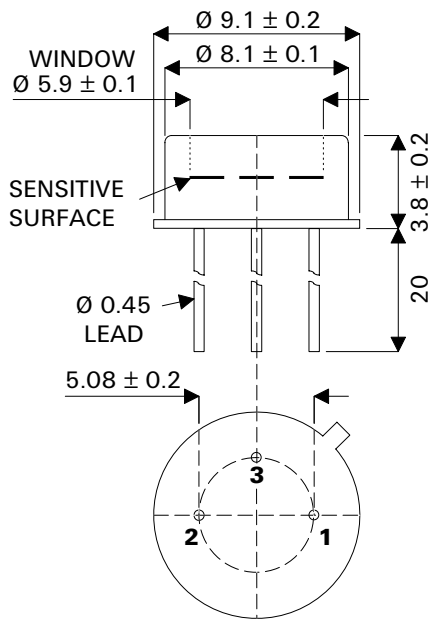


## MECHANICAL DATA

Dimensions in mm.



### TO-39 Package

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

## P.I.N. PHOTODIODE

### FEATURES

- ASYMMETRIC VIEWING ANGLES
- WIDEST SPECTRAL RESPONSE
- ENHANCED UV SENSITIVITY
- PHOTODIODE ISOLATED FROM PACKAGE
- EXCELLENT LINEARITY
- LOW NOISE
- 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 SMP525G-FK is a Silicon P.I.N. photodiode incorporated in a hermetic metal can package. The package window has greater ultra-violet light transmission, thus extending the useful spectral range of the device. The electrical terminations are via two leads of diameter 0.018" on pitch centre diameter of 0.2". The photodiode is electrically isolated from the package, which has a separate earth lead.

The photodiode active area provides asymmetric viewing angles in two orthogonal directions. The photodiode structure has been optimised for high sensitivity, asymmetric light measurement applications across the infra-red to ultra-violet spectrum. Inclusion of a suitable optical filter into the package can produce a device that responds only to ultra-violet light. 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.

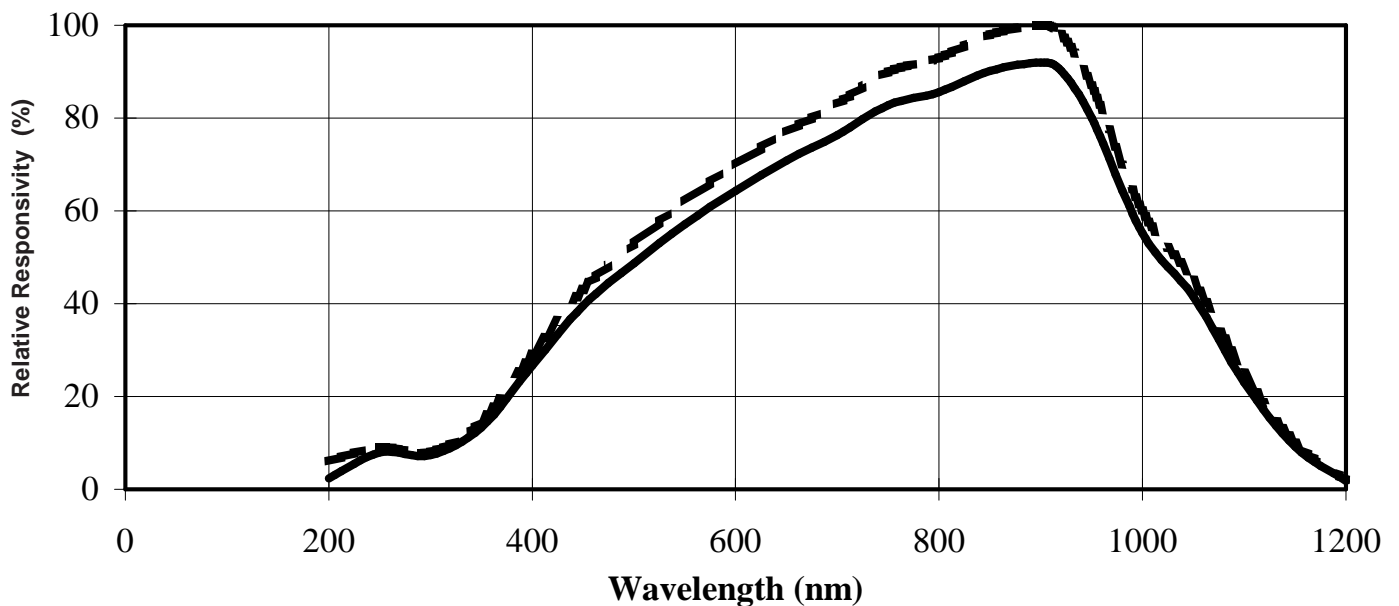
### ABSOLUTE MAXIMUM RATINGS (T<sub>case</sub> = 25°C unless otherwise stated)

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

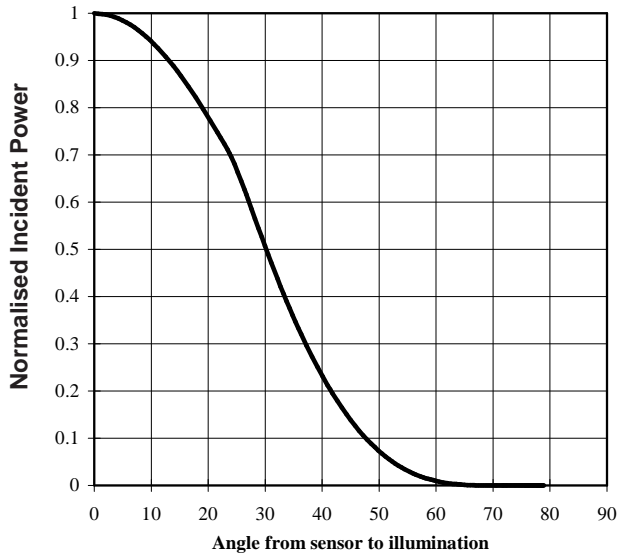
**CHARACTERISTICS** ( $T_{amb}=25^{\circ}\text{C}$  unless otherwise stated)

Characteristic	Test Conditions.	Min.	Typ.	Max.	Units
Responsivity	$\lambda$ at 900nm	0.45	0.55		A/W
Active Area			2.05		mm <sup>2</sup>
Dark Current	E = 0 Dark 1V Reverse		0.25	4	nA
	E = 0 Dark 10V Reverse		4	10	
Breakdown Voltage	E = 0 Dark 10 $\mu$ A Reverse	60	80		V
Capacitance	E = 0 Dark 0V Reverse		45		pF
	E = 0 Dark 20V Reverse		6		
Rise Time	30V Reverse 50 $\Omega$				ns
NEP	900nm			0.45	W/ $\sqrt{\text{Hz}}$

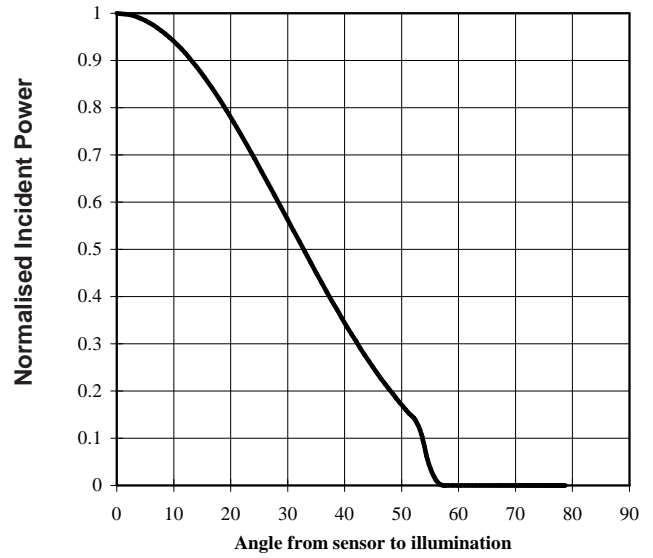
**Spectral Response**



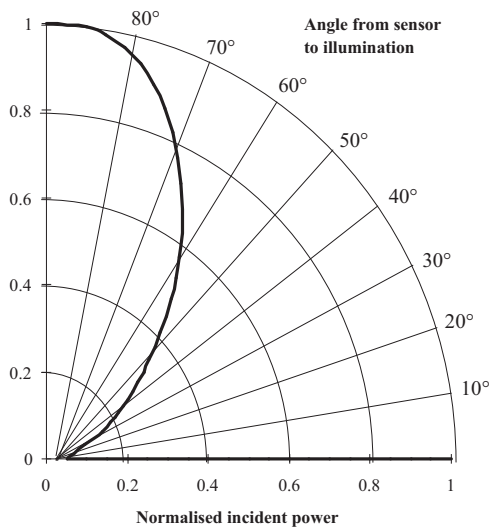
**Directional Characteristics**



**Directional Characteristics**



**Directional characteristics**



**Directional characteristics**

