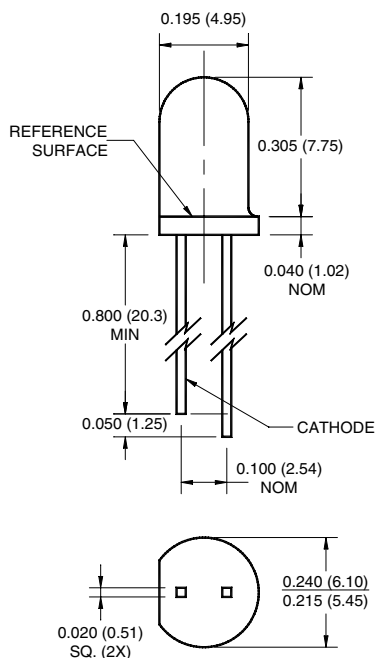


**QED233**

**QED234**

**PACKAGE DIMENSIONS**

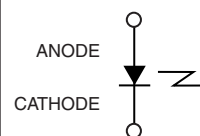


**NOTES:**

1. Dimensions for all drawings are in inches (mm).
2. Tolerance of  $\pm .010$  (.25) on all non-nominal dimensions unless otherwise specified.



**SCHEMATIC**



**DESCRIPTION**

The QED233 / QED234 is a 940 nm GaAs / AlGaAs LED encapsulated in a clear untinted, plastic T-1 3/4 package.

**FEATURES**

- $\lambda = 940$  nm
- Chip material = GaAs with AlGaAs window
- Package type: T-1 3/4 (5mm lens diameter)
- Matched Photosensor: QSD122/123/124
- Medium Emission Angle, 40°
- High Output Power
- Package material and color: Clear, untinted, plastic
- Ideal for remote control applications

## QED233

## QED234

### ABSOLUTE MAXIMUM RATINGS (T<sub>A</sub> = 25°C unless otherwise specified)

| Parameter                                       | Symbol             | Rating         | Unit |
|-------------------------------------------------|--------------------|----------------|------|
| Operating Temperature                           | T <sub>OPR</sub>   | -40 to +100    | °C   |
| Storage Temperature                             | T <sub>STG</sub>   | -40 to +100    | °C   |
| Soldering Temperature (Iron) <sup>(2,3,4)</sup> | T <sub>SOL-I</sub> | 240 for 5 sec  | °C   |
| Soldering Temperature (Flow) <sup>(2,3)</sup>   | T <sub>SOL-F</sub> | 260 for 10 sec | °C   |
| Continuous Forward Current                      | I <sub>F</sub>     | 100            | mA   |
| Reverse Voltage                                 | V <sub>R</sub>     | 5              | V    |
| Power Dissipation <sup>(1)</sup>                | P <sub>D</sub>     | 200            | mW   |
| Peak Forward Current                            | I <sub>FP</sub>    | 1.5            | A    |

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" (1.6mm) minimum from housing.
5. Pulse conditions; tp = 100 μs, T = 10 ms.

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

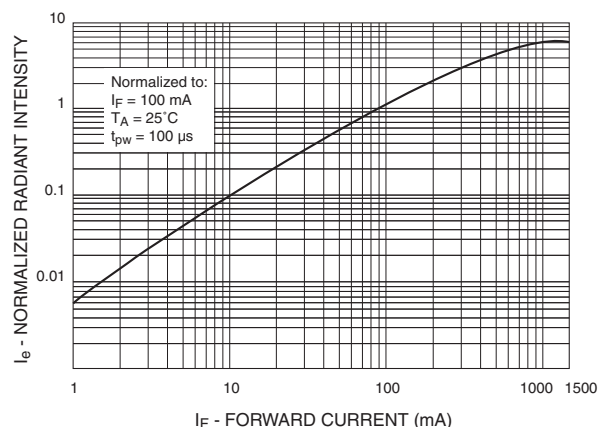
| PARAMETER                            | TEST CONDITIONS                     | DEVICE | SYMBOL            | MIN | TYP  | MAX | UNITS |
|--------------------------------------|-------------------------------------|--------|-------------------|-----|------|-----|-------|
| Peak Emission Wavelength             | I <sub>F</sub> = 20 mA              | ALL    | λ <sub>PE</sub>   | —   | 940  | —   | nm    |
| Spectral Bandwidth                   | I <sub>F</sub> = 20 mA              | ALL    | —                 | 50  | —    | nm  |       |
| Temp. Coefficient of λ <sub>PE</sub> | I <sub>F</sub> = 100 mA             | ALL    | TC <sub>λ</sub>   | —   | 0.2  | —   | nm/K  |
| Emission Angle                       | I <sub>F</sub> = 100 mA             | ALL    | 2θ <sub>1/2</sub> | —   | 40   | —   | Deg.  |
| Forward Voltage                      | I <sub>F</sub> = 100 mA, tp = 20 ms | ALL    | V <sub>F</sub>    | —   | —    | 1.6 | V     |
| Temp. Coefficient of V <sub>F</sub>  | I <sub>F</sub> = 100 mA             | ALL    | TC <sub>V</sub>   | —   | -1.5 | —   | mV/K  |
| Reverse Current                      | V <sub>R</sub> = 5 V                | ALL    | I <sub>R</sub>    | —   | —    | 10  | μA    |
| Radiant Intensity                    | I <sub>F</sub> = 100 mA, tp = 20 ms | QED233 | I <sub>E</sub>    | 10  | —    | 50  | mW/sr |
|                                      |                                     | QED234 |                   | 27  | —    | —   |       |
| Temp. Coefficient of I <sub>E</sub>  | I <sub>F</sub> = 20 mA              | ALL    | TC <sub>I</sub>   | —   | -0.6 | —   | %/K   |
| Rise Time                            | I <sub>F</sub> = 100 mA             | ALL    | t <sub>r</sub>    | —   | 1000 | —   | ns    |
| Fall Time                            |                                     | ALL    | t <sub>f</sub>    | —   | 1000 | —   |       |

**QED233**

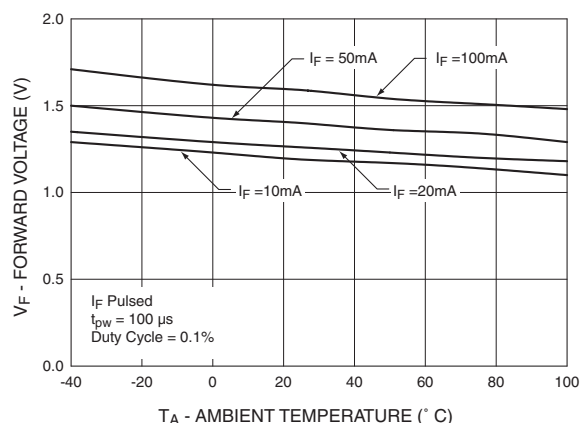
**QED234**

**TYPICAL PERFORMANCE CURVES TBD**

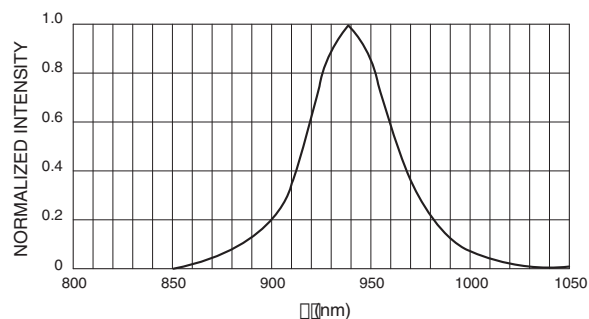
**Fig. 1 Normalized Radiant Intensity vs. Forward Current**



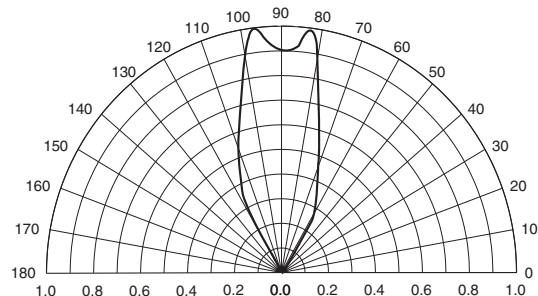
**Fig. 2 Forward Voltage Vs. Ambient Temperature**



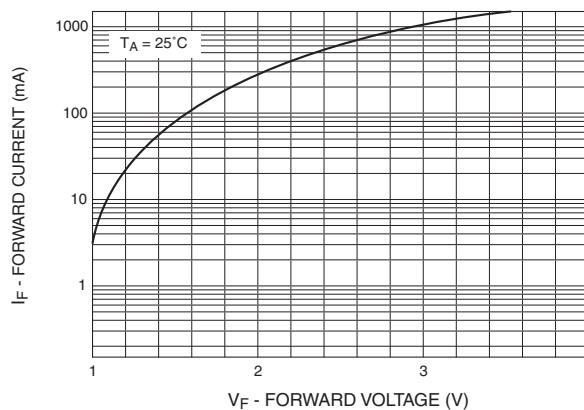
**Fig. 3 Normalized Radiant Intensity vs. Wavelength**



**Fig. 4 Radiation Diagram**



**Fig. 5 Forward Current vs. Forward Voltage**



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**QED233**

**QED234**

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2. A critical component in any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.