

## **QEE213**

# **Plastic Infrared Light Emitting Diode**

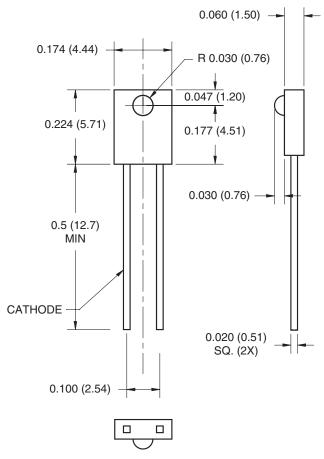
### **Features**

- Wavelength = 940 nm, GaAs
- Package Type: Sidelooker
- Medium Beam Angle, 50°
- Clear Plastic Package
- Matched Photosensors: QSE213 and QSE243

## **Description**

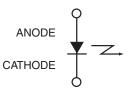
The QEE213 is a 940nm GaAs LED encapsulated in a medium angle, thin plastic sidelooker package.

## **Package Dimensions**





### **Schematic**



### NOTES:

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

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# **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    |
| Peak Forward Current <sup>(5)</sup>             | I <sub>FP</sub>    | 1              | A    |
| Power Dissipation <sup>(1)</sup>                | P <sub>D</sub>     | 100            | mW   |

# **Electrical/Optical Characteristics** $(T_A = 25^{\circ}C)$

| Parameter                | Test Conditions                             | Symbol         | Min | Тур | Max | Units |
|--------------------------|---|----------------|-----|-----|-----|-------|
| Peak Emission Wavelength | I <sub>F</sub> = 100 mA                     | Ι <sub>P</sub> | _   | 940 | _   | nm    |
| Emission Angle           | I <sub>F</sub> = 100 mA                     | U              | _   | ±25 | _   | Deg.  |
| Forward Voltage          | $I_F = 100 \text{ mA}, t_p = 20 \text{ ms}$ | V <sub>F</sub> | _   | _   | 1.5 | V     |
| Reverse Current          | V <sub>R</sub> = 5 V                        | I <sub>R</sub> | _   | _   | 10  | μΑ    |
| Radiant Intensity        | $I_F = 100 \text{ mA}, t_p = 20 \text{ ms}$ | I <sub>e</sub> | 2   | _   | _   | mW/sr |
| Rise Time                | I <sub>F</sub> = 100 mA                     | t <sub>r</sub> | _   | 1   | _   | μs    |
| Fall Time                | tp = 100 μs, T = 10 mS                      | t <sub>f</sub> | _   | 1   | _   |       |

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### Notes

- 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.
- 5. Pulse conditions: tp = 100  $\mu$ s, T = 10 ms.

## **Typical Performance Curves**

Fig. 1 Forward Current vs. Forward Voltage

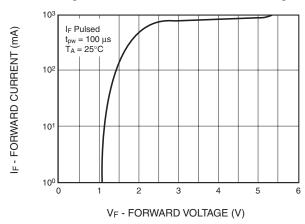
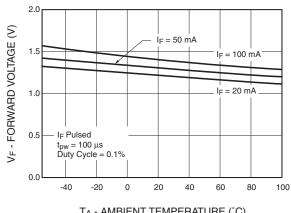
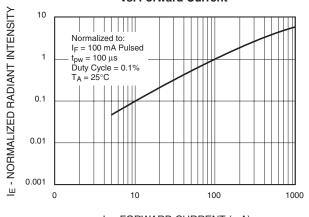


Fig. 2 Forward Voltage vs. Ambient Temperature



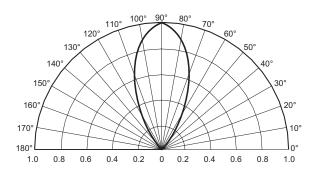
TA - AMBIENT TEMPERATURE (°C)

Fig. 3 Normalized Radiant Intensity vs. Forward Current



IF - FORWARD CURRENT (mA)

Fig. 4 Radiation Diagram



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| DOME™  | GTO™ .                         | MicroPak™  | QFET®  | SuperSOT™-8                  |
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