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QED234
Plastic Infrared Light Emitting Diode

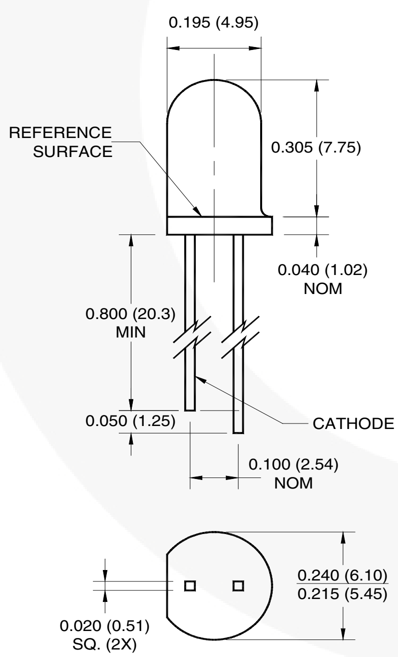
Features

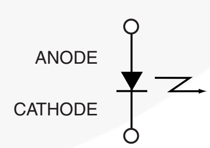
- λ= 940 nm
- Chip Material =GaAs with AlGaAs Window
- Package Type: T-1 3/4 (5 mm lens diameter)
- Matched Photosensor: QSD123/124
- Medium Emission Angle, 40°
- High Output Power
- Package Material and Color: Clear, Untinted, Plastic
- Ideal for Remote Control Applications

Description

The QED234 is a 940 nm GaAs / AlGaAs LED encapsulated in a clear untinted, plastic T-1 3/4 package.

Package Dimensions(1, 2)





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)	200	mW
I_{FP}	Peak Forward Current	1.5	A

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.
7. Pulse conditions; tp = 100 µs, T = 10 ms

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		940		nm
-	Spectral Bandwidth	I_F = 20 mA	50			nm
TC_λ	Temp. Coefficient of λ_{PE}	I_F = 100 mA		0.2		nm/K
$2\Theta_{1/2}$	Emission Angle	I_F = 100 mA		40		°
V_F	Forward Voltage	I_F = 100 mA, tp = 20 ms			1.6	V
TC_v	Temp. Coefficient of V_F	I_F = 100 mA		-1.5		mV/K
I_R	Reverse Current	V_R = 5 V			10	µA
I_E	Radiant Intensity	I_F = 100 mA, tp = 20 ms	27			mW/sr
TC_I	Temp. Coefficient of IE	I_F = 20 mA		-0.6		%/K
t_r	Rise Time	I_F = 100 mA		1000		ns
t_f	Fall Time			1000		ns

Typical Performance Characteristics

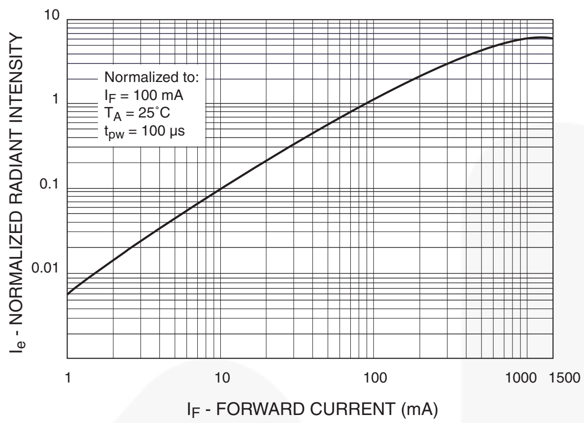


Figure 1. Normalized Radiant Intensity vs. Forward Current

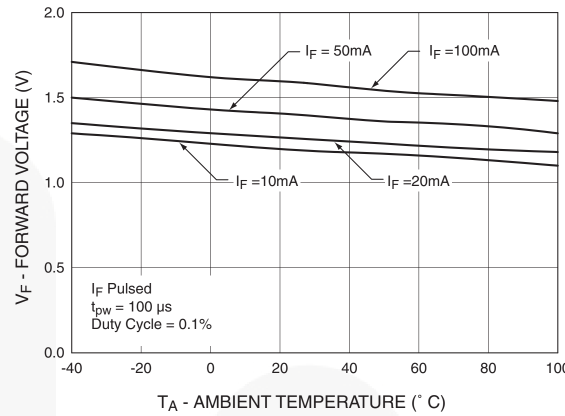


Figure 2. Forward Voltage vs. Ambient Temperature

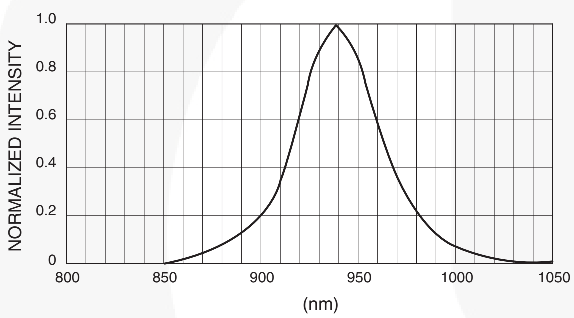


Figure 3. Normalized Radiant Intensity vs. Wavelength

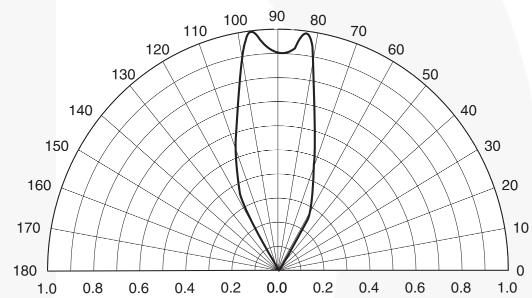


Figure 4. Radiant Diagram

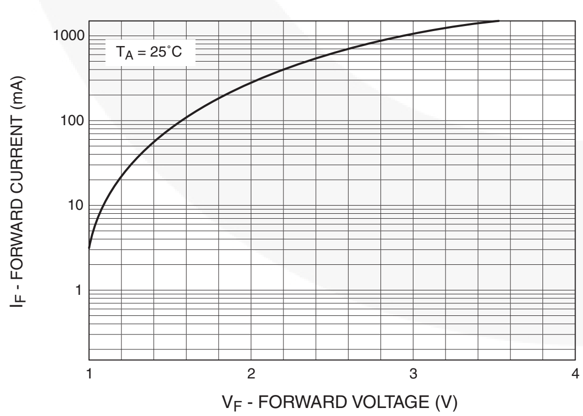


Figure 5. Forward Current vs. Forward Voltage

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