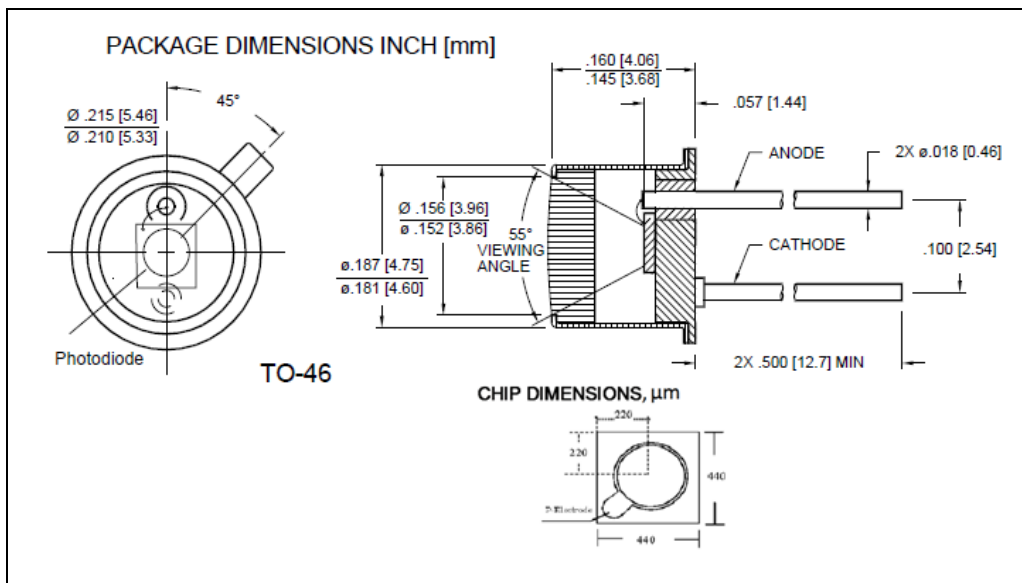




DESCRIPTION

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 photodetector 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	$^\circ\text{C}$

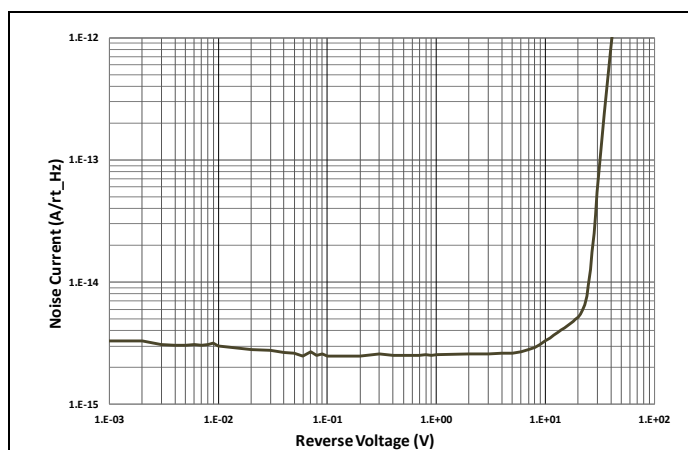
ELECTRO-OPTICAL CHARACTERISTICS RATINGS

$T_a = 23^\circ\text{C}$ unless noted otherwise

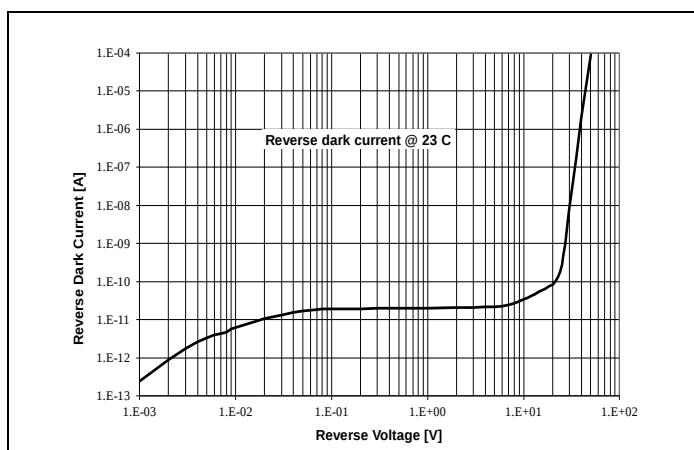
PARAMETER	TEST CONDITIONS	MIN	TYP	MAX	UNITS
Breakdown Voltage	$I_{\text{bias}} = 1 \mu\text{A}$	-	50	-	V
Responsivity	$\lambda = 1310 \text{ nm}, V_r = 5\text{V}$	0.80	0.90	-	A/W
Shunt Resistance	$V_{\text{bias}} = 10 \text{ mV}$	0.2	1.0	-	$\text{G}\Omega$
Dark Current	$V_{\text{bias}} = 5\text{V}$	-	0.1	10.0	nA
Capacitance	$V_{\text{bias}} = 5\text{V}; f = 1.0 \text{ MHz}$	-	2.0	10.0	pF
Rise Time (50 Ω load)	$V_{\text{bias}} = 5\text{V}; \lambda = 1310 \text{ nm}$	-	1.2	-	ns
Spectral Range	-	800	-	1700	nm
Noise Equivalent Power	$V_r = 5\text{V} @ \lambda = 1310$	-	4.0×10^{-15}	-	$\text{W/Hz}^{1/2}$

TYPICAL PERFORMANCE

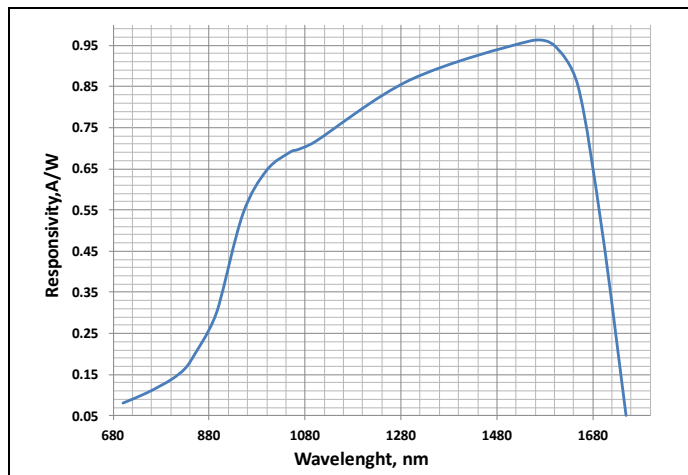
NOISE CURRENT vs. REVERSE BIAS



DARK CURRENT vs. REVERSE BIAS



SPECTRAL RESPONSE



CAPACITANCE vs. REVERSE BIAS

