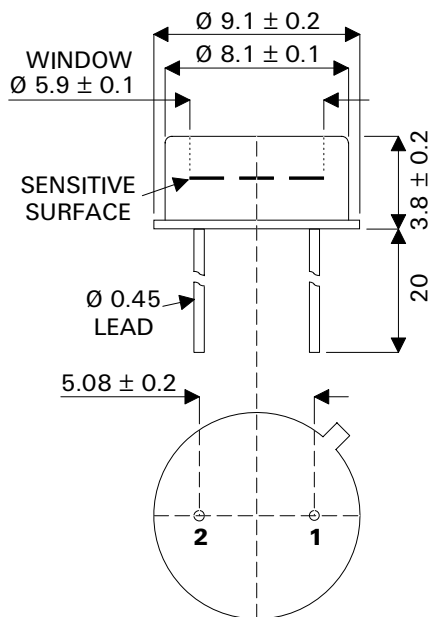


## MECHANICAL DATA

Dimensions in mm.

## P.I.N. PHOTODIODE



### TO-39 Package

Pin 1 – Anode

Pin 2 – Cathode & Case

## FEATURES

- HIGH SENSITIVITY
- EXCELLENT LINEARITY
- LOW NOISE
- WIDE SPECTRAL RESPONSE
- 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 SMP600G-EJ is a Silicon P.I.N. photodiode incorporated in a hermetic metal can package. The electrical terminations are via two leads of diameter 0.018" on a pitch of 0.2". The can structure permits a wide range of optical filter options. The cathode of the photodiode is electrically connected to the package.

The large photodiode active area provides greater sensitivity than the SMP550 range of devices, with a slight reduction in speed. Inherent in the device geometry is a reduction in the receiving angle. The photodiode structure has been optimised for high sensitivity, light measurement applications. The metal can and optional screening mesh ensure a rugged device with a high degree of immunity to radiated electrical interference.

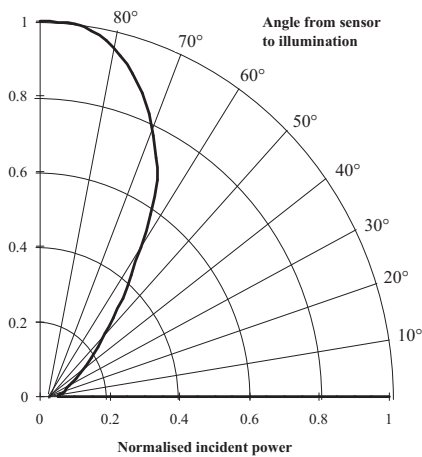
## ABSOLUTE MAXIMUM RATINGS (T<sub>case</sub> = 25°C unless otherwise stated)

|   |                 |
|---|-----------------|
| 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             |

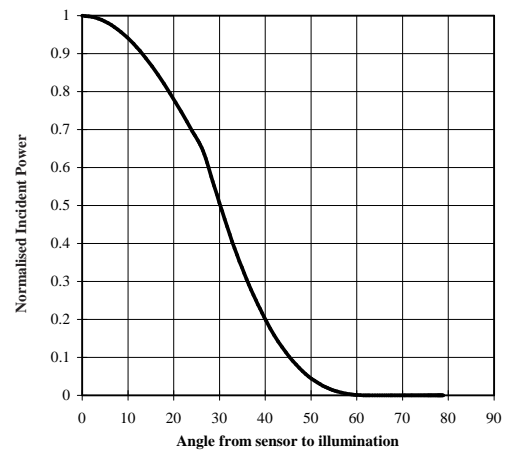
## CHARACTERISTICS (T<sub>amb</sub>=25°C unless otherwise stated)

| Characteristic    | Test Conditions.              | Min. | Typ.                 | Max. | Units           |
|-------------------|-------------------------------|------|----------------------|------|-----------------|
| Responsivity      | $\lambda$ at 900nm            | 0.45 | 0.55                 |      | A/W             |
| Active Area       |                               |      | 15                   |      | mm <sup>2</sup> |
| Dark Current      | E = 0 Dark 1V Reverse         |      | 2                    | 6    | nA              |
|                   | E = 0 Dark 10V Reverse        |      |                      |      |                 |
| Breakdown Voltage | E = 0 Dark 10 $\mu$ A Reverse | 60   | 80                   |      | V               |
| Capacitance       | E = 0 Dark 0V Reverse         |      | 90                   |      | pF              |
|                   | E = 0 Dark 20V Reverse        |      | 25                   |      |                 |
| Rise Time         | 30V Reverse<br>50 $\Omega$    |      | 12                   |      | ns              |
| NEP               | 900nm                         |      | 20x10 <sup>-14</sup> |      | W/ $\sqrt$ Hz   |

Directional characteristics



Directional Characteristics



Spectral Response

