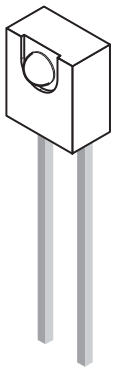
Plastic Infrared Light Emitting Diode

QEE122, QEE123



SIDELOOKER EMITTER
CASE 100CJ

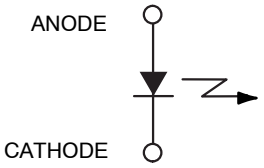
Description

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

Features

- λ = 880 nm
- Package Type = Sidelooker
- Chip Material = AlGaAs
- Matched Photosensor: QSE113
- Medium Wide Emission Angle, 50°
- Package Material: Clear Epoxy
- High Output Power
- Orange Dot Marking on the Top Side
- This is a Pb−Free Device

SCHEMATIC



ABSOLUTE MAXIMUM RATINGS (T_A = 25°C unless otherwise noted)

Symbol	Parameter	Value	Unit
T_{OPR}	Operating Temperature	−40 to +100	°C
T_{STG}	Storage Temperature	−40 to +100	°C
T_{SOL-I}	Soldering Temperature (Iron) (Note 2), (Note 3), (Note 4)	240 for 5 s	°C
T_{SOL-F}	Soldering Temperature (Flow) (Note 2), (Note 3)	260 for 10 s	°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 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” (1.6 mm) minimum from housing.

ORDERING INFORMATION

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

ELECTRICAL / OPTICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted)

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
λ_{PE}	Peak Emission Wavelength	I_F = 20 mA	–	890	–	nm
TC_λ	Temperature Coefficient		–	0.2	–	nm/°C
$2\Theta^1/2$	Emission Angle	I_F = 100 mA	–	50	–	°
V_F	Forward Voltage	I_F = 100 mA, tp = 20 ms	–	–	1.7	V
TC_{VF}	Temperature Coefficient		–	–6	–	mV/°C
I_R	Reverse Current	V_R = 5 V	–	–	10	μA
I_E	Radiant Intensity QEE122	I_F = 100 mA, tp = 20 ms	4	9	16	mW/sr
	Radiant Intensity QEE123		8	9	–	
TC_{IE}	Temperature Coefficient		–	–0.3	–	%/°C
t_r	Rise Time	I_F = 100 mA	–	900	–	ns
t_f	Fall Time		–	800	–	ns
C_j	Junction Capacitance	V_R = 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

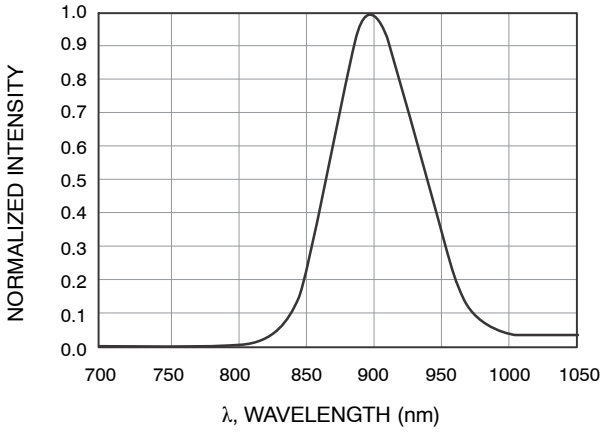


Figure 1. Normalized Intensity vs. Wavelength

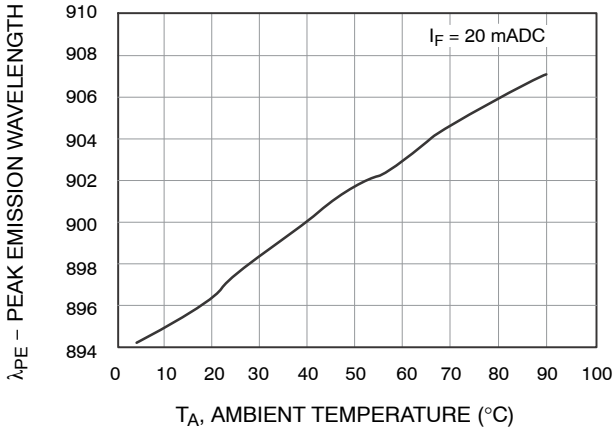


Figure 2. Peak Wavelength vs. Ambient Temperature

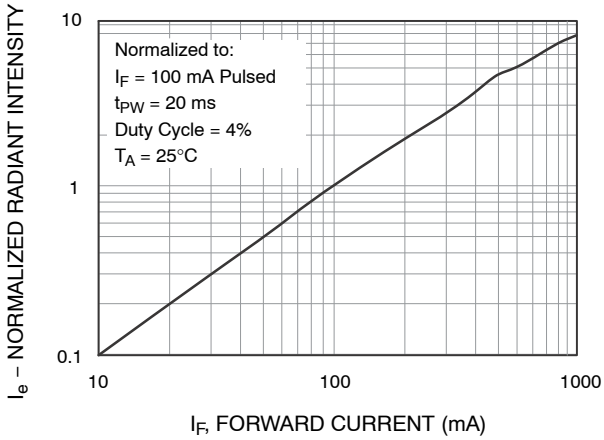


Figure 3. Normalized Radiant Intensity vs. Forward Current

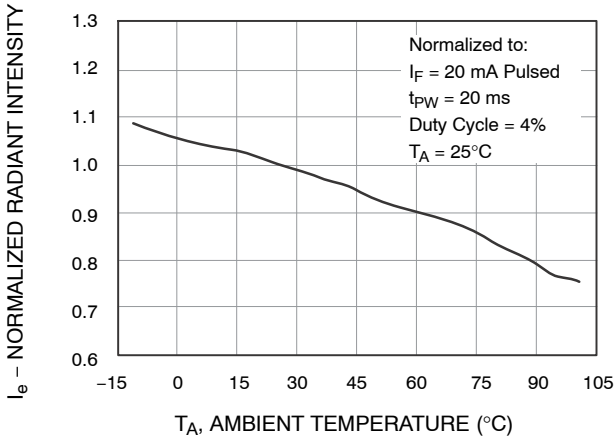


Figure 4. Normalized Radiant Intensity vs. Ambient Temperature

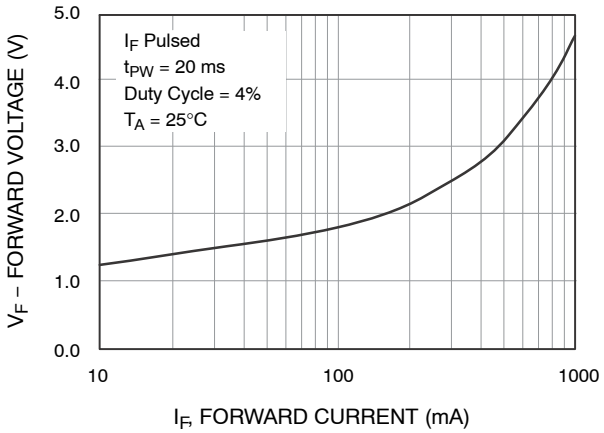


Figure 5. Forward Voltage vs. Forward Current

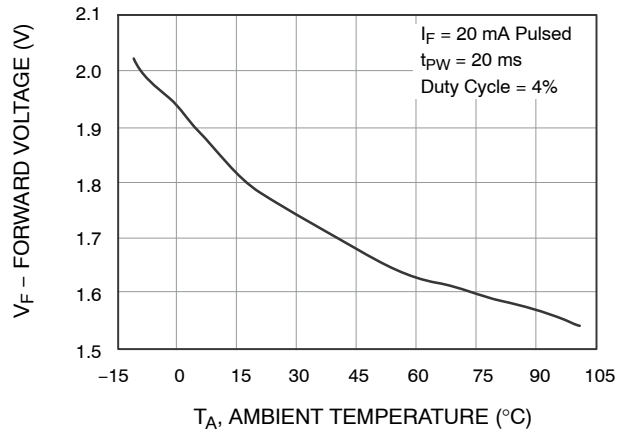


Figure 6. Forward Voltage vs. Ambient Temperature

TYPICAL PERFORMANCE CHARACTERISTICS (continued)

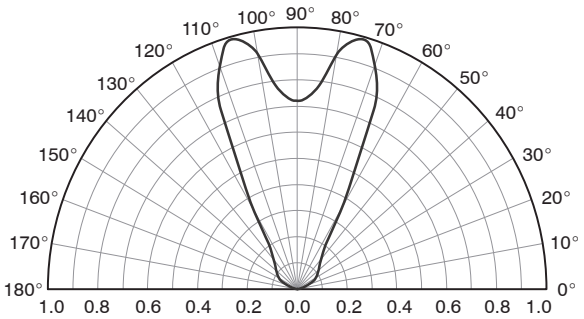


Figure 7. Radiation Diagram

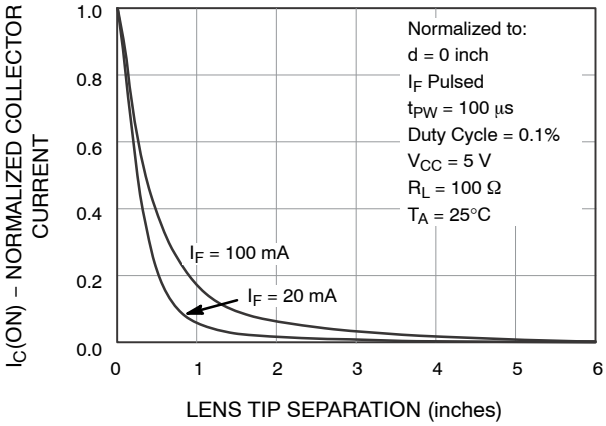


Figure 8. Coupling Characteristics of QEE122 and QSE113

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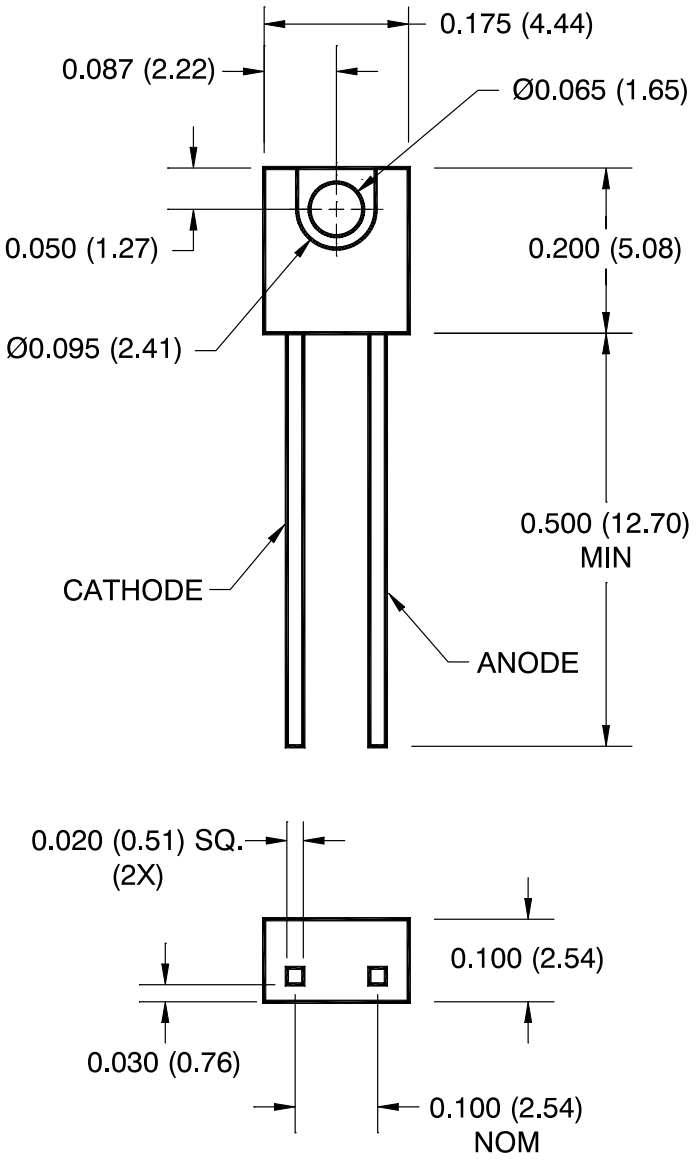

Notes:

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

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