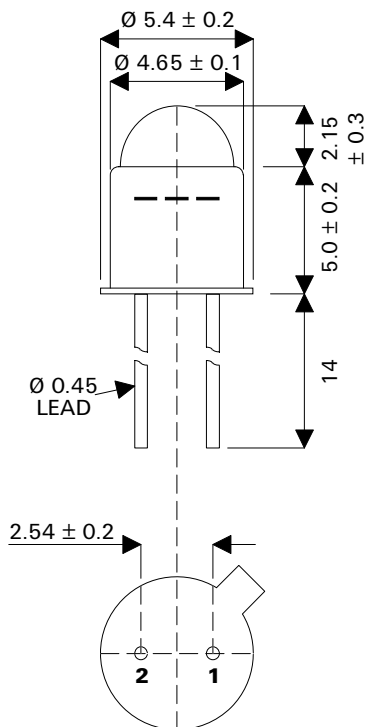


MECHANICAL DATA

Dimensions in mm.



TO-18 Package

Pin 1 – Anode

Pin 2 – Cathode & Case

P.I.N. PHOTODIODE

FEATURES

- NARROW RECEIVING ANGLE
- EXCELLENT LINEARITY
- LOW NOISE
- WIDE SPECTRAL RESPONSE
- WIDE INTRINSIC BANDWIDTH
- LOW LEAKAGE CURRENT
- LOW CAPACITANCE
- INTEGRAL OPTICAL FILTER OPTION **note 1**
- TO18 HERMETIC METAL CAN PACKAGE
- EMI SCREENING MESH AVAILABLE

Note 1 Contact Semelab Plc for filter options

DESCRIPTION

The SMP400G-BC is a Silicon P.I.N. photodiode incorporated in a compact, lensed, hermetic metal can package. The electrical terminations are via two leads of diameter 0.005" on a pitch of 0.1". The cathode of the photodiode is electrically connected to the package.

The photodiode structure has been optimised for high sensitivity, high speed light measurement applications. The narrow viewing angle provides better coupling to on-axis illumination sources. 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_{case} = 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 | λ at 900nm | 0.45 | 0.55 | | A/W |
| Active Area | | | 0.62 | | mm ² |
| Dark Current | E = 0 Dark 1V Reverse | | 0.1 | 1.0 | nA |
| | E = 0 Dark 10V Reverse | | 0.5 | 2.5 | |
| Breakdown Voltage | E = 0 Dark 10 μ A Reverse | 60 | 80 | | V |
| Capacitance | E = 0 Dark 0V Reverse | | 8 | 12 | pF |
| | E = 0 Dark 20V Reverse | | 1.5 | 2.5 | |
| Rise Time | 30V Reverse 50 Ω | | 4 | | ns |
| NEP | 900nm | | 7.2 | 0.45 | W/ $\sqrt{\text{Hz}}$ |

