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May 2015

QEE122 / QEE123
Plastic Infrared Light Emitting Diode

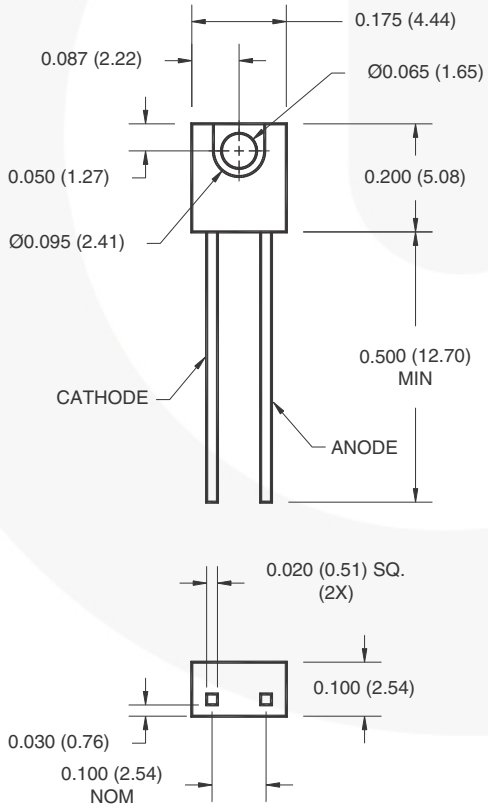
Features

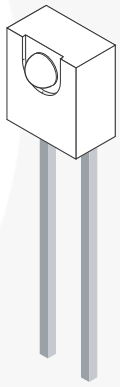
- λ = 880 nm
- Package Type = Sidelooker
- Chip Material = AlGaAs
- Matched Photosensor: QSE113
- Medium Wide Emission Angle, 50°
- Package Material: Clear Epoxy
- High Output Power
- Orange dot marking on the top side

Description

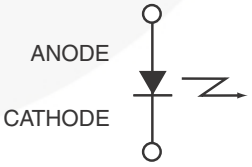
The QEE12X is a 880 nm AlGaAs LED encapsulated in a medium wide angle, plastic sidelooker package.

Package Dimensions(1, 2)





Schematic



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.

Absolute Maximum Ratings

Stresses exceeding the absolute maximum ratings may damage the device. The device may not function or be operable above the recommended operating conditions and stressing the parts to these levels is not recommended. In addition, extended exposure to stresses above the recommended operating conditions may affect device reliability. The absolute maximum ratings are stress ratings only. Values are at 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)(4, 5, 6)	240 for 5 sec	°C
T_{SOL-F}	Soldering Temperature (Flow)(4, 5)	260 for 10 sec	°C
I_F	Continuous Forward Current	100	mA
V_R	Reverse Voltage	5	V
P_D	Power Dissipation(3)	100	mW

Notes:

3. Derate power dissipation linearly 2.67 mW/°C above 25°C.
4. RMA flux is recommended.
5. Methanol or isopropyl alcohols are recommended as cleaning agents.
6. Soldering iron 1/16" (1.6mm) minimum from housing.

Electrical / Optical Characteristics

Values are at 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

Typical Performance Characteristics

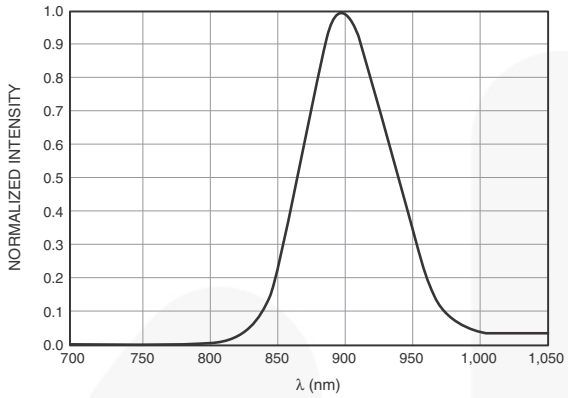


Figure 1. Normalized Intensity vs. Wavelength

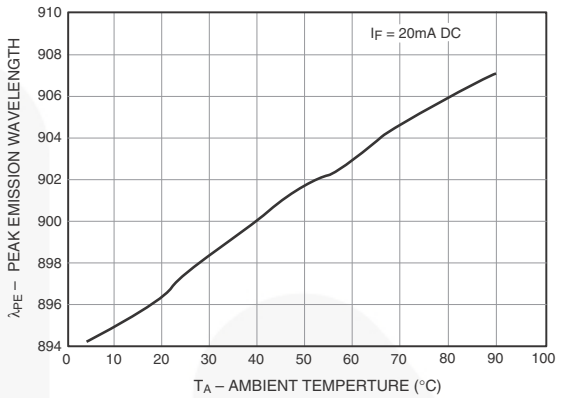


Figure 2. Peak Wavelength vs. Ambient Temperature

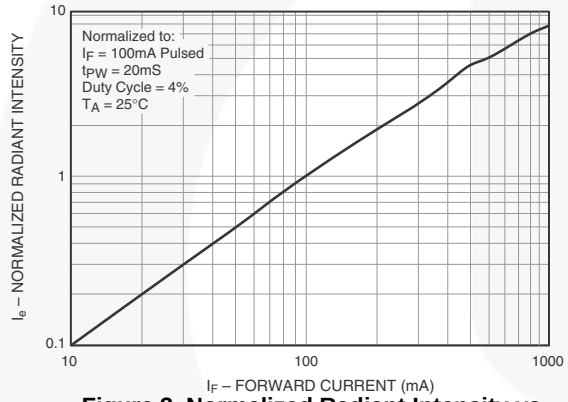


Figure 3. Normalized Radiant Intensity vs. Forward Current

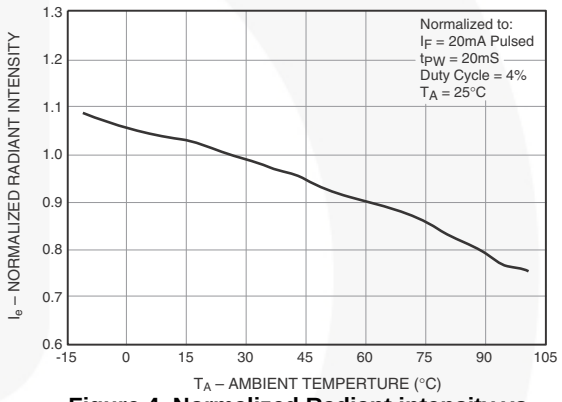


Figure 4. Normalized Radiant intensity vs. Ambient Temperature

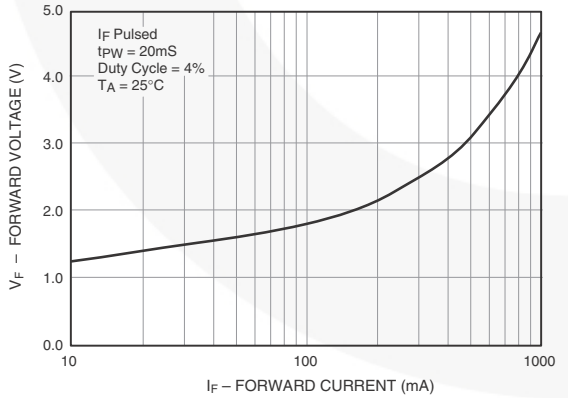


Figure 5. Forward Voltage vs. Forward Current

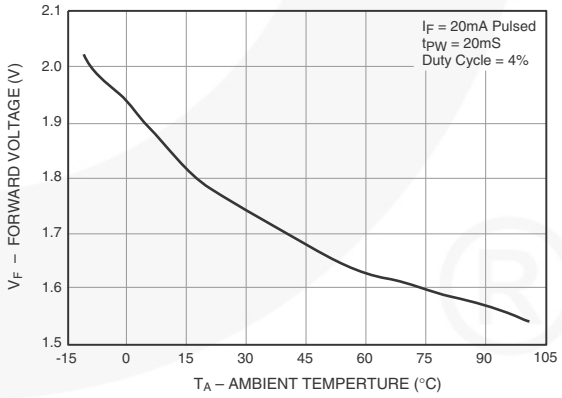


Figure 6. Forward Voltage vs. Ambient Temperature

Typical Performance Characteristics (Continued)

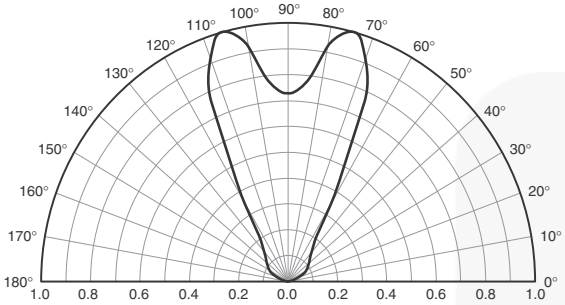


Figure 7. Radiation Diagram

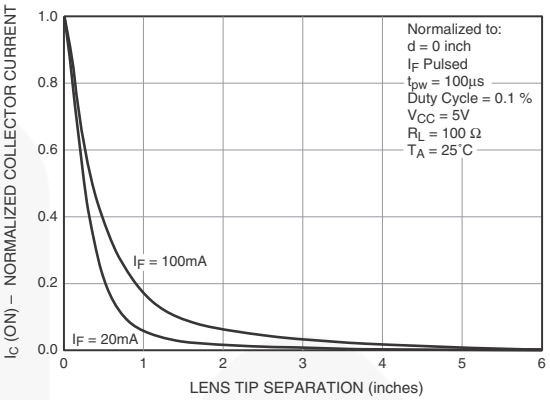


Figure 8. Coupling Characteristics of QEE122 and QSE113

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Rev. I74

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