

QEC112, QEC113 Plastic Infrared Light Emitting Diode

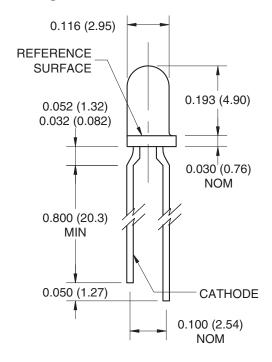
Features

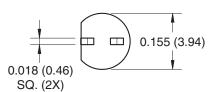
- $\lambda = 940 \text{ nm}$
- Chip material = GaAs
- Package type: T-1 (3 mm)
- Can be used with QSCXXX Photosensor
- Narrow Emission Angle, 24°
- High Output Power
- Package material and color: Clear, peach tinted plastic

Description

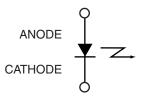
The QEC11X is an 940 nm GaAs LED encapsulated in a clear peach tinted, plastic T-1 package.

Package Dimensions





Schematic



Notes:

- 1. Dimensions of all drawings are in inches (mm).
- 2. Tolerance is ± 0.10 (.25) on all non-nominal dimensions unless otherwise specified.

Absolute Maximum Ratings (T_A = 25°C unless otherwise specified)

Parameter	Symbol	Rating	Units
Operating Temperature	T _{OPR}	-40 to +100	°C
Storage Temperature	T _{STG}	-40 to +100	°C
Soldering Temperature (Iron) ^(2,3,4)	T _{SOL-I}	240 for 5 sec	°C
Soldering Temperature (Flow) ^(2,3)	T _{SOL-F}	260 for 10 sec	°C
Continuous Forward Current	I _F	50	mA
Reverse Voltage	V _R	5	V
Power Dissipation ⁽¹⁾	P _D	100	mW

- 1. Derate power dissipation linearly 1.33 mW/°C above 25°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 $(T_A = 25^{\circ}C)$

Parameter Test Conditions		Symbol	Min	Тур	Max	Units
Peak Emission Wavelength	I _F = 100 mA	λ _{PE}	-	940	-	nm
Emission Angle	I _F = 100 mA	2⊖ ¹ /2	-	24	-	Deg.
Forward Voltage	$I_F = 100 \text{ mA}, \text{ tp} = 20 \text{ ms}$	V _F	-	-	1.5	V
Reverse Current	V _R = 5 V	I _R	-	-	10	μA
Radiant Intensity QEC112	I _F = 100 mA, tp = 20 ms	Ι _Ε	6	-	30	mW/sr
Radiant Intensity QEC113	I _F = 100 mA, tp = 20 ms	I _E	14	-	-	mW/sr
Rise Time	I _F = 100 mA	t _r	-	1000	-	ns
Fall Time		t _f	-	1000	-	ns

Typical Performance Curves

Fig. 1 Normalized Radiant Intensity vs. Forward Current

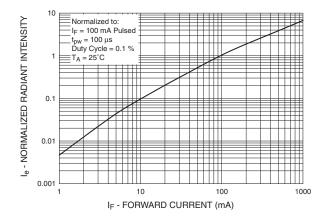


Fig. 2 Coupling Characteristics of QEC11X And QSC11X

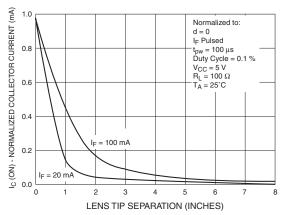


Fig. 3 Forward Voltage vs. Ambient Temperature

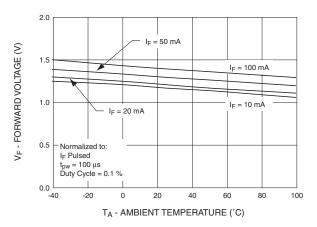


Fig. 4 Normalized Intensity vs. Wavelength

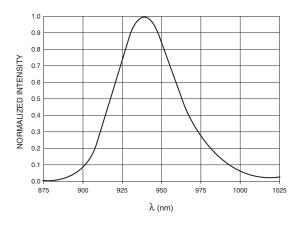
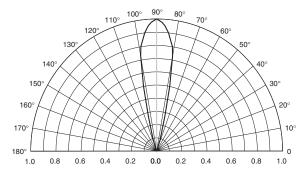


Fig. 5 Radiation Diagram



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