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FAIRCHILD SEMICONDUCTOR®

October 2009

QEE273
Plastic Infrared Light Emitting Diode

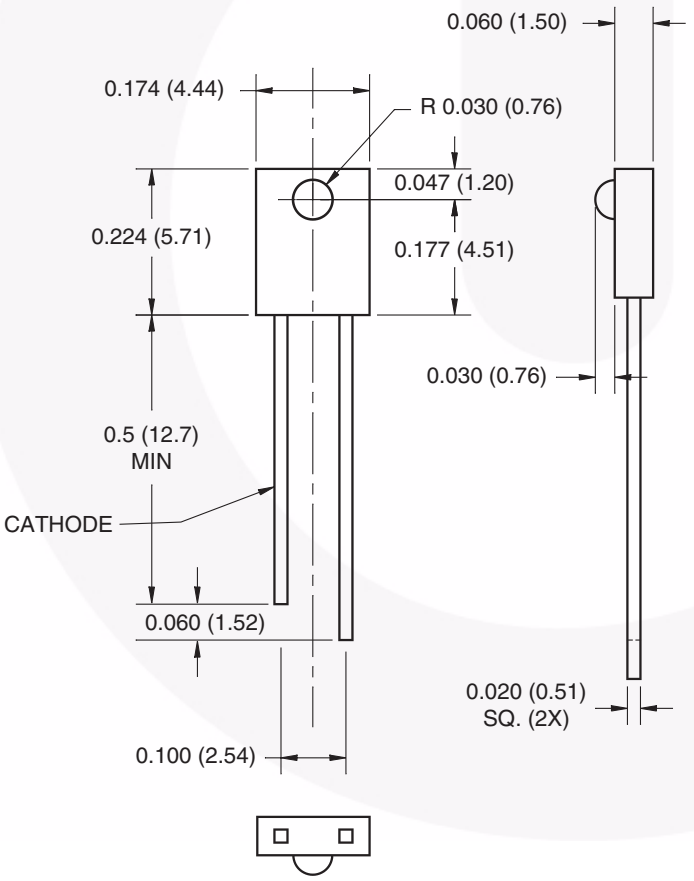
Features

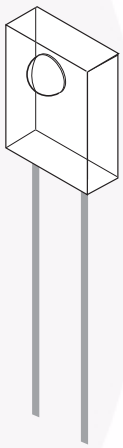
- λ= 850nm
- Package Type = Sidelooker
- Chip Material = AlGaAs
- Matched Photosensor: QSE213 and QSE243
- Medium Wide Emission Angle, 30°
- Package Material: Clear Epoxy
- High Output Power

Description

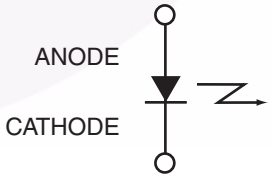
The QEE273 is an 850nm AlGaAs LED encapsulated in a medium wide angle, thin plastic sidelooker package.

Package Dimensions





Schematic



Notes:

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

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

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.

Symbol	Parameter	Rating	Units
T_{OPR}	Operating Temperature	-40 to +100	°C
T_{STG}	Storage Temperature	-40 to +100	°C
T_{SOL-I}	Soldering Temperature (Iron)[2,3,4]	240 for 5 sec	°C
T_{SOL-F}	Soldering Temperature (Flow)[2,3]	260 for 10 sec	°C
I_F	Continuous Forward Current	50	mA
V_R	Reverse Voltage	5	V
P_D	Power Dissipation[1]	100	mW

Notes:

1. Derate power dissipation linearly 1.33mW/°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°C)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Units
λ_{PE}	Peak Emission Wavelength	I_F = 20mA		850		nm
TC_λ	Temperature Coefficient			0.2		nm / °C
$2\Theta 1/2$	Emission Angle	I_F = 100mA		30		°
V_F	Forward Voltage	I_F = 100mA, tp = 20ms			1.8	V
TC_{VF}	Temperature Coefficient			-1		mV / °C
I_R	Reverse Current	V_R = 5V			10	µA
I_E	Radiant Intensity	I_F = 100mA, tp = 20ms	18	27	36	mW/sr
TC_{IE}	Temperature Coefficient			-0.33		% / °C
t_r	Rise Time	I_F = 100mA		11		ns
t_f	Fall Time			12		ns
C_j	Junction Capacitance	V_R = 0V		22		pF

Typical Performance Curves

Fig. 1 Normalized Intensity vs. Wavelength

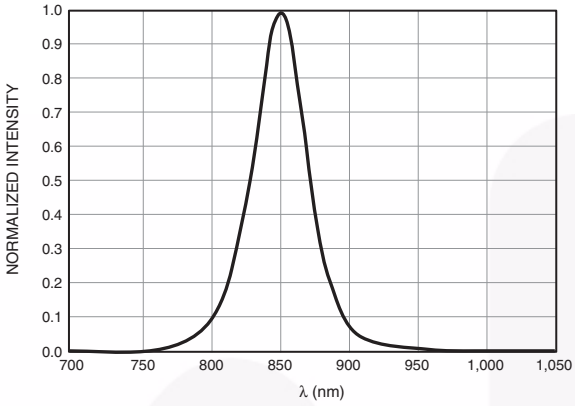


Fig. 2 Peak Wavelength vs. Ambient Temperature

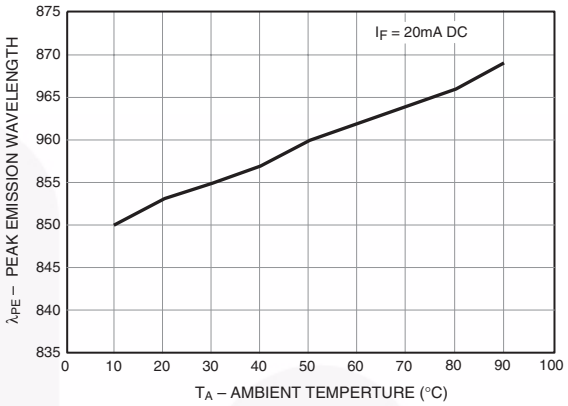


Fig. 3 Relative Power vs. Forward Current

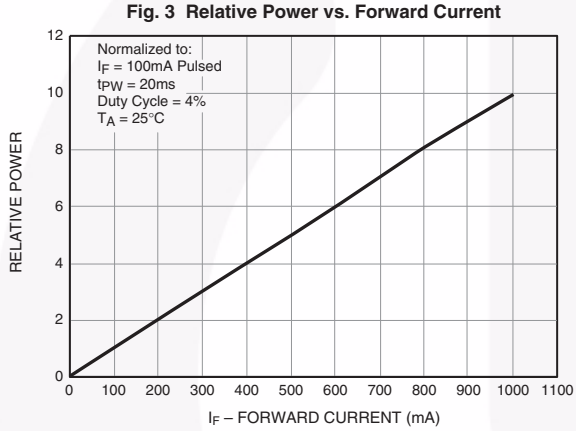


Fig. 4 Relative Power vs. Ambient Temperature

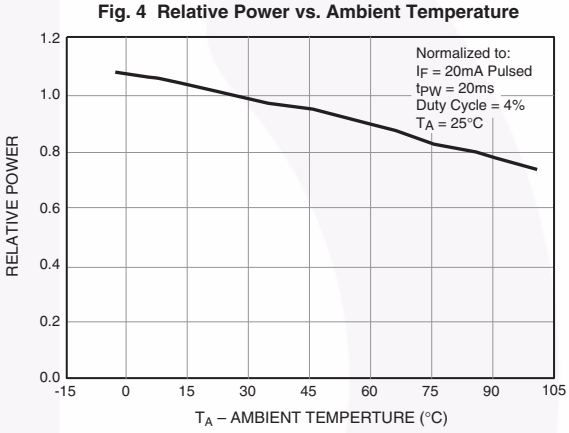


Fig. 5 Forward Voltage vs. Ambient Temperature

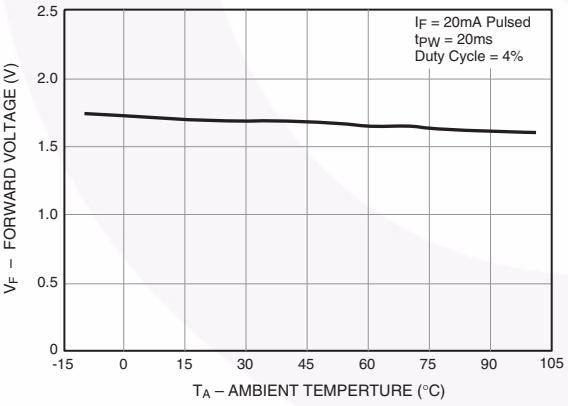
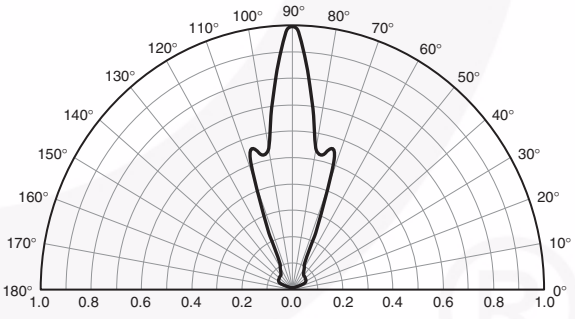


Fig. 6 Radiation Diagram



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