PACKAGE DIMENSIONS, MM
TO-46

VIEW SHOWN WITH O2 WINDOW CAP REMOVED

SCHEMATIC

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.

RELIABILITY

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

MOISTURE SENSITIVITY LEVEL

API silicon light dependent resistors are classified as MSL level 1 per J-STD-020 allowing for unlimited floor time at temperatures less than or equal to 30°C and humidity less than or equal to 85%.

ABSOLUTE MAXIMUM RATINGS

SYMBOL	MIN	MAX	UNITS
Operating Temperature	0	+85	°C
Storage Temperature	-25	+85	°C
Soldering Temperature *	-	+240	°C
Wavelength Range	450	1700	nm
Reverse Voltage	-	20	V

*) 1/16 inch from case for 3s max.

FEATURES

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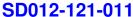- High Sensitivity
- Light Detection (Visible, NIR, SWIR)

APPLICATIONS

- Industrial Sensing
- Security and Defense
- Communication

ESD

This device is Class 1A (HBM).

T_a = 23°C non condensing

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Precision – Control – Results

OPTO-ELECTRICAL PARAMETERS

$T_a = 23\,°C$ unless noted otherwise

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

TYPICAL PERFORMANCE

SPECTRAL RESPONSE

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