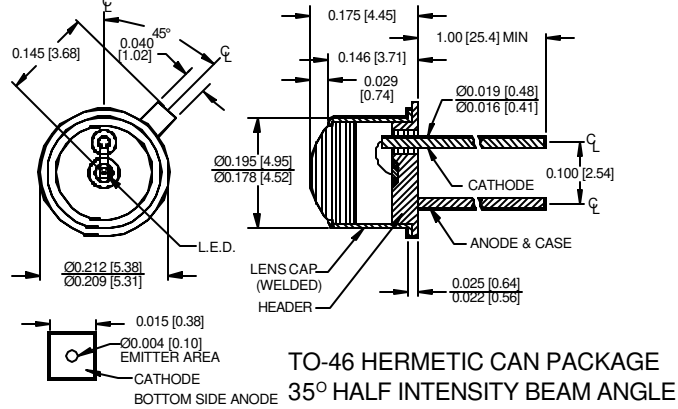


# PHOTONIC DETECTORS INC.

## High-Speed GaAlAs Infrared Point Source Emitter Peak Wavelength 850 nm, Type PDI-E827



### PACKAGE DIMENSIONS inch (mm)



### FEATURES

- High speed
- High reliability
- Medium emission angle

**DESCRIPTION:** The PDI-E827 is a GaAlAs, 850 nm, high speed point source emitter. The emitting junction is .004 inch (0.10 mm) diameter. The topside metal cathode forms an optical aperture mask. Packaged in a TO-46 header with a glass lens cap.

### APPLICATIONS

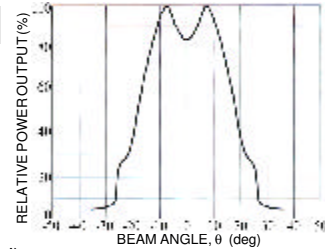
- Fiber optic sources
- Optical encoders
- Point light sources

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

| SYMBOL          | PARAMETER                         | MIN | MAX  | UNITS |
|-----------------|-----------------------------------|-----|------|-------|
| Pd              | Power Dissipation                 |     | 200  | 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                   |     | 2    | V     |
| To & Ts         | Storage & Operating Temperature   | -55 | +125 | °C    |
| TS              | Soldering Temperature*            |     | +260 | °C    |

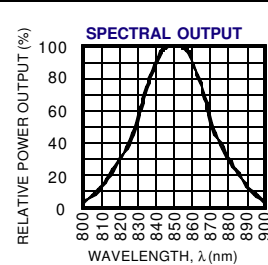
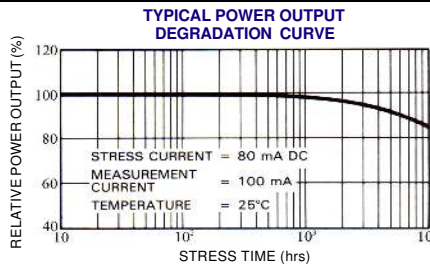
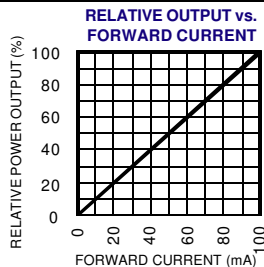
\*1/16 inch from case for 3 secs max

### TYPICAL RADIATION PATTERN



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

| SYMBOL         | CHARACTERISTIC            | TEST CONDITIONS                 | MIN | TYP  | MAX | UNITS |
|----------------|---------------------------|---------------------------------|-----|------|-----|-------|
| P <sub>o</sub> | Output Power              | I <sub>F</sub> = 100 mA         | 2.5 |      |     | mW    |
| V <sub>F</sub> | Forward Voltage           | I <sub>F</sub> = 100 mA         |     | 1.70 | 2.2 | V     |
| V <sub>R</sub> | Reverse Breakdown Voltage | I <sub>F</sub> = 10 μA          | 2.0 |      |     | V     |
| λ <sub>P</sub> | Peak Wavelength           | I <sub>F</sub> = 20 mA          | 830 | 850  | 870 | nm    |
| Δλ             | Spectral Halfwidth        | I <sub>F</sub> = 20 mA          |     | 30   |     | nm    |
| C <sub>t</sub> | Terminal Capacitance      | V <sub>R</sub> = 0 V, f = 1 MHz |     | 60   |     | pF    |
| t <sub>r</sub> | Rise Time                 | I <sub>F</sub> = 20 mA          |     | 15   |     | nS    |
| t <sub>f</sub> | Fall Time                 | I <sub>F</sub> = 20 mA          |     | 15   |     | nS    |



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.