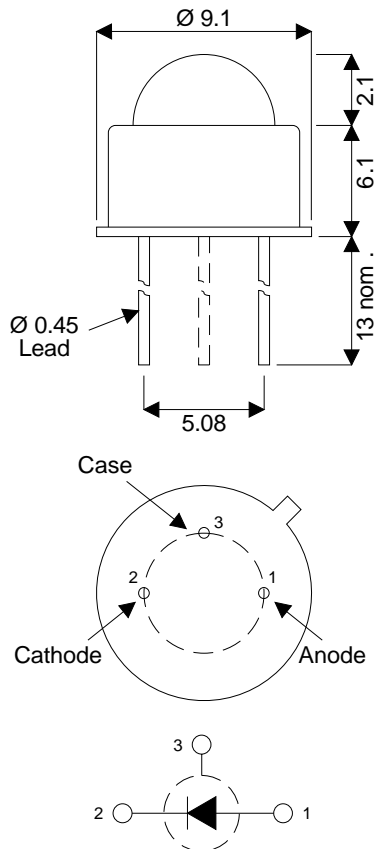


## MECHANICAL DATA

Dimensions in mm.



### TO-39 Package

Pin 1 – Anode      Pin 2 – Cathode      Pin 3 – Case

## P.I.N. PHOTODIODE

### FEATURES

- NARROW RECEIVING ANGLES
- PHOTODIODE ISOLATED FROM PACKAGE
- EXCELLENT LINEARITY
- LOW NOISE
- WIDE SPECTRAL RESPONSE
- WIDE INTRINSIC BANDWIDTH
- LOW LEAKAGE CURRENT
- LOW CAPACITANCE
- INTEGRAL OPTICAL FILTER OPTION note 1
- TO39 HERMETIC METAL CAN PACKAGE
- EMI SCREENING MESH AVAILABLE

Note 1 Contact Semelab Plc for filter options

### DESCRIPTION

The SMP550G-FN is a Silicon P.I.N. photodiode incorporated in a lensed, hermetic metal can package. The electrical terminations are via two leads of diameter 0.018" on a pitch centre diameter of 0.2". The photodiode is electrically isolated from the package, which has a separate earth lead.

The larger photodiode active area provides greater sensitivity than the SMP400 range of devices, with a corresponding reduction in speed. The photodiode structure has been optimised for high sensitivity, light measurement applications. The narrow viewing angles provide better coupling to on-axis illumination sources. The metal can, isolated photodiode and optional screening mesh ensure a rugged device with a high degree of immunity to conducted and radiated electrical interference.

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

|   |                 |
|---|-----------------|
| Operating temperature range             | -40°C to +70°C  |
| Storage temperature range               | -45°C to +80°C  |
| Temperature coefficient of responsivity | 0.35% per °C    |
| Temperature coefficient of dark current | x2 per 8°C rise |
| Reverse breakdown voltage               | 60V             |

**CHARACTERISTICS** ( $T_{amb}=25^{\circ}\text{C}$  unless otherwise stated)

| Characteristic    | Test Conditions.              | Min. | Typ.                 | Max. | Units                 |
|-------------------|-------------------------------|------|----------------------|------|-----------------------|
| Responsivity      | $\lambda$ at 900nm            | 0.45 | 0.55                 |      | A/W                   |
| Active Area       |                               |      | 5.19                 |      | mm <sup>2</sup>       |
| Dark Current      | E = 0 Dark 1V Reverse         |      | 2                    | 4    | nA                    |
|                   | E = 0 Dark 10V Reverse        |      | 16                   | 22   |                       |
| Breakdown Voltage | E = 0 Dark 10 $\mu$ A Reverse | 60   | 80                   |      | V                     |
| Capacitance       | E = 0 Dark 0V Reverse         |      | 55                   |      | pF                    |
|                   | E = 0 Dark 20V Reverse        |      | 10                   |      |                       |
| Rise Time         | 30V Reverse<br>50 $\Omega$    |      | 9                    |      | ns                    |
| NEP               | 900nm                         |      | 19x10 <sup>-14</sup> | 0.45 | W/ $\sqrt{\text{Hz}}$ |

