

DESCRIPTION

The **SD 012-151-011** is a high sensitivity, low noise, 0.3 mm diameter active area InGaAs photodiode (chip dimensions 0.44mm x 0.44mm) for detection at SWIR, NIR wavelengths for imaging and sensing applications. The photodiode is assembled in a TO-46 package.

FEATURES

- Low Noise,
- High Sensitivity
- Detection at SWIR and NIR

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.

APPLICATIONS

- Industrial Sensing
- Security and Defense
- Communication
- Medical

ABSOLUTE MAXIMUM RATINGS

$T_a = 23^{\circ}\text{C}$ non condensing 1/16 inch from case for 3 seconds max

SYMBOL	MIN	MAX	UNITS
Reverse Voltage	-	40	V
Operating Temperature	-40	+100	$^{\circ}\text{C}$
Storage Temperature	-55	+125	$^{\circ}\text{C}$
Soldering Temperature	-	+260	$^{\circ}\text{C}$

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.

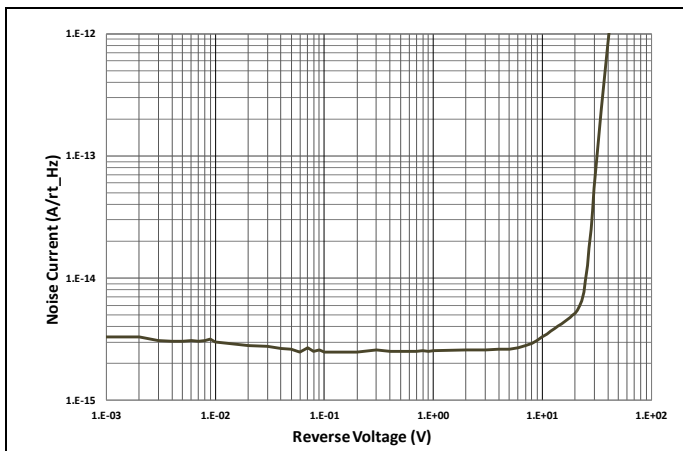
ELECTRO-OPTICAL CHARACTERISTICS RATINGS

T_a = 23°C unless noted otherwise

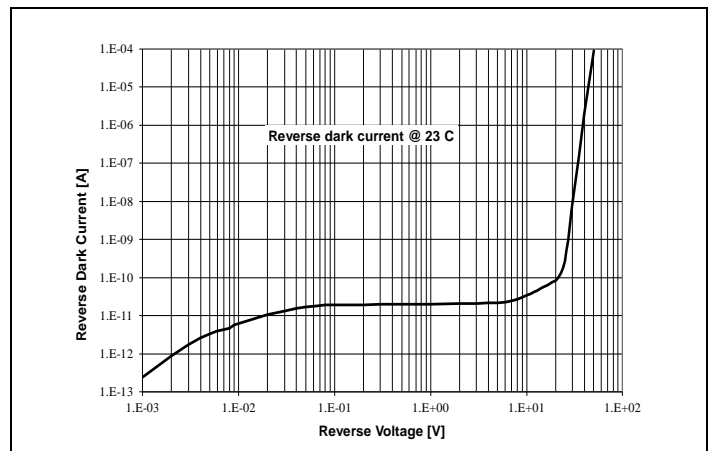
PARAMETER	TEST CONDITIONS	MIN	TYP	MAX	UNITS
Breakdown Voltage	I _{bias} = 1 μA	-	50	-	V
Responsivity	λ = 1310 nm, V _r = 5V	0.80	0.90	-	A/W
Shunt Resistance	V _{bias} = 10 mV	0.2	1.0	-	GΩ
Dark Current	V _{bias} = 5V	-	0.1	10.0	nA
Capacitance	V _{bias} = 5V; f = 1.0 MHz	-	2.0	10.0	pF
Rise Time (50Ω load)	V _{bias} = 5V; λ = 1310 nm	-	1.2	-	ns
Spectral Range	-	800	-	1700	nm
Noise Equivalent Power	V _r = 5V @ λ = 1310	-	4.0x10 ⁻¹⁵	-	W/Hz ^{1/2}

TYPICAL PERFORMANCE

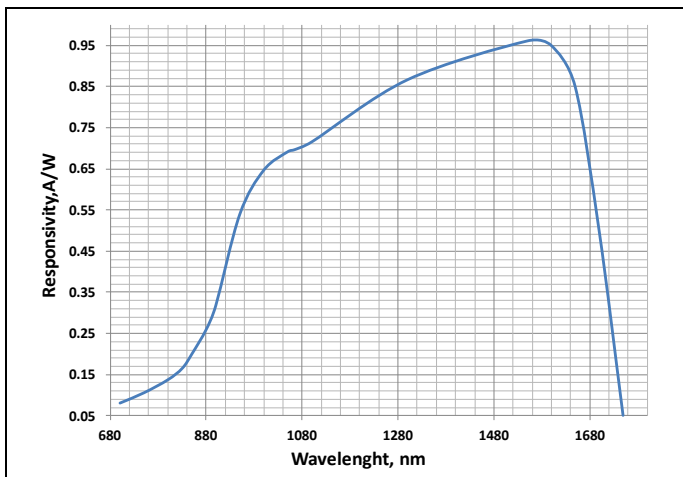
NOISE CURRENT vs. REVERSE BIAS



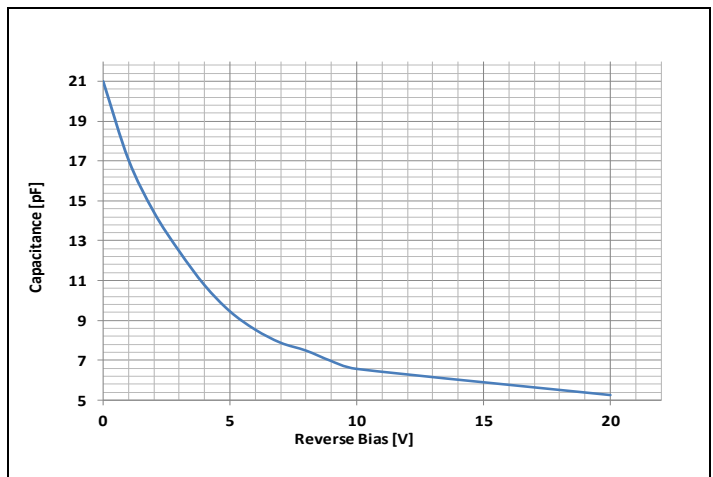
DARK CURRENT vs. REVERSE BIAS



SPECTRAL RESPONSE



CAPACITANCE vs. REVERSE BIAS



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