

# Plastic Infrared Light Emitting Diode

## QEE122, QEE123

### Description

The QEE12X is a 880 nm AlGaAs LED encapsulated in a medium wide angle, plastic sidelooker package.

### Features

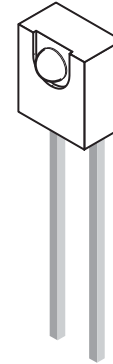
- $\lambda = 880 \text{ nm}$
- Package Type = Sidelooker
- Chip Material = AlGaAs
- Matched Photosensor: QSE113
- Medium Wide Emission Angle,  $50^\circ$
- Package Material: Clear Epoxy
- High Output Power
- Orange Dot Marking on the Top Side
- This is a Pb-Free Device

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

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

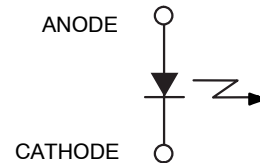
Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

1. Derate power dissipation linearly  $2.67 \text{ mW}/^\circ\text{C}$  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" (1.6 mm) minimum from housing.



SIDELOOKER EMITTER  
CASE 100CJ

### SCHEMATIC



### ORDERING INFORMATION

Device	Package	Shipping
QEE122	SIDELOOKER EMITTER (Pb-Free)	500 units / Bulk Bag
QEE123	SIDELOOKER EMITTER (Pb-Free)	500 units / Bulk Bag

## QEE122, QEE123

### ELECTRICAL / OPTICAL CHARACTERISTICS (T<sub>A</sub> = 25°C unless otherwise noted)

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
$\lambda_{PE}$	Peak Emission Wavelength	I <sub>F</sub> = 20 mA	–	890	–	nm
TC <sub>λ</sub>	Temperature Coefficient		–	0.2	–	nm/°C
2θ <sup>1/2</sup>	Emission Angle	I <sub>F</sub> = 100 mA	–	50	–	°
V <sub>F</sub>	Forward Voltage	I <sub>F</sub> = 100 mA, t <sub>p</sub> = 20 ms	–	–	1.7	V
TC <sub>V<sub>F</sub></sub>	Temperature Coefficient		–	–6	–	mV/°C
I <sub>R</sub>	Reverse Current	V <sub>R</sub> = 5 V	–	–	10	μA
I <sub>E</sub>	Radiant Intensity QEE122	I <sub>F</sub> = 100 mA, t <sub>p</sub> = 20 ms	4	9	16	mW/sr
	Radiant Intensity QEE123		8	9	–	
TC <sub>I<sub>E</sub></sub>	Temperature Coefficient		–	–0.3	–	%/°C
t <sub>r</sub>	Rise Time	I <sub>F</sub> = 100 mA	–	900	–	ns
t <sub>f</sub>	Fall Time		–	800	–	ns
C <sub>j</sub>	Junction Capacitance	V <sub>R</sub> = 0 V	–	11	–	pF

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

TYPICAL PERFORMANCE CHARACTERISTICS

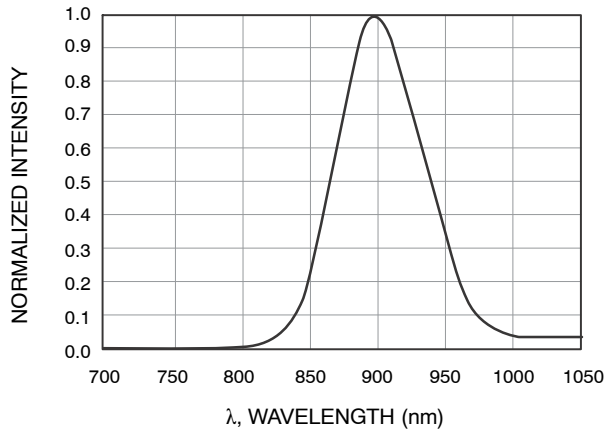


Figure 1. Normalized Intensity vs. Wavelength

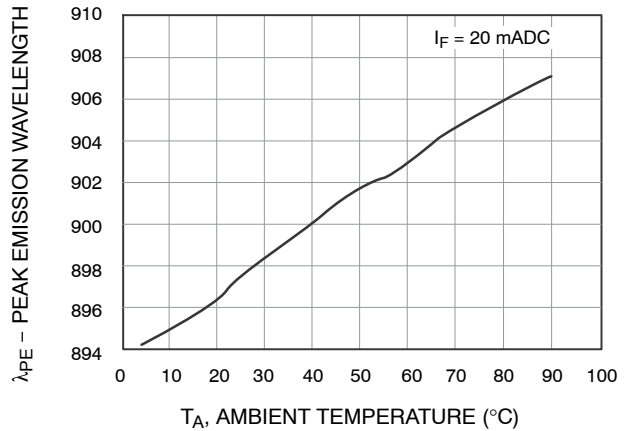


Figure 2. Peak Wavelength vs. Ambient Temperature

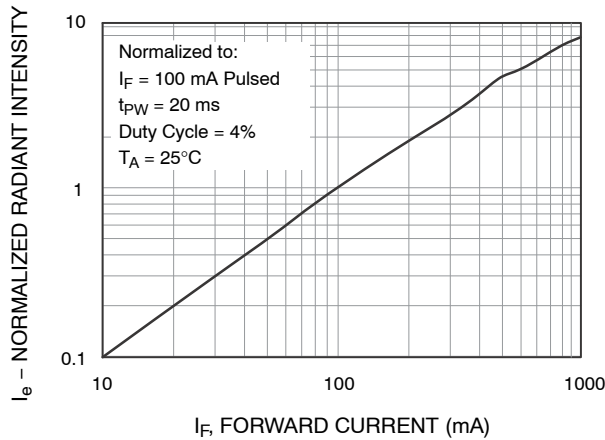


Figure 3. Normalized Radiant Intensity vs. Forward Current

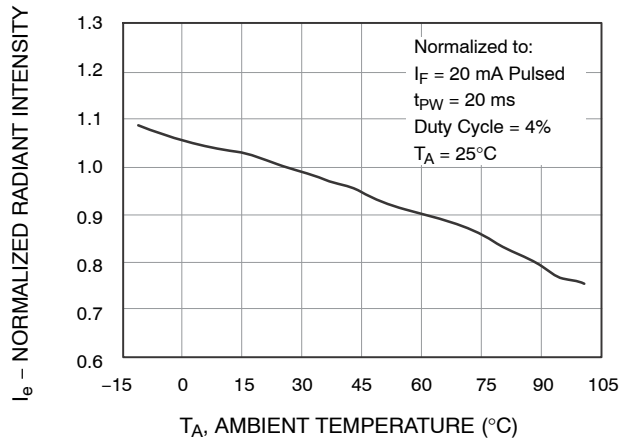


Figure 4. Normalized Radiant Intensity vs. Ambient Temperature

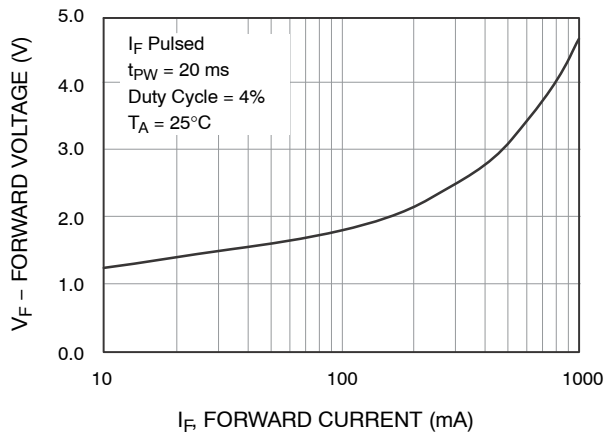


Figure 5. Forward Voltage vs. Forward Current

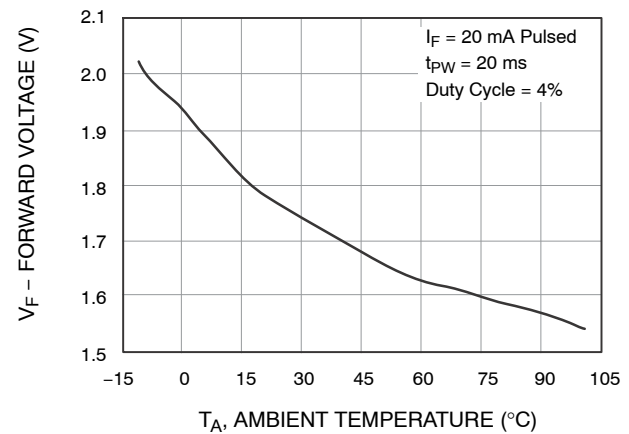


Figure 6. Forward Voltage vs. Ambient Temperature

TYPICAL PERFORMANCE CHARACTERISTICS (continued)

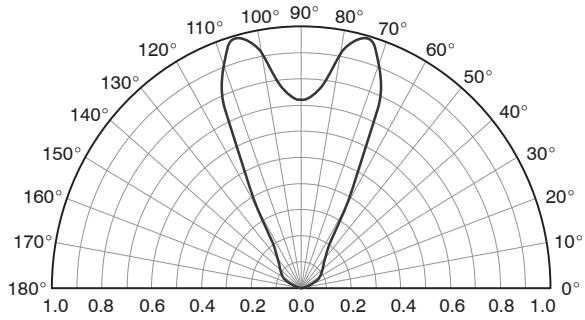


Figure 7. Radiation Diagram

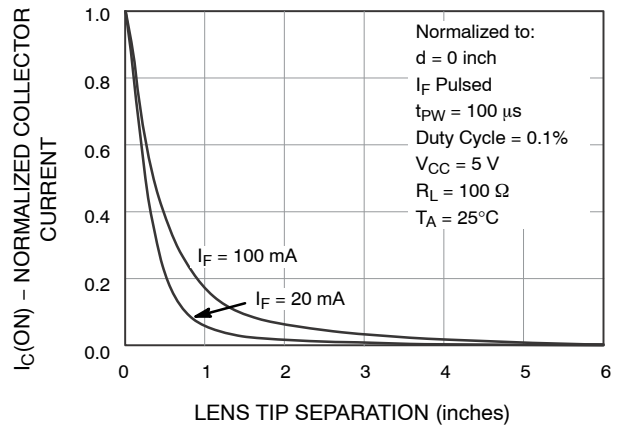
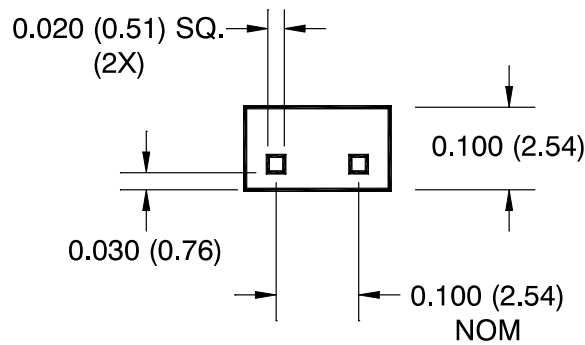
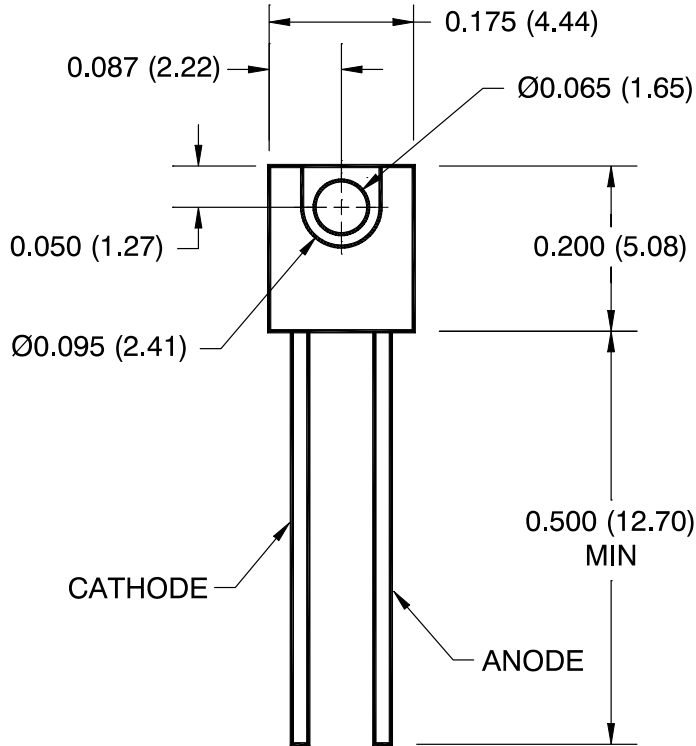


Figure 8. Coupling Characteristics of QEE122 and QEE123

**SIDELOOKER EMITTER**  
CASE 100CJ  
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DATE 30 NOV 2016



**Notes:**

1. Dimensions for all drawings are in inches (mm).
2. Tolerance of  $\pm 0.010$  (0.25) on all non-nominal dimensions unless otherwise specified.

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