



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!



## Contact us

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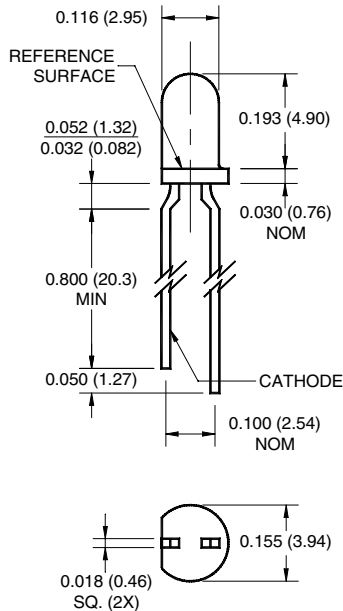
Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China



**QEC112**

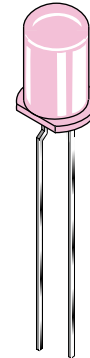
**QEC113**

**PACKAGE DIMENSIONS**

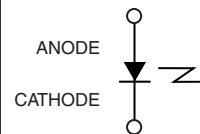


**NOTES:**

1. Dimensions for all drawings are in inches (mm).
2. Tolerance of  $\pm .010 (.25)$  on all non-nominal dimensions unless otherwise specified.



**SCHEMATIC**



**DESCRIPTION**

The QEC11X is an 940 nm GaAs LED encapsulated in a clear peach tinted, plastic T-1 package.

**FEATURES**

- $\lambda = 940 \text{ nm}$
- Chip material = GaAs
- Package type: T-1 (3mm)
- Matched Photosensor: QSC112
- Narrow Emission Angle,  $24^\circ$
- High Output Power
- Package material and color: Clear, peach tinted plastic

**QEC112**

**QEC113**

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

Parameter	Symbol	Rating	Unit
Operating Temperature	$T_{\text{OPR}}$	-40 to +100	$^\circ\text{C}$
Storage Temperature	$T_{\text{STG}}$	-40 to +100	$^\circ\text{C}$
Soldering Temperature (Iron) <sup>(2,3,4)</sup>	$T_{\text{SOL-I}}$	240 for 5 sec	$^\circ\text{C}$
Soldering Temperature (Flow) <sup>(2,3)</sup>	$T_{\text{SOL-F}}$	260 for 10 sec	$^\circ\text{C}$
Continuous Forward Current	$I_F$	50	mA
Reverse Voltage	$V_R$	5	V
Power Dissipation <sup>(1)</sup>	$P_D$	100	mW

1. Derate power dissipation linearly 1.33 mW/ $^\circ\text{C}$  above 25 $^\circ\text{C}$ .
2. RMA flux is recommended.
3. Methanol or isopropyl alcohols are recommended as cleaning agents.
4. Soldering iron 1/16" (1.6mm) minimum from housing.

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

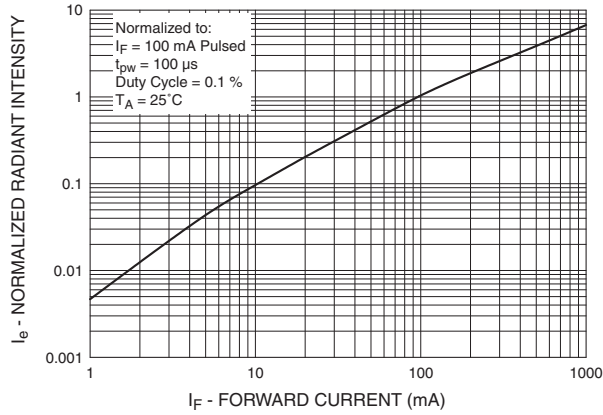
PARAMETER	TEST CONDITIONS	SYMBOL	MIN	TYP	MAX	UNITS
Peak Emission Wavelength	$I_F = 100 \text{ mA}$	$\lambda_{\text{PE}}$	—	940	—	nm
Emission Angle	$I_F = 100 \text{ mA}$	$2\theta_{1/2}$	—	24	—	Deg.
Forward Voltage	$I_F = 100 \text{ mA}$ , $t_p = 20 \text{ ms}$	$V_F$	—	—	1.5	V
Reverse Current	$V_R = 5 \text{ V}$	$I_R$	—	—	10	$\mu\text{A}$
Radiant Intensity QEC112	$I_F = 100 \text{ mA}$ , $t_p = 20 \text{ ms}$	$I_E$	6	—	30	mW/sr
Radiant Intensity QEC113	$I_F = 100 \text{ mA}$ , $t_p = 20 \text{ ms}$	$I_E$	14	—	—	mW/sr
Rise Time	$I_F = 100 \text{ mA}$	$t_r$	—	1000	—	ns
Fall Time		$t_f$	—	1000	—	ns

**QEC112**

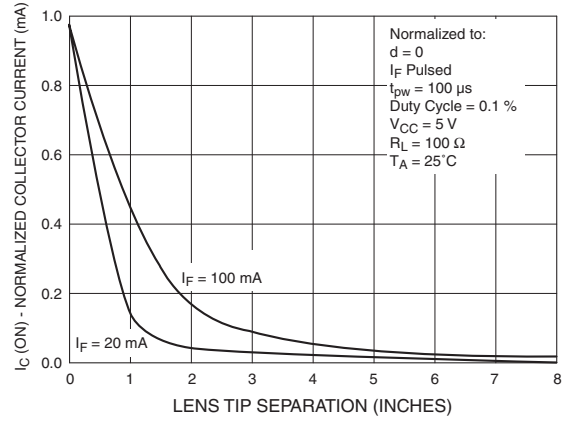
**QEC113**

**TYPICAL PERFORMANCE CURVES**

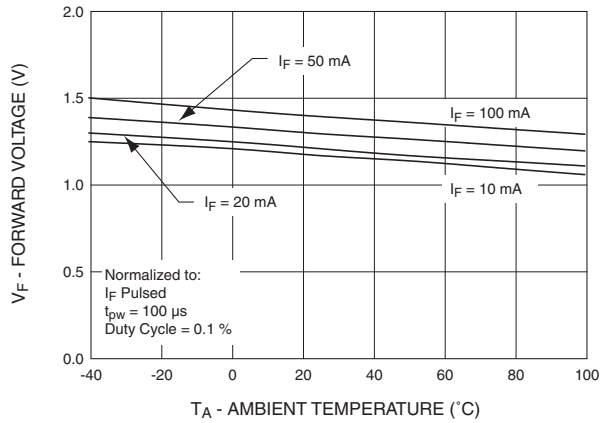
**Fig.1 Normalized Radiant Intensity vs. Forward Current**



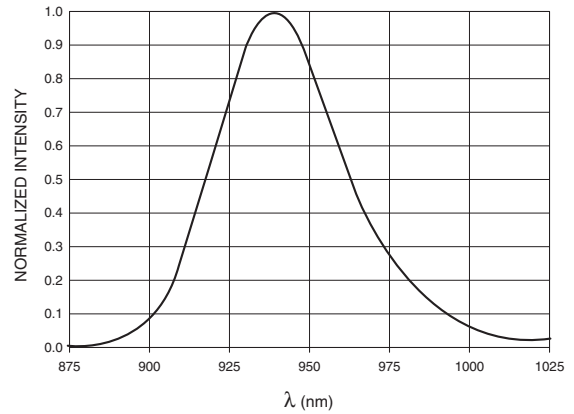
**Fig.2 Coupling Characteristics of QEC11X And QSC11X**



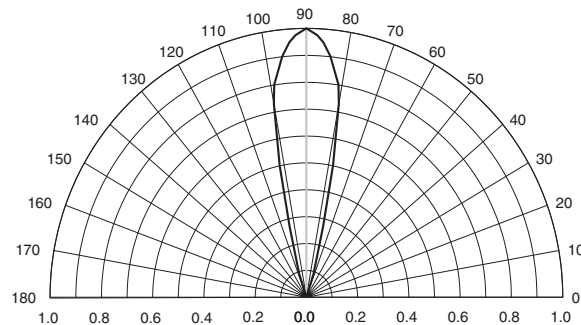
**Fig.3 Forward Voltage vs. Ambient Temperature**



**Fig. 4 Normalized Intensity vs. Wavelength**



**Fig. 5 Radiation Diagram**



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**QEC112**

**QEC113**

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