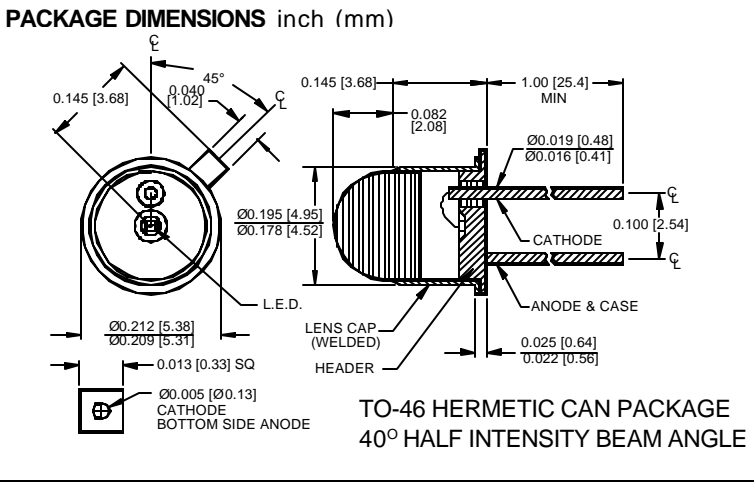
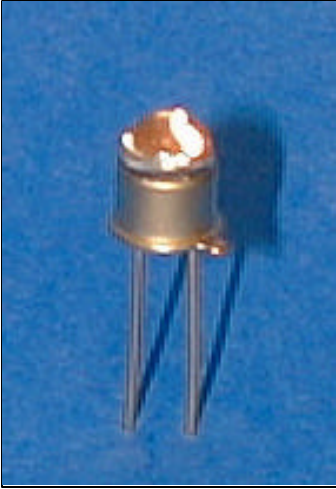


# PHOTONIC DETECTORS INC.

## High-Power GaAs Infrared Emitters Peak Wavelength 940 nm, Type PDI-E902



### FEATURES

- Hermetically sealed
- High reliability
- Medium emission angle

**DESCRIPTION:** The PDI-E902 infrared emitting diode uses high reliability liquid phase epitaxially grown GaAs. Optimized for high power, high efficiency. This 940 nm emitter is packaged in a TO-46 header with a glass lens cap.

### APPLICATIONS

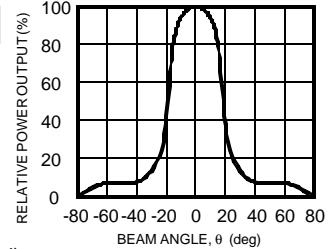
- Photo interrupters
- I.R. remotes
- Infrared sources

### ABSOLUTE MAXIMUM RATING (TA=25°C unless otherwise noted)

| SYMBOL          | PARAMETER                         | MIN | MAX  | UNITS |
|-----------------|-----------------------------------|-----|------|-------|
| Pd              | Power Dissipation                 |     | 160  | mW    |
| I <sub>FP</sub> | Continuous Forward Current        |     | 100  | mA    |
| I <sub>FP</sub> | Peak Forward Current (10μs, 10Hz) |     | 2.5  | A     |
| V <sub>R</sub>  | Reverse voltage                   |     | 5    | V     |
| To & Ts         | Storage & Operating Temperature   | -65 | +125 | °C    |
| TS              | Soldering Temperature*            |     | +260 | °C    |

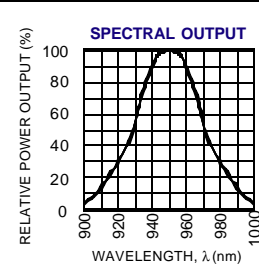
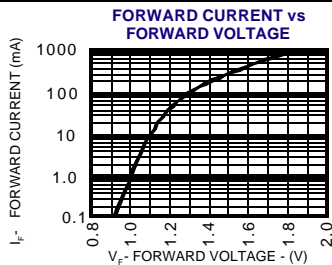
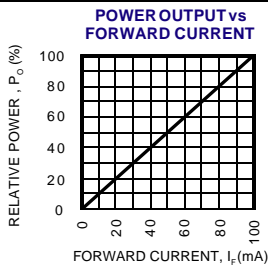
\*1/16 inch from case for 3 secs max

### TYPICAL RADIATION PATTERN



### ELECTRO-OPTICAL CHARACTERISTICS (TA=25°C unless otherwise noted)

| SYMBOL         | CHARACTERISTIC            | TEST CONDITIONS                 | MIN | TYP  | MAX  | UNITS |
|----------------|---------------------------|---------------------------------|-----|------|------|-------|
| P <sub>0</sub> | Output Power              | I <sub>F</sub> = 20 mA          | 1   | 1.2  |      | mW    |
| V <sub>F</sub> | Forward Voltage           | I <sub>F</sub> = 100 mA         |     | 1.30 | 1.50 | V     |
| V <sub>R</sub> | Reverse Breakdown Voltage | I <sub>F</sub> = 10 μA          | 5   |      |      | V     |
| λ <sub>P</sub> | Peak Wavelength           | I <sub>F</sub> = 100 mA         | 920 | 940  | 960  | nm    |
| Δλ             | Spectral Halfwidth        | I <sub>F</sub> = 100 mA         |     | 50   |      | nm    |
| C <sub>t</sub> | Terminal Capacitance      | V <sub>R</sub> = 0 V, f = 1 MHz |     | 30   |      | pF    |
| t <sub>r</sub> | Rise Time                 | I <sub>F</sub> = 100 mA         |     | 0.8  |      | μS    |
| t <sub>f</sub> | Fall Time                 | I <sub>F</sub> = 100 mA         |     | 0.8  |      | mS    |



Information in this technical data sheet is believed to be correct and reliable. However, no responsibility is assumed for possible inaccuracies or omission. Specifications are subject to change without notice. Optical power and radiant intensity measured using uncapped dimpled TO-46 into integrating sphere.