPTICAL CHARACTERISTICS (T_A = 25°C)

Part Number	Symbol	QTLP652C		Condition
		-IB	-IG	
Luminous Intensity (mcd)	I _V	15	35	I _F = 20mA
Minimum		25	60	
Typical				
Forward Voltage (V)	V _F	4.0	4.0	I _F = 20mA
Maximum		3.5	3.5	
Typical				
Wavelength (nm)	λ _P	465	520	I _F = 20mA
Peak		470	525	
Dominant	λ _D			
Spectral Line Half Width (nm)	Δλ	25	35	I _F = 20mA
Viewing Angle (°)	2Θ _{1/2}	130	130	I _F = 20mA

QTLP652C-R Red

QTLP652C-E Orange

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QTLP652C-Y Yellow

QTLP652C-AG Yellow-Green

QTLP652C-IG True Green

QTLP652C-IB Blue

TYPICAL PERFORMANCE CURVES (QTLP652C-R, -E, -O, -Y and -AG)

Fig. 1 Forward Current vs. Forward Voltage

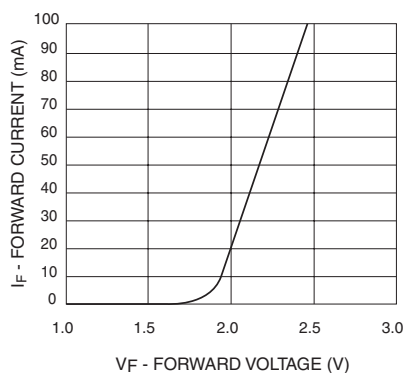


Fig. 2 Relative Luminous Intensity vs. DC Forward Current

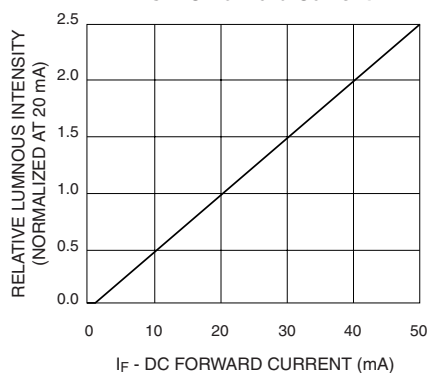


Fig. 3 Relative Intensity vs. Peak Wavelength

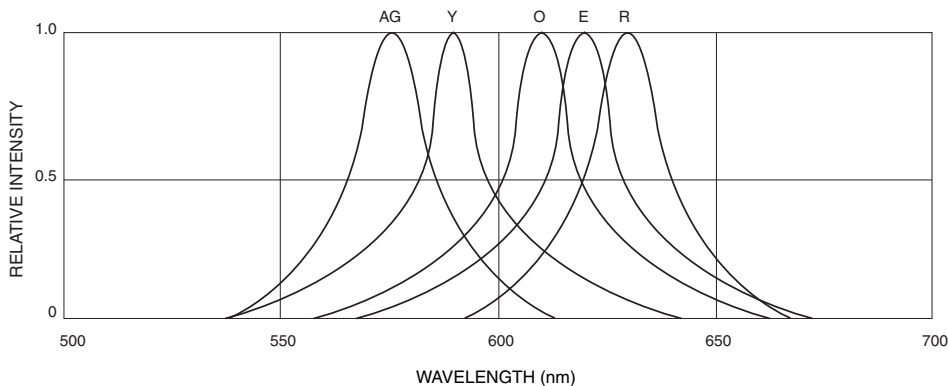


Fig.4 Radiation Diagram

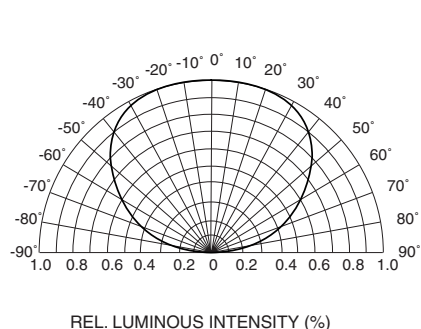
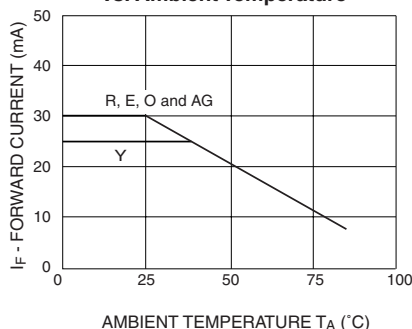


Fig.5 Maximum Forward Current vs. Ambient Temperature



QTLP652C-R Red

QTLP652C-E Orange

QTLP652C-O Yellow-Orange

QTLP652C-Y Yellow

QTLP652C-AG Yellow-Green

QTLP652C-IG True Green

QTLP652C-IB Blue

TYPICAL PERFORMANCE CURVES (QTLP652C-IG and IB)

Fig. 1 Forward Current vs. Forward Voltage

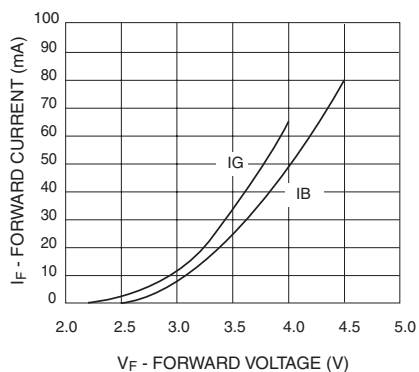


Fig. 2 Relative Luminous Intensity vs. DC Forward Current

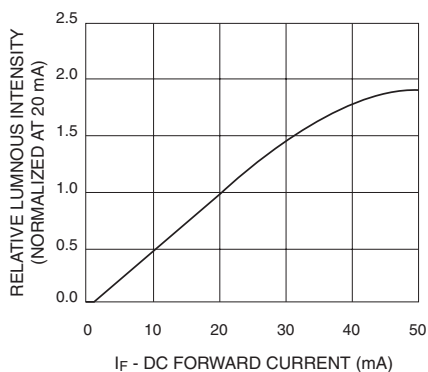


Fig. 3 Relative Intensity vs. Peak Wavelength

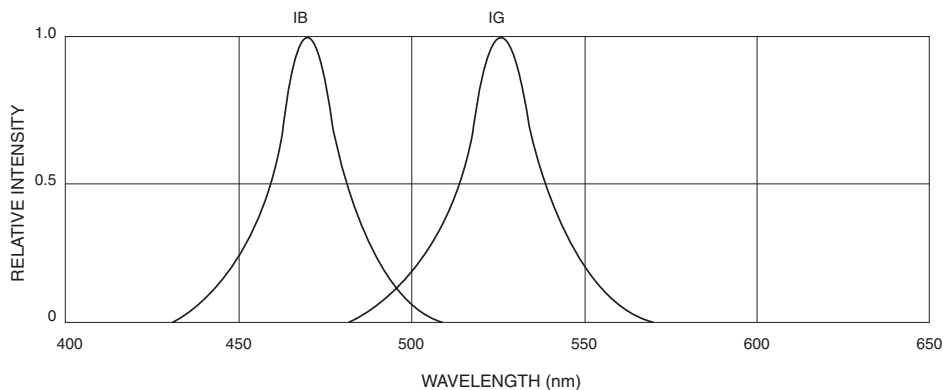


Fig. 4 Radiation Diagram

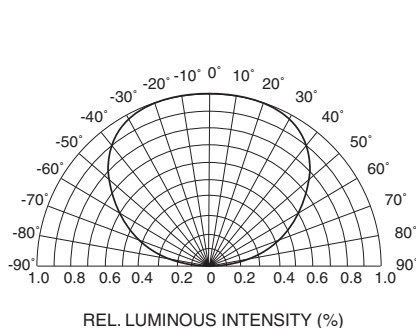
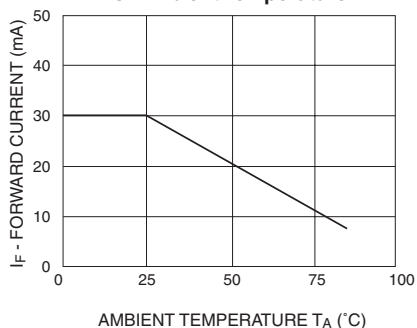


Fig. 5 Maximum Forward Current vs. Ambient Temperature



SURFACE MOUNT LED LAMP SUPER BRIGHT 1206 (Reverse Mount)

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QTLP652C-E Orange

QTLP652C-O Yellow-Orange

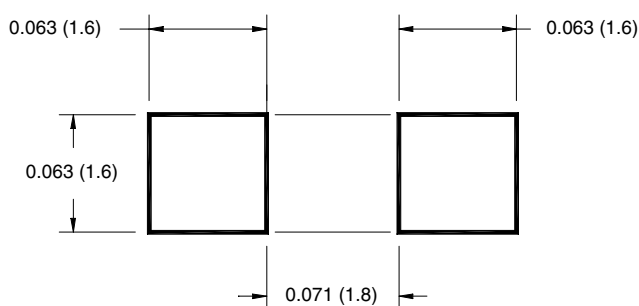
QTLP652C-Y Yellow

QTLP652C-AG Yellow-Green

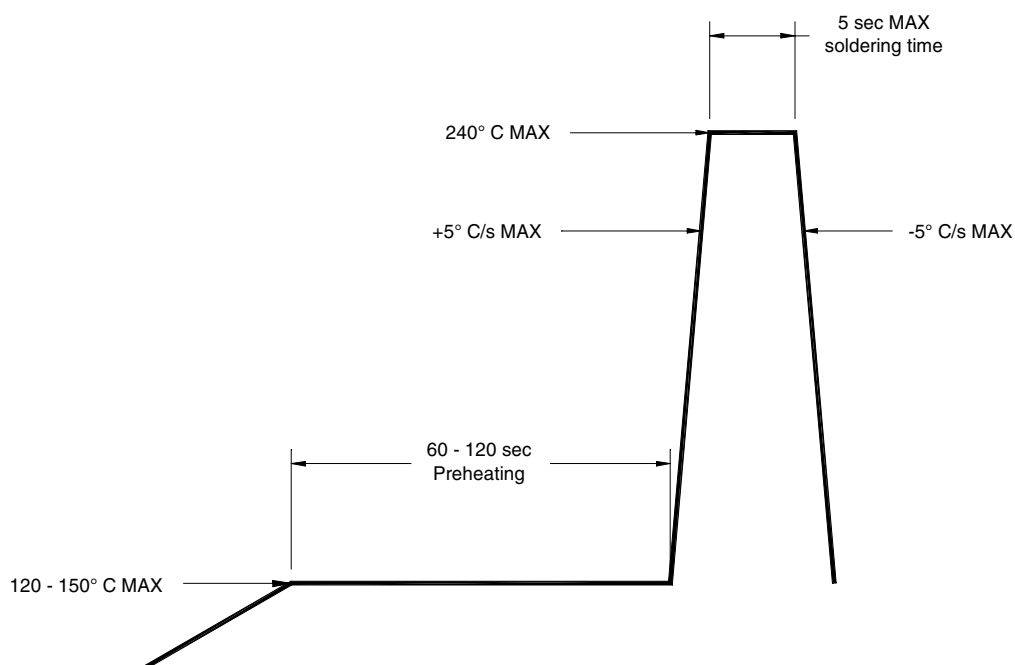
QTLP652C-IG True Green

QTLP652C-IB Blue

RECOMMENDED PRINTED CIRCUIT BOARD PATTERN



RECOMMENDED IR REFLOW SOLDERING PROFILE



SURFACE MOUNT LED LAMP SUPER BRIGHT 1206 (Reverse Mount)

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QTLP652C-E Orange

QTLP652C-O Yellow-Orange

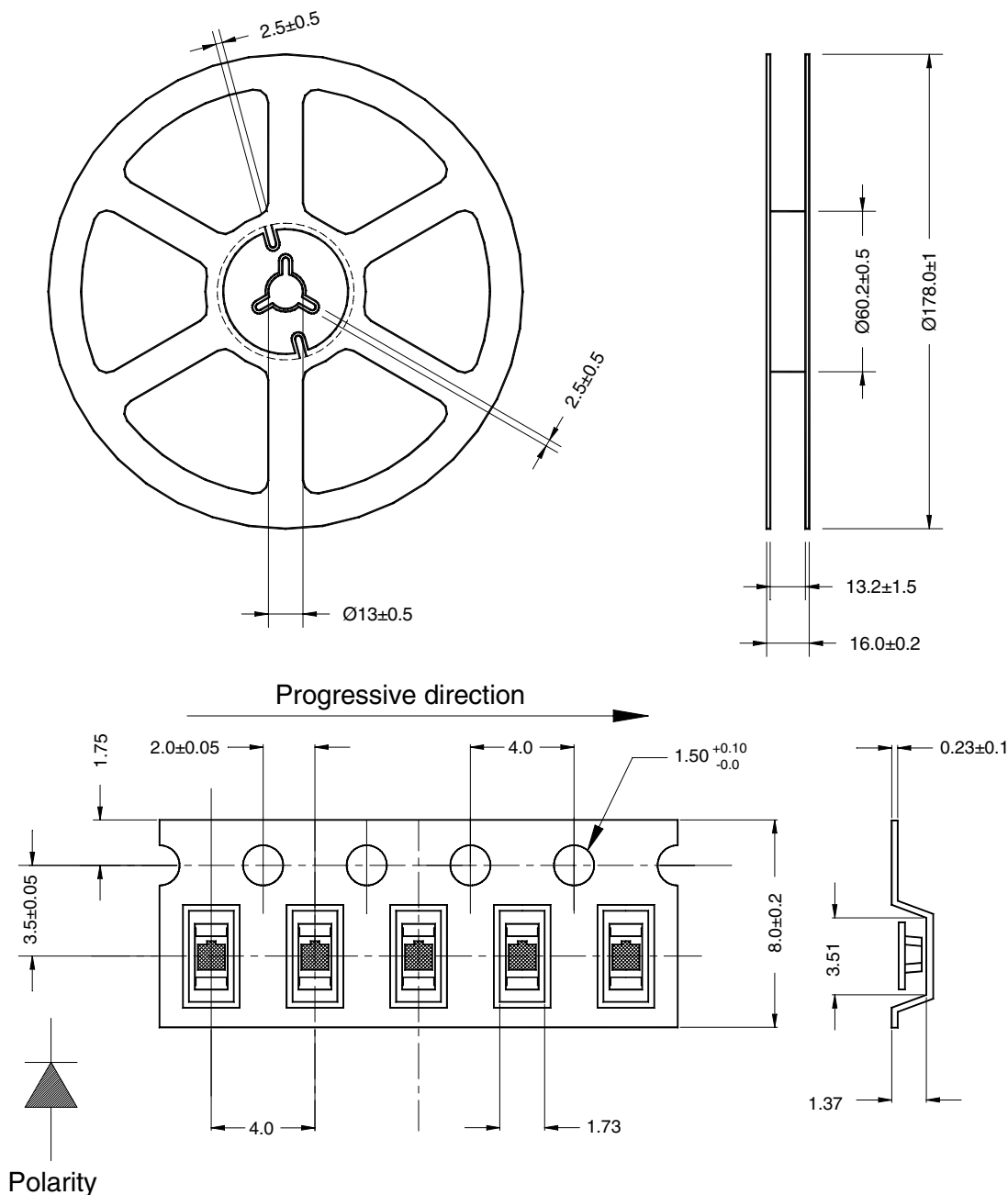
QTLP652C-Y Yellow

QTL P652C-AG Yellow-Green

QTLP652C-IG True Green

QTLP652C-IB Blue

TAPE AND REEL DIMENSIONS



Dimensional tolerance is $\pm 0.1\text{mm}$ unless otherwise specified

Angle: ± 0.5

Unit: mm

SURFACE MOUNT LED LAMP

SUPER BRIGHT 1206 (Reverse Mount)

QTLP652C-R Red

QTLP652C-E Orange

QTLP652C-O Yellow-Orange

QTLP652C-Y Yellow

QTLP652C-AG Yellow-Green

QTLP652C-IG True Green

QTLP652C-IB Blue

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QTLP652C-O

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General description

These surface mount chip LEDs are designed to fit industry standard footprint. They are reverse mountable and designed to emit light through a small cut-out hole in the PC board.

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Features

- Small footprint - 3.2(L) x 1.6(W) x 1.1(H) mm
- AllInGaP technology for -R, -E, -O, -Y and -AG
- InGaN/SiC technology for -IG and -IB
- Wide 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

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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
QTLP652COTR	Full Production	\$0.092	SMD	TAPE REEL

* 1,000 piece Budgetary Pricing

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QTLP652C-R

Red Surface Mount LED Lamp - Super Bright 1206 (Reverse Mount)

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General description

These surface mount chip LEDs are designed to fit industry standard footprint. They are reverse mountable and designed to emit light through a small cut-out hole in the PC board.

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Features

- Small footprint - 3.2(L) x 1.6(W) x 1.1(H) mm
- Wide viewing angle of 130°
- 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	Product status	Pricing*	Package type	Packing method
QTLP652CRTR	Full Production	\$0.092	SMD	TAPE REEL

* 1,000 piece Budgetary Pricing

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QTLP652C-Y

Yellow Surface Mount LED Lamp - Super
Bright 1206 (Reverse Mount)

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These surface mount chip LEDs are designed
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through a small cut-out hole in the PC board.

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Features

- Small footprint - 3.2(L) x 1.6(W) x 1.1(H) mm
- Wide viewing angle of 130°
- 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
QTLP652CYTR	Full Production	\$0.092	SMD	TAPE REEL

* 1,000 piece Budgetary Pricing

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Features

- Small footprint - 3.2(L) x 1.6(W) x 1.1(H) mm
- AllInGaP technology for -R, -E, -O, -Y and -AG
- InGaN/SiC technology for -IG and -IB
- Wide 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

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Applications

- Keypad backlighting
- Push-button backlighting
- LCD backlighting

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Product status/pricing/packageging

Product	Product status	Pricing*	Package type	Packing method
QTLP652CIGTR	Full Production	\$0.79	SMD	TAPE REEL

* 1,000 piece Budgetary Pricing

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General description

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Features

- Small footprint - 3.2(L) x 1.6(W) x 1.1(H) mm
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* 1,000 piece Budgetary Pricing

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QTLP652C-E

Orange Surface Mount LED Lamp - Super
Bright 1206 (Reverse Mount)

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Features

- Small footprint - 3.2(L) x 1.6(W) x 1.1(H) mm
- Wide viewing angle of 130°
- 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

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Product	Product status	Pricing*	Package type	Packing method
QTLP652CETR	Full Production	\$0.092	SMD	TAPE REEL

* 1,000 piece Budgetary Pricing

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Features

- Small footprint - 3.2(L) x 1.6(W) x 1.1(H) mm
- AllInGaP technology for -R, -E, -O, -Y and -AG
- InGaN/SiC technology for -IG and -IB
- Wide 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

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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
QTLP652CAGTR	Full Production	\$0.106	SMD	TAPE REEL

* 1,000 piece Budgetary Pricing

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