

QTLP652C-2 HER

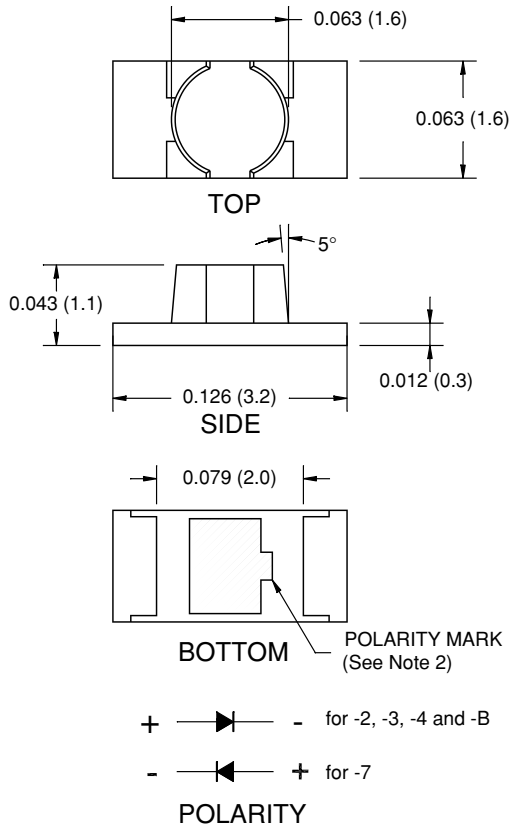
QTLP652C-3 Yellow

QTLP652C-4 Green

QTLP652C-7 AlGaAs Red

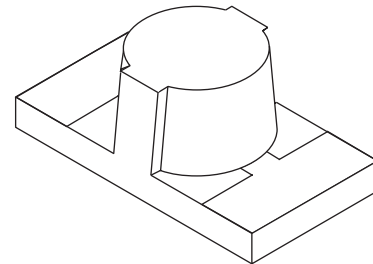
QTLP652C-B Blue

### 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

**QTLP652C-4** Green

**QTLP652C-7** AlGaAs Red

**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 ( $f = 1.0 \text{ KHz}$ , 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	$I_F = 20\text{mA}$

**QTLP652C-2** HER

**QTLP652C-3** Yellow

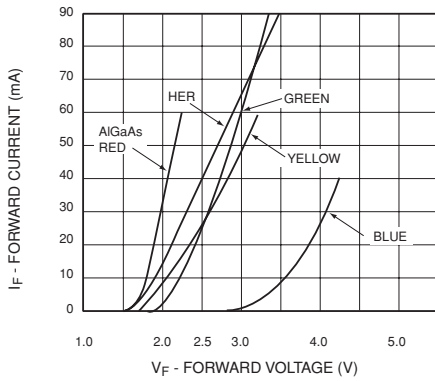
**QTLP652C-4** Green

**QTLP652C-7** AlGaAs Red

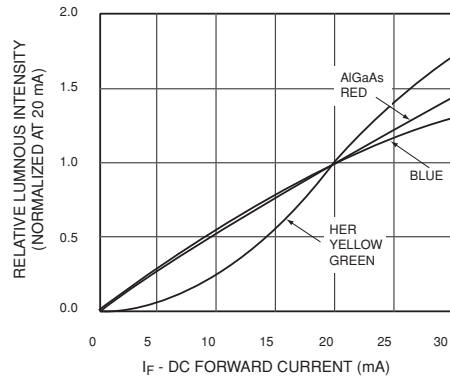
**QTLP652C-B** Blue

**TYPICAL PERFORMANCE CURVES**

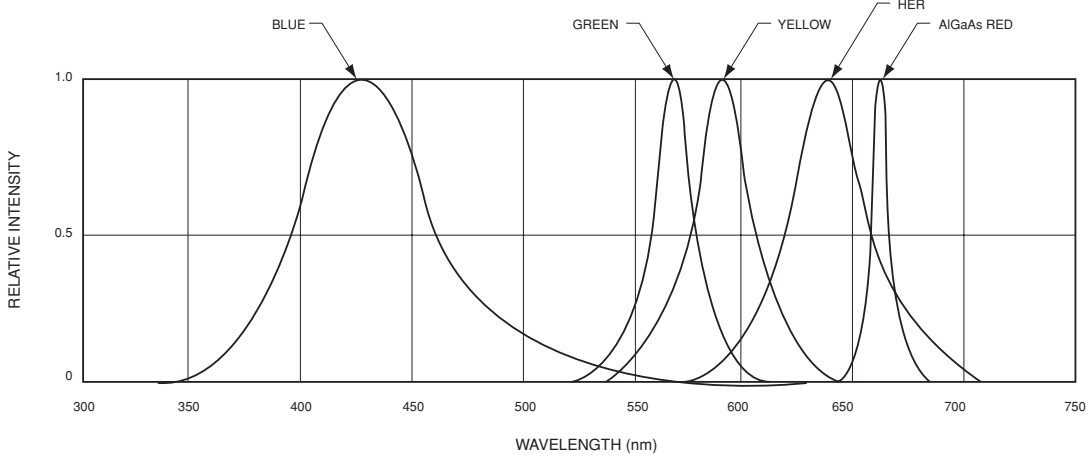
**Fig. 1 Forward Current vs. Forward Voltage**



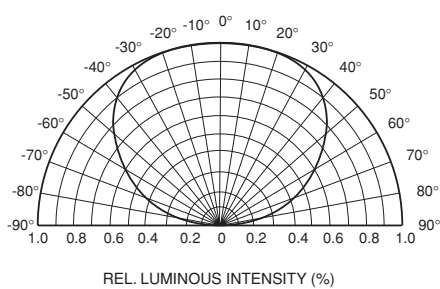
**Fig. 2 Relative Luminous Intensity vs. DC Forward Current**



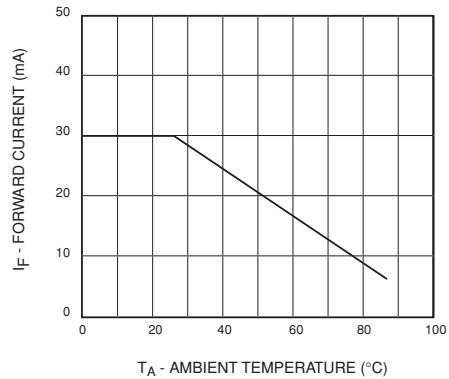
**Fig. 3 Relative Intensity vs. Peak Wavelength**



**Fig.4 Radiation Diagram**



**Fig.5 Maximum Forward Current vs. Ambient Temperature**



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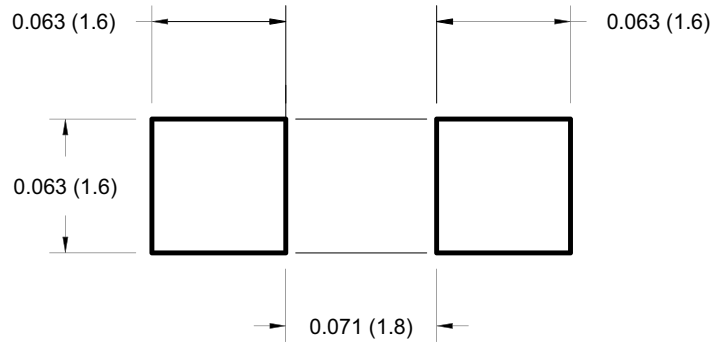
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QTLP652C-4 Green

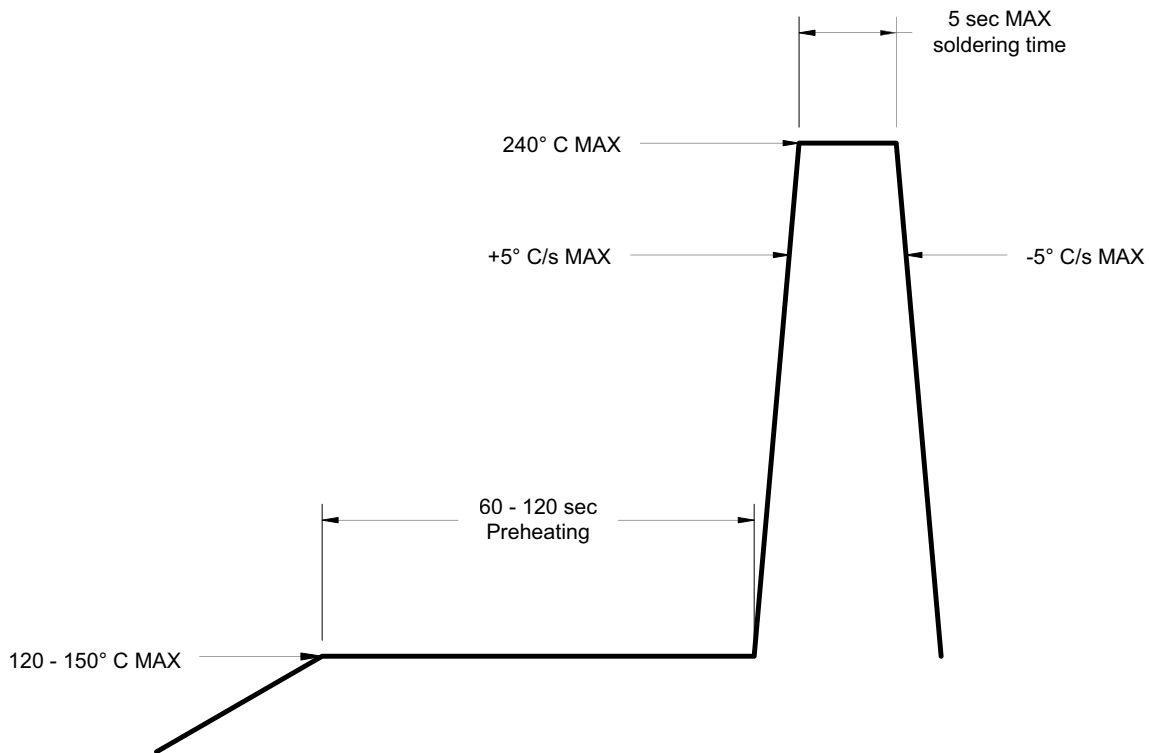
QTLP652C-7 AlGaAs Red

QTLP652C-B Blue

## RECOMMENDED PRINTED CIRCUIT BOARD PATTERN



## RECOMMENDED IR REFLOW SOLDERING PROFILE



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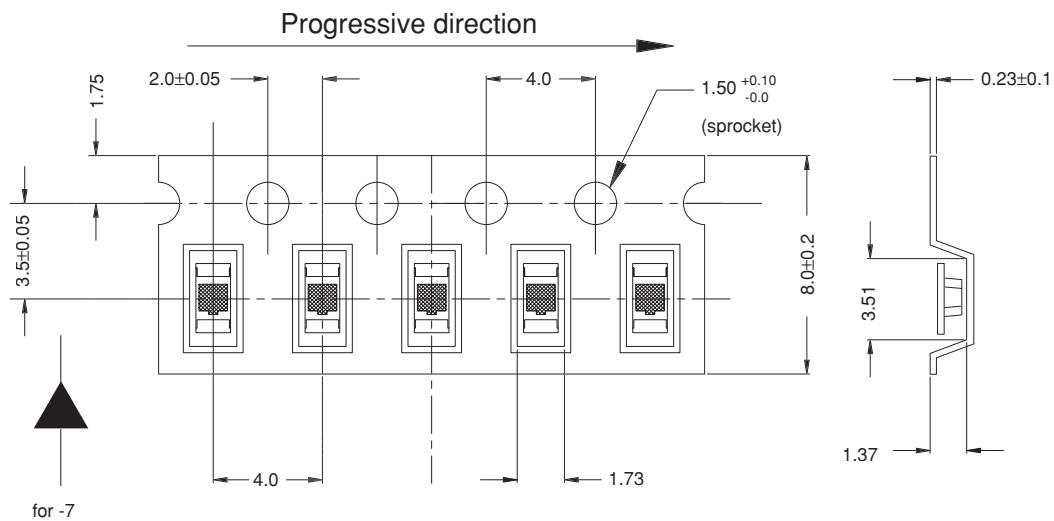
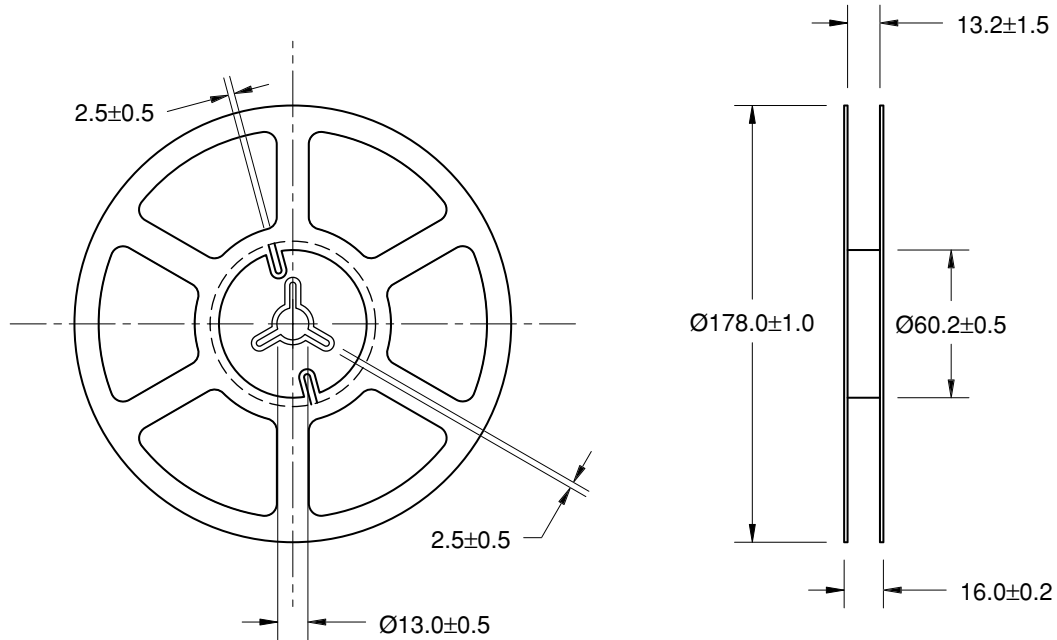
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## TAPE AND REEL DIMENSIONS



Polarity

Dimensional tolerance is  $\pm 0.1$ mm unless otherwise specified  
Angle:  $\pm 0.5$   
Polarity marks on the opposite sprocket side.

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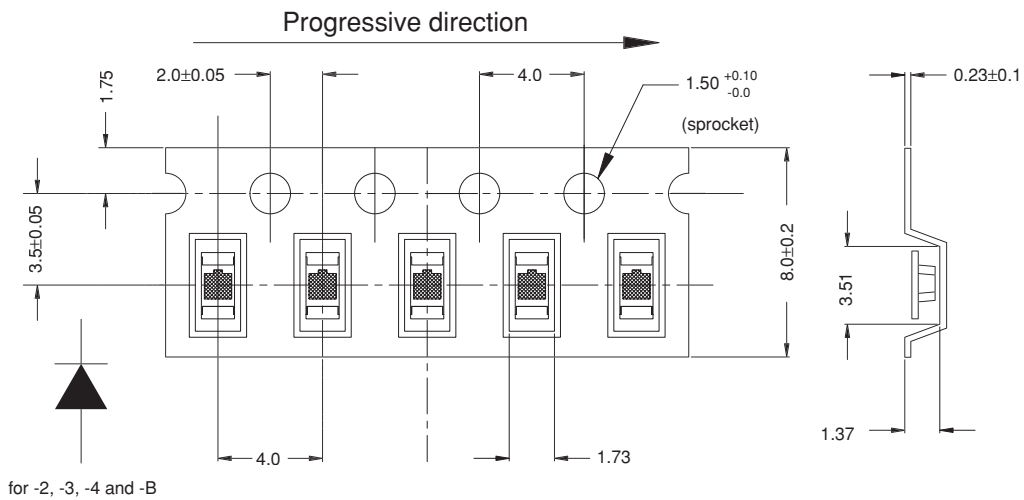
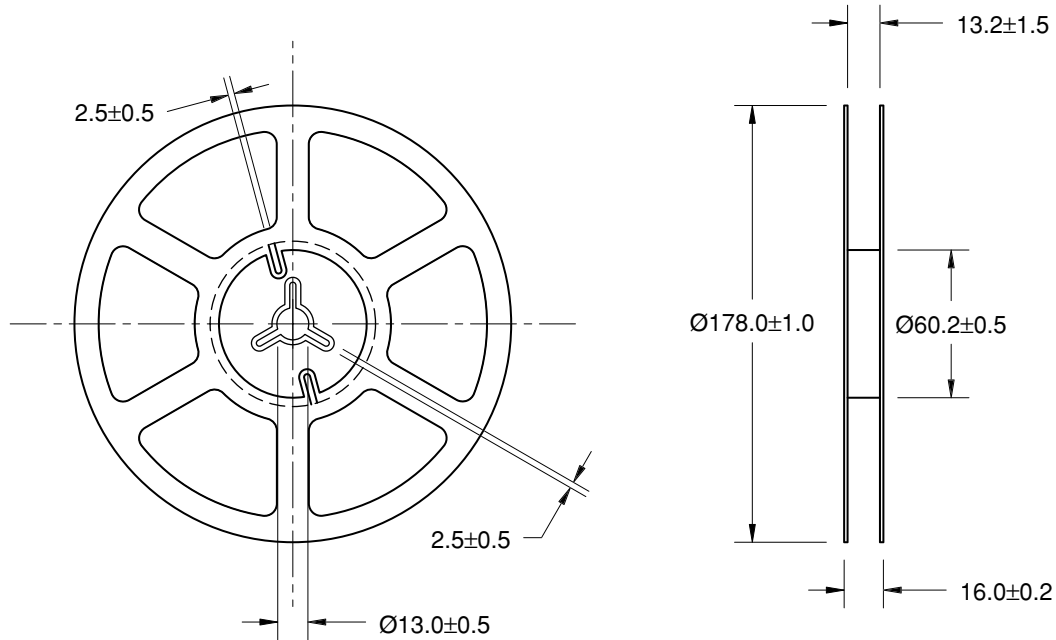
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Angle:  $\pm 0.5$

Unit: mm

Polarity marks on the sprocket side.

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