



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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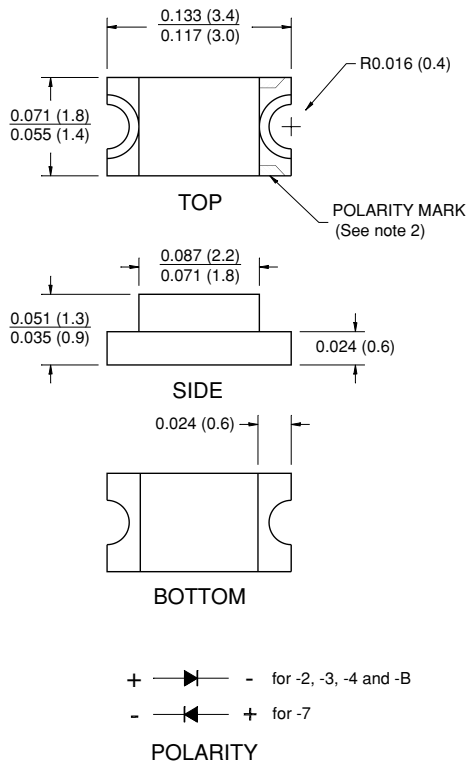
Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China



QTLP650C-2 / QTLP650D-2 HER
 QTLP650C-4 / QTLP650D-4 Green
 QTLP650C-B Blue

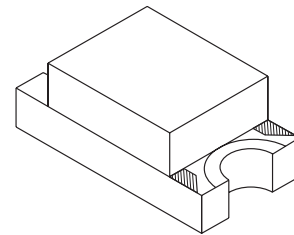
QTLP650C-3 / QTLP650D-3 Yellow
 QTLP650C-7 / QTLP650D-7 AlGaAs Red

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. Low profile and wide viewing angle make these LEDs ideal choices for backlighting applications and panel illumination.

FEATURES

- Small footprint - 3.2(L) X 1.6(W) X 1.1(H) mm
- Wide viewing angle of 140°(QTLP650C) or 160°(QTLP650D)
- Water clear (QTLP650C) or diffused (QTLP650D) optics
- Moisture-proof packaging
- Available in 0.315" (8mm) width tape on 7" (178mm) diameter reel; 2,000 units per reel

QTLP650C-2 / QTLP650D-2 HER

QTLP650C-3 / QTLP650D-3 Yellow

QTLP650C-4 / QTLP650D-4 Green

QTLP650C-7 / QTLP650D-7 AlGaAs Red

QTLP650C-B Blue

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

Parameter	Symbol	QTLP650C / QTLP650D					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	QTLP650C / QTLP650D					Condition
		-2	-3	-4	-7	-B*	
Luminous Intensity (mcd)	I_V	4 / 3	4 / 3	6 / 5	10 / 8	10 / -	$I_F = 20\text{mA}$
Minimum		10 / 8	10 / 8	10 / 8	20 / 15	20 / -	
Typical	V_F	2.8	2.8	2.8	2.4	4.5	$I_F = 20\text{mA}$
Forward Voltage (V)		2.0	2.0	2.1	1.9	3.8	
Maximum	λ_P	635	585	565	660	430	$I_F = 20\text{mA}$
Typical		λ_D	630	590	570	645	
Wavelength (nm)	$\Delta\lambda$	45	35	30	20	65	$I_F = 20\text{mA}$
Peak	$2\Theta_{1/2}$	140 / 160	140 / 160	140 / 160	140 / 160	140 / -	$I_F = 20\text{mA}$
Dominant							
Spectral Line Half Width (nm)							
Viewing Angle ($^\circ$)							

* Available only in QTLP650C

QTLP650C-2 / QTLP650D-2 HER
QTLP650C-4 / QTLP650D-4 Green
QTLP650C-B Blue

QTLP650C-3 / QTLP650D-3 Yellow
QTLP650C-7 / QTLP650D-7 AlGaAs Red

TYPICAL PERFORMANCE CURVES

Fig. 1 Forward Current vs. Forward Voltage

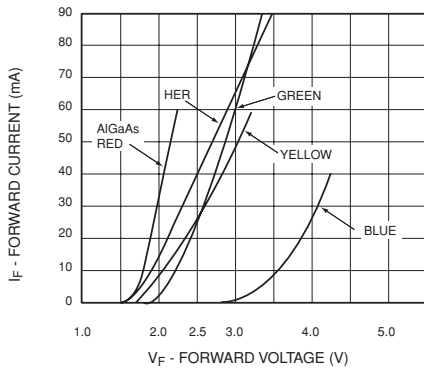


Fig. 2 Relative Luminous Intensity vs. DC Forward Current

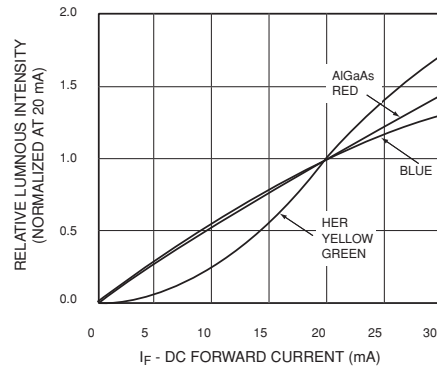


Fig. 3 Relative Intensity vs. Peak Wavelength

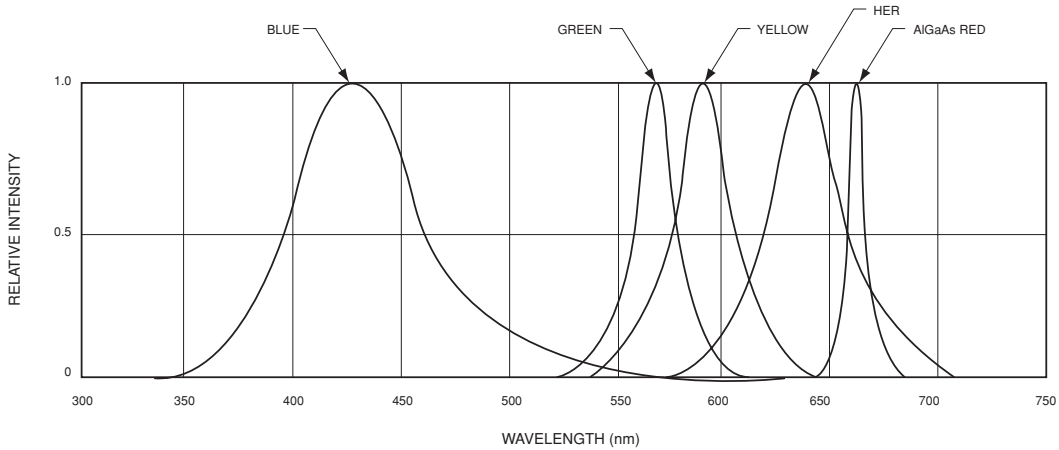


Fig.4 Radiation Diagram

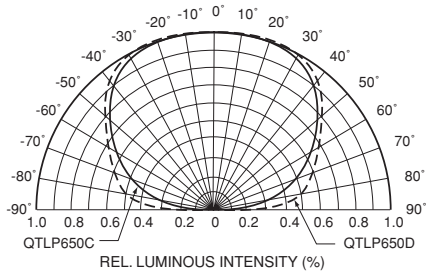
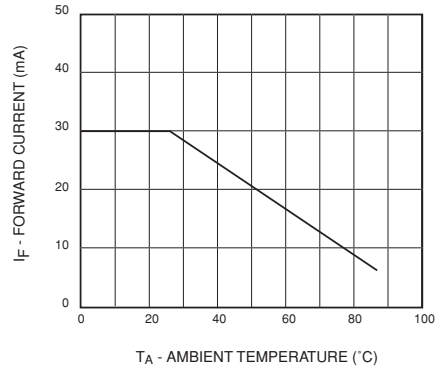


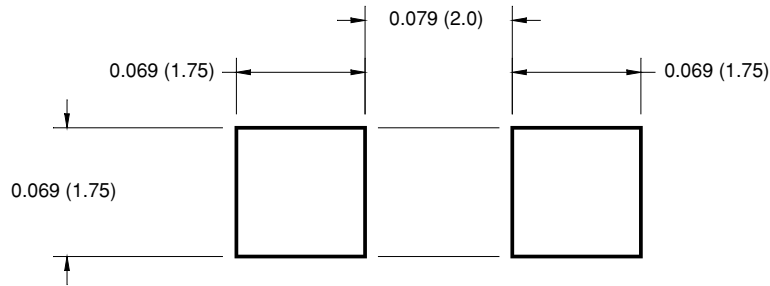
Fig.5 Maximum Forward Current vs. Ambient Temperature



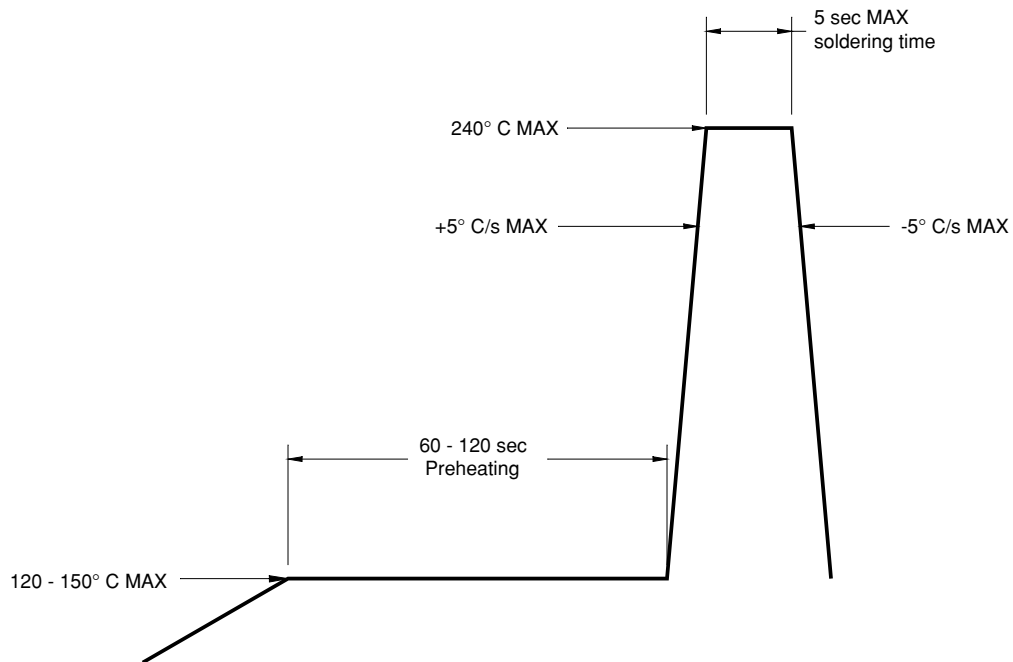
QTLP650C-2 / QTLP650D-2 HER
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RECOMMENDED PRINTED CIRCUIT BOARD PATTERN



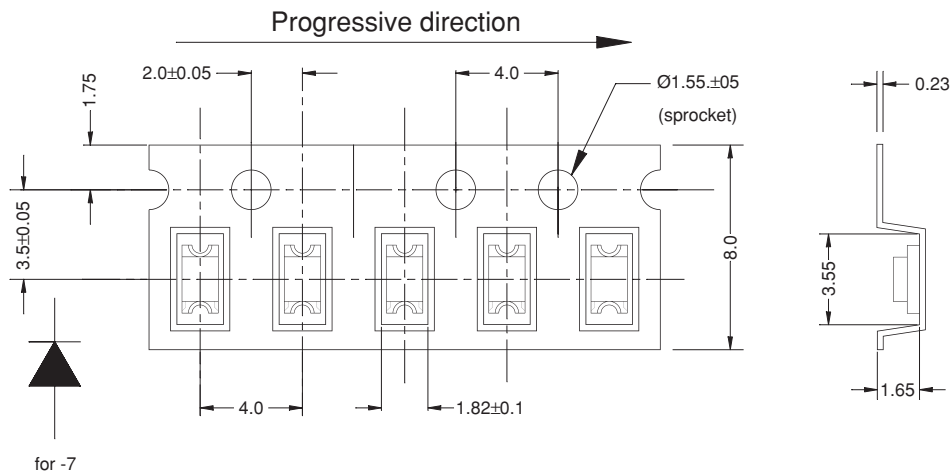
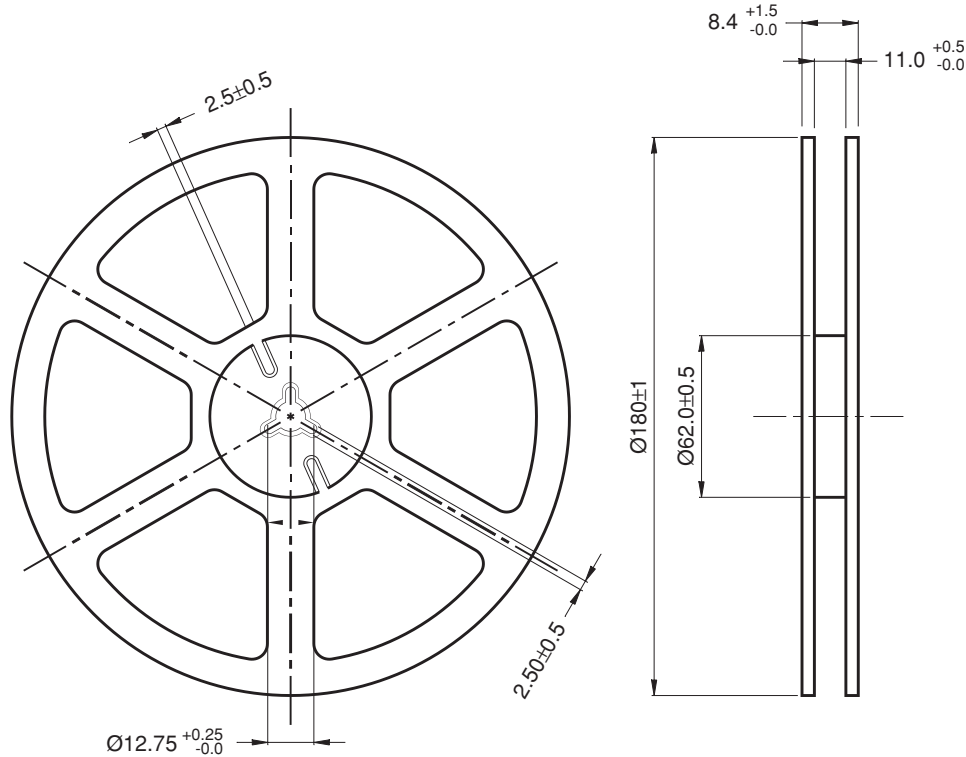
RECOMMENDED IR REFLOW SOLDERING PROFILE



QTLP650C-2 / QTLP650D-2 HER
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QTLP650C-B Blue

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QTLP650C-7 / QTLP650D-7 AlGaAs Red

TAPE AND REEL DIMENSIONS

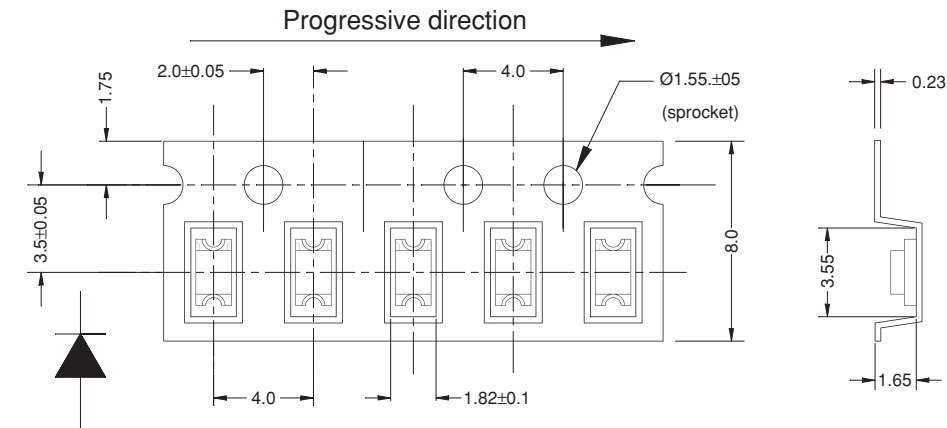
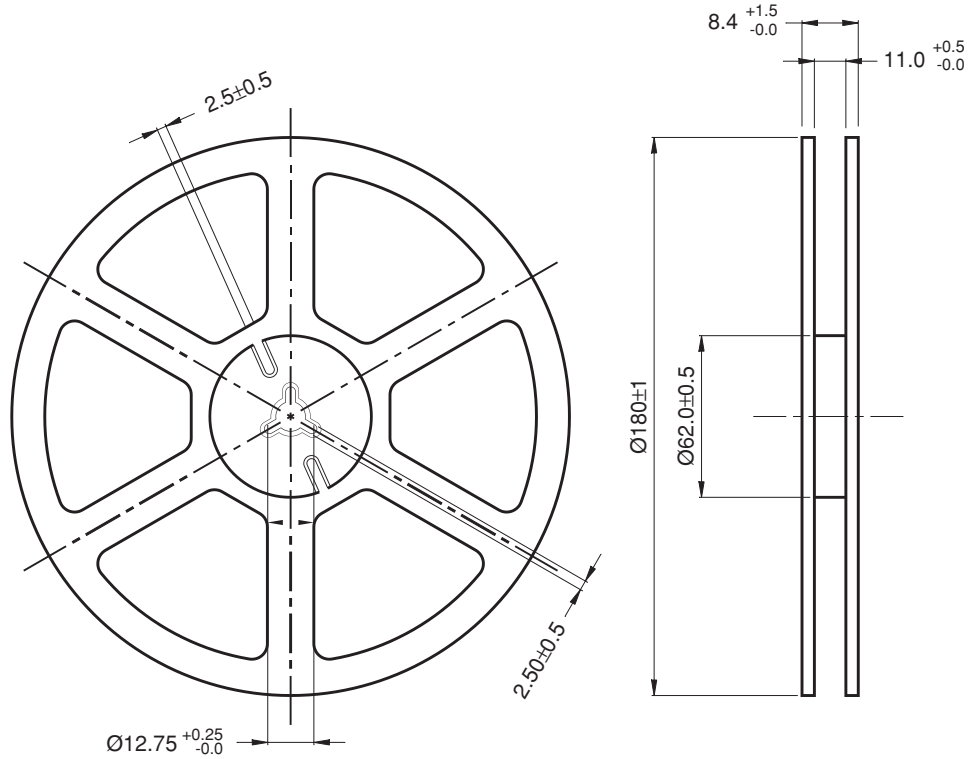


Polarity Dimensional tolerance is ± 0.1 mm unless otherwise specified
Angle: ± 0.5
Unit: mm
Polarity marks on opposite sprocket side.

QTLP650C-2 / QTLP650D-2 HER
QTLP650C-4 / QTLP650D-4 Green
QTLP650C-B Blue

QTLP650C-3 / QTLP650D-3 Yellow
QTLP650C-7 / QTLP650D-7 AlGaAs Red

TAPE AND REEL DIMENSIONS



for -2, -3, -4 and -B

Polarity

Dimensional tolerance is ± 0.1 mm unless otherwise specified

Angle: ± 0.5

Unit: mm

Polarity marks on the sprocket side.

QTLP650C-2 / QTLP650D-2 HER

QTLP650C-3 / QTLP650D-3 Yellow

QTLP650C-4 / QTLP650D-4 Green

QTLP650C-7 / QTLP650D-7 AlGaAs Red

QTLP650C-B Blue

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