

**QTLP652C-2** HER

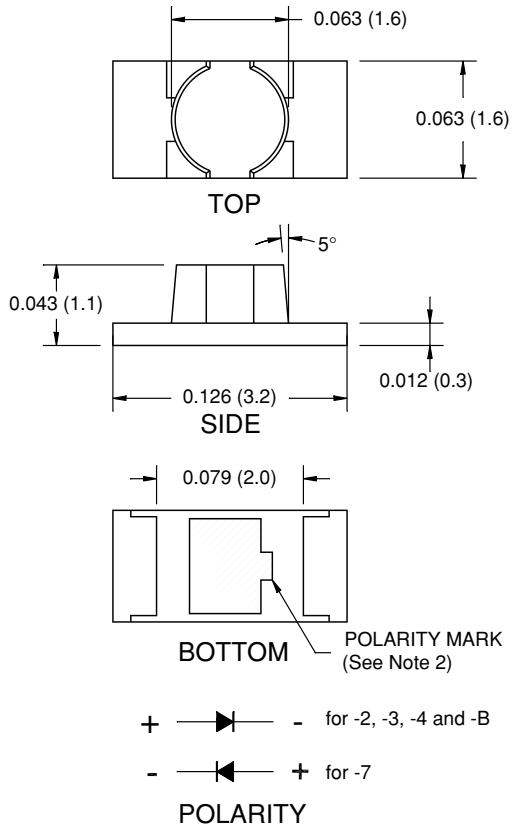
**QTLP652C-3** Yellow

**QTLP652C-4** Green

**QTLP652C-7** AlGaAs Red

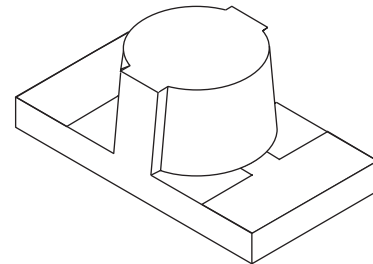
**QTLP652C-B** Blue

### PACKAGE DIMENSIONS



**NOTE:**

1. Dimensions for all drawings are in inches (mm).
2. Cathode for -2, -3, -4 and B. Anode for -7.



### 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
- Wide viewing angle of 130°
- 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

## STANDARD BRIGHT 1206 (Reverse Mount)

**QTLP652C-2** HER

**QTLP652C-3** Yellow

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**QTLP652C-B** Blue

### ABSOLUTE MAXIMUM RATINGS ( $T_A = 25^\circ\text{C}$ Unless otherwise specified)

Parameter	Symbol	QTLP652C					Units
		-2	-3	-4	-7	-B	
Continuous Forward Current	$I_F$	30	30	30	30	30	mA
Peak Forward Current ( $f = 1.0$ KHz, Duty Factor = 1/10)	$I_{FM}$	160	160	160	180	100	mA
Reverse Voltage ( $I_R = 10 \mu\text{A}$ )	$V_R$	5	5	5	5	5	V
Power Dissipation	$P_D$	84	84	84	72	135	mW
Operating Temperature	$T_{OPR}$	-40 to +85					$^\circ\text{C}$
Storage Temperature	$T_{STG}$	-40 to +90					$^\circ\text{C}$
Lead Soldering Time	$T_{SOL}$	260 for 5 sec					$^\circ\text{C}$

### ELECTRICAL / OPTICAL CHARACTERISTICS ( $T_A = 25^\circ\text{C}$ )

Part Number	Symbol	QTLP652C					Condition
		-2	-3	-4	-7	-B	
Luminous Intensity (mcd)	$I_V$	5	3	7	10	15	$I_F = 20\text{mA}$
Minimum							
Typical		9	5	13	20	20	
Forward Voltage (V)	$V_F$	2.8	2.8	2.8	2.4	4.5	$I_F = 20\text{mA}$
Maximum							
Typical		2.0	2.0	2.1	1.9	3.8	
Wavelength (nm)	$\lambda_P$	635	585	565	660	430	$I_F = 20\text{mA}$
Peak							
Dominant	$\lambda_D$	630	590	570	645	465	
Spectral Line Half Width (nm)	$\Delta\lambda$	45	35	30	20	65	$I_F = 20\text{mA}$
Viewing Angle ( $^\circ$ )	$2\theta_{1/2}$	130	130	130	130	130	$I_F = 20\text{mA}$

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## TYPICAL PERFORMANCE CURVES

Fig. 1 Forward Current vs. Forward Voltage

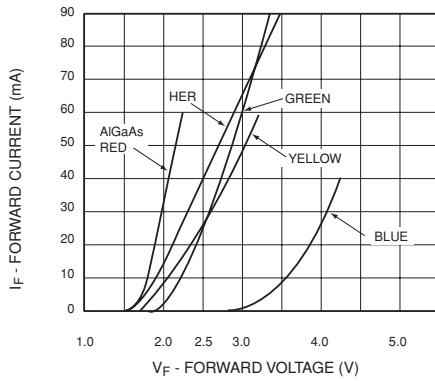


Fig. 2 Relative Luminous Intensity vs. DC Forward Current

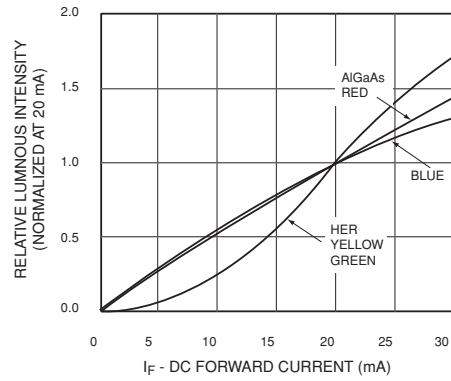


Fig. 3 Relative Intensity vs. Peak Wavelength

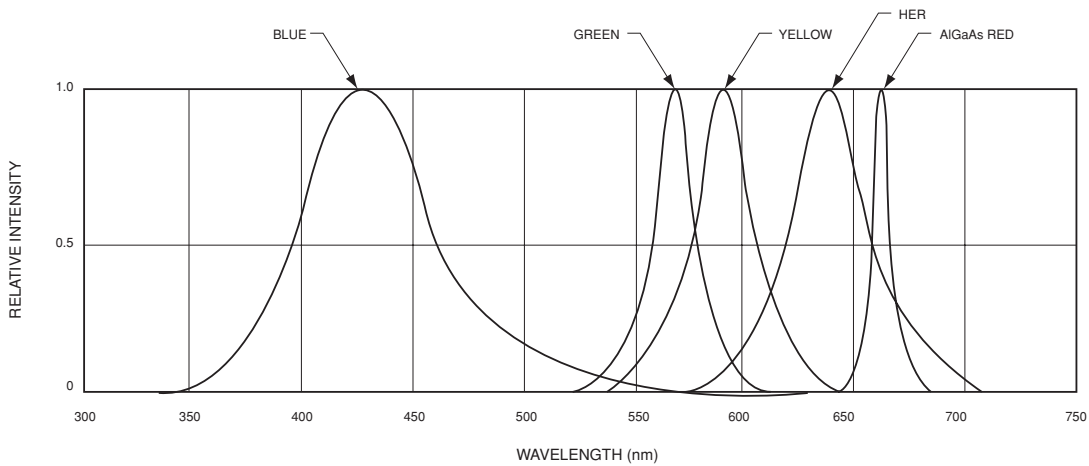


Fig. 4 Radiation Diagram

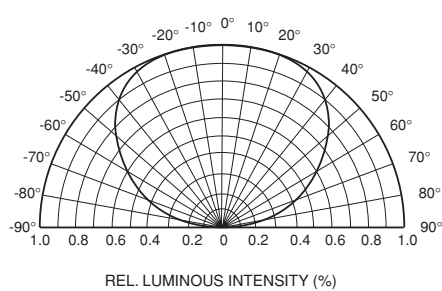
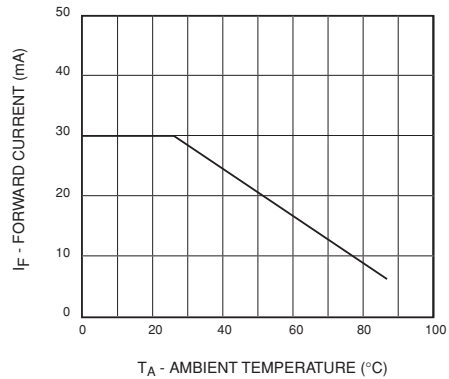


Fig. 5 Maximum Forward Current vs. Ambient Temperature



# SURFACE MOUNT LED LAMP STANDARD BRIGHT 1206 (Reverse Mount)

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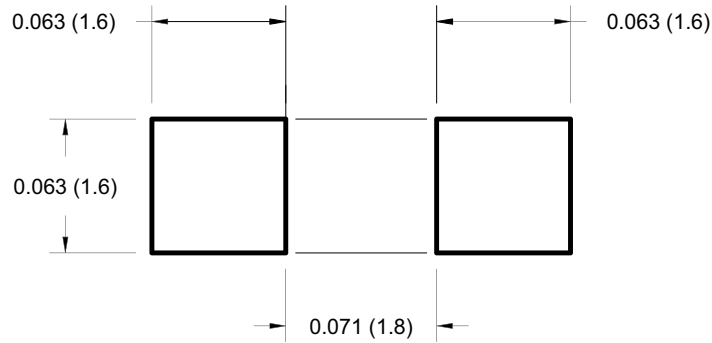
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**QTLP652C-4** Green

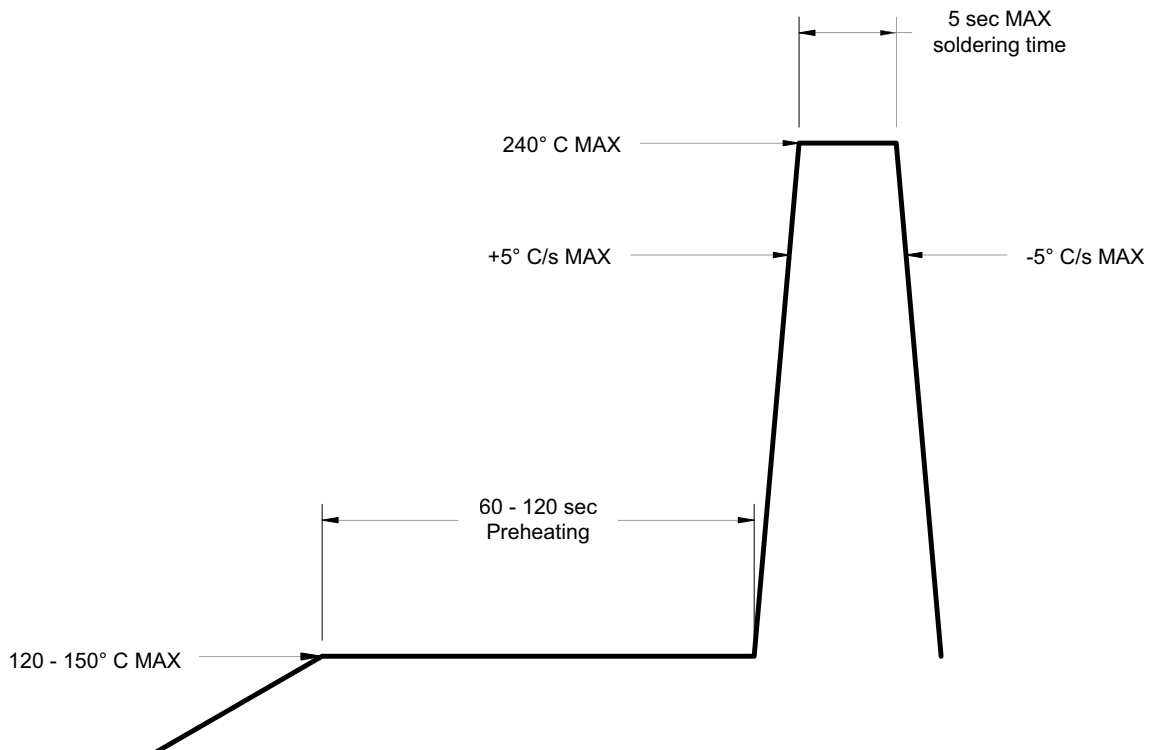
**QTLP652C-7** AlGaAs Red

**QTLP652C-B** Blue

## RECOMMENDED PRINTED CIRCUIT BOARD PATTERN



## RECOMMENDED IR REFLOW SOLDERING PROFILE



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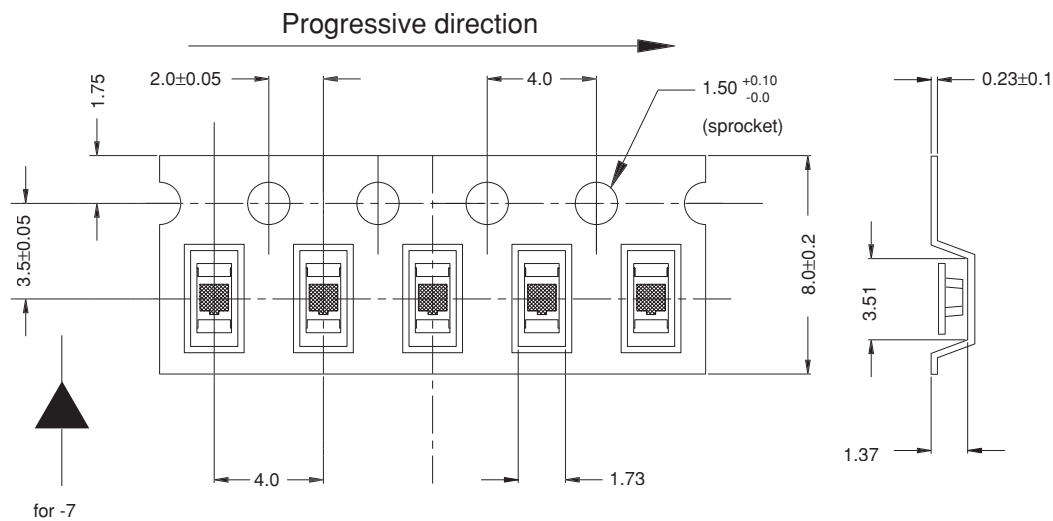
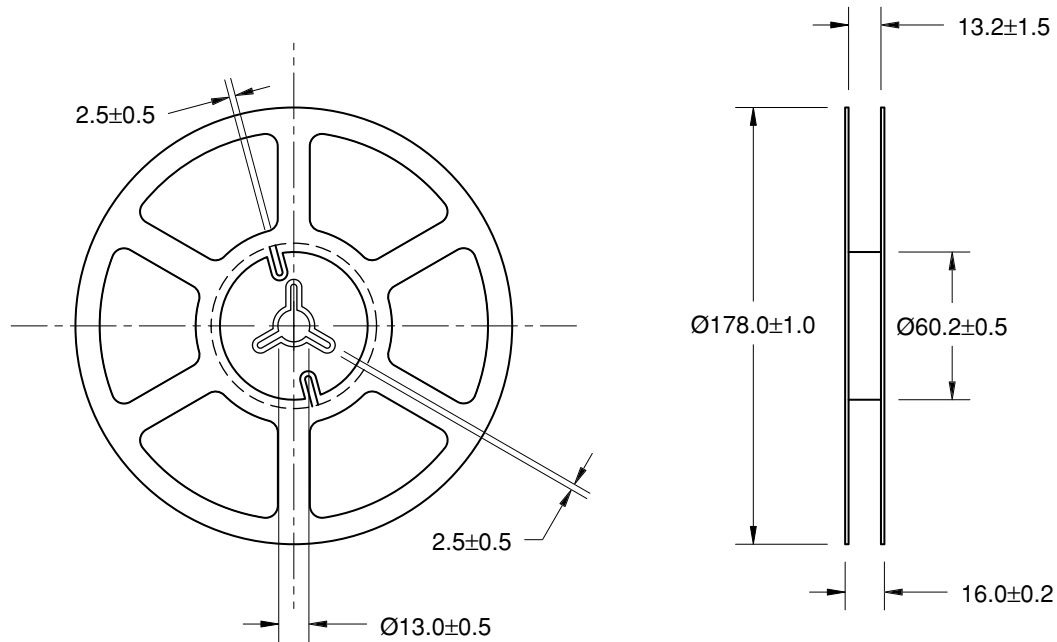
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QTLP652C-4 Green

QTLP652C-7 AlGaAs Red

QTLP652C-B Blue

## TAPE AND REEL DIMENSIONS



Polarity

Dimensional tolerance is  $\pm 0.1$ mm unless otherwise specified

Angle:  $\pm 0.5$

Polarity marks on the opposite sprocket side.

# SURFACE MOUNT LED LAMP STANDARD BRIGHT 1206 (Reverse Mount)

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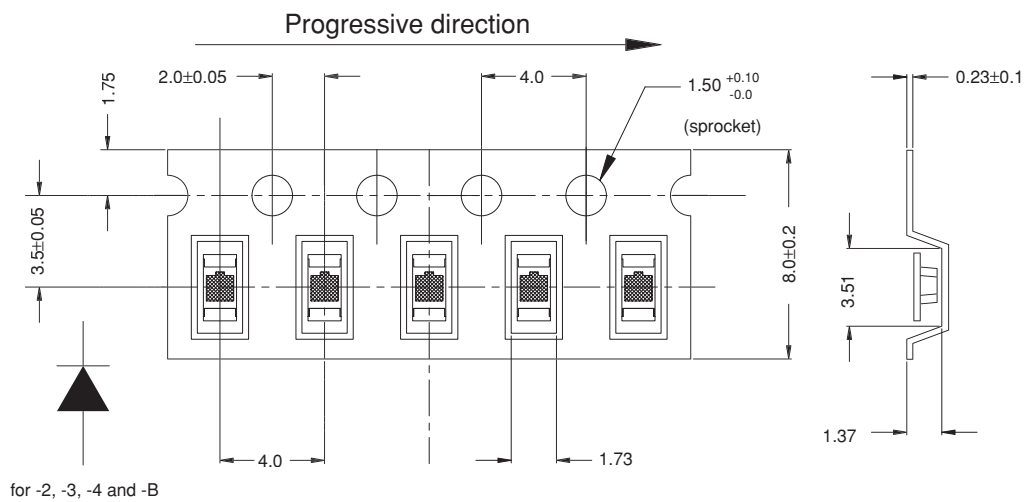
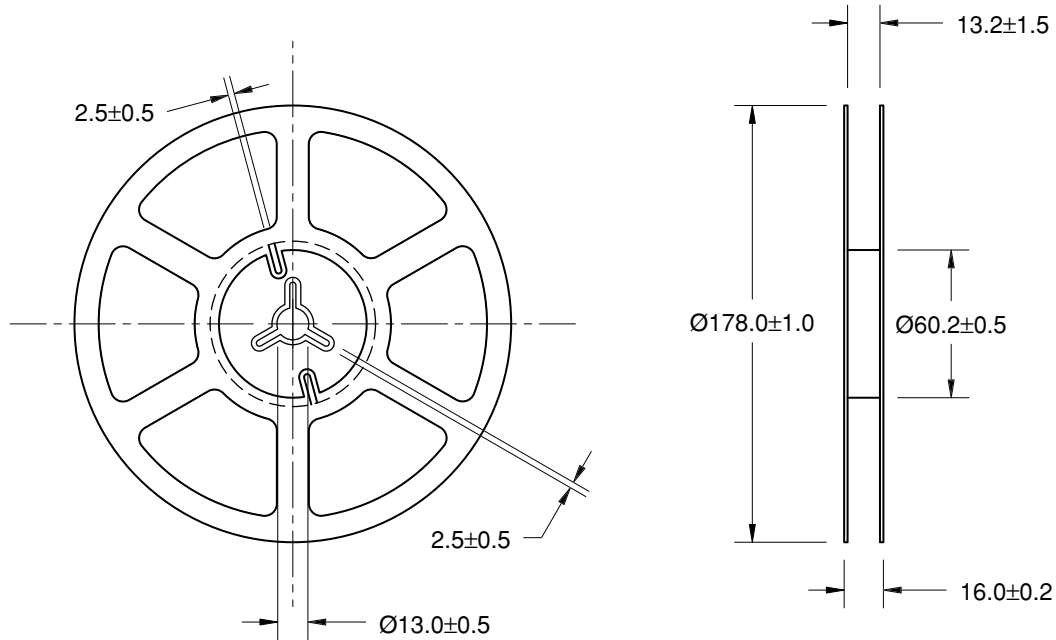
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## TAPE AND REEL DIMENSIONS



Polarity

Dimensional tolerance is  $\pm 0.1$ mm unless otherwise specified

Angle:  $\pm 0.5$

Unit: mm

Polarity marks on the sprocket side.

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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.