



**DESCRIPTION**

The **SD012-121-011** is a high sensitivity, low capacitance and noise, 0.3mm diameter active area InGaAs photodiode, sensitive to wavelengths in visible extended (450-1700nm) spectral range and used for sensing applications. The photodetector is assembled in a TO-46 package.

**FEATURES**

- Low Noise
- Low Dark Current and Capacitance
- High Sensitivity
- Light Detection (Visible, NIR, SWIR)

**RELIABILITY**

This high-reliability device is in principle able to meet military test requirements (Mil-STD-750, Mil-STD-883) after proper screening and group test. Contact Luna Optoelectronics for recommendations on specific test conditions and procedures.

**APPLICATIONS**

- Industrial Sensing
- Security and Defense
- Communication

**ABSOLUTE MAXIMUM RATINGS**

SYMBOL	MIN		MAX	UNITS	
Reverse Voltage			20	V	$T_a = 23^\circ\text{C}$
Operating Temperature	0	to	+85	$^\circ\text{C}$	
Storage Temperature	-25	to	+85	$^\circ\text{C}$	
Soldering Temperature*			+260	$^\circ\text{C}$	> 2mm from case for < 5 sec
Wavelength Range	400	to	1700	nm	

Information in this technical datasheet is believed to be correct and reliable. However, no responsibility is assumed for possible inaccuracies or omission. Specifications are subject to change without notice.

**OPTO-ELECTRICAL PARAMETERS**

T<sub>a</sub> = 23°C unless noted otherwise

PARAMETER	TEST CONDITIONS	MIN	TYP	MAX	UNITS
Breakdown Voltage	I <sub>bias</sub> = 100 μA	10	-	-	V
Responsivity	λ = 600 nm	0.3	0.35	-	A/W
Responsivity	λ = 1200 nm	0.7	0.85	-	A/W
Responsivity	λ = 1550 nm	0.9	1.00	-	A/W
Shunt Resistance	V <sub>bias</sub> = 10 mV	5	30	-	MΩ
Dark Current	V <sub>bias</sub> = 1V	-	2	20	nA
Capacitance	V <sub>bias</sub> = 1V; f = 1MHz	-	6	20	pF
Rise Time (50Ω load)	V <sub>bias</sub> = 5V; λ = 826 nm	-	5	-	ns
Noise Equivalent Power	λ = 900nm	-	1.0	-	10 <sup>-13</sup> W/Hz <sup>0.5</sup>

**TYPICAL PERFORMANCE**

**SPECTRAL RESPONSE**

