



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



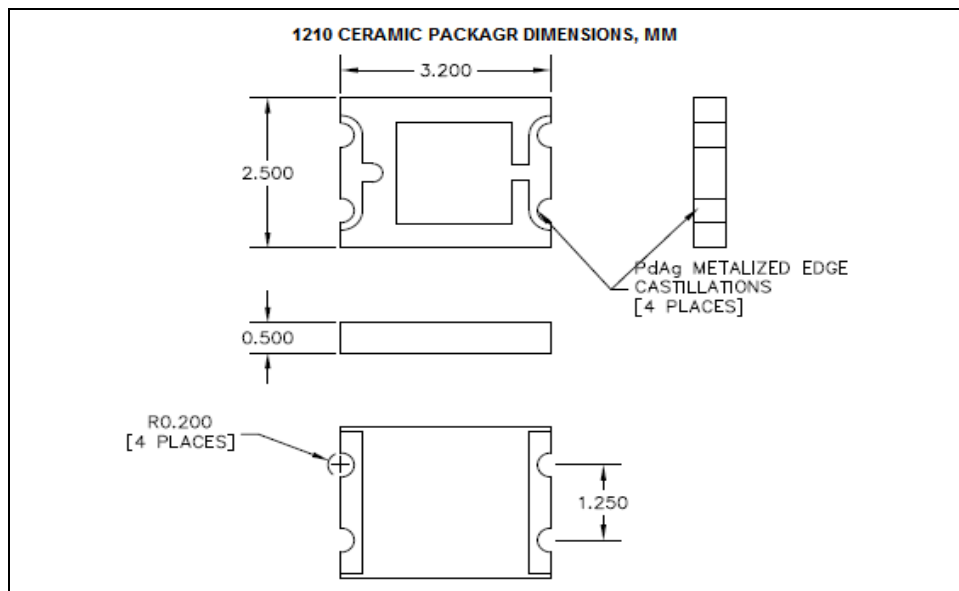
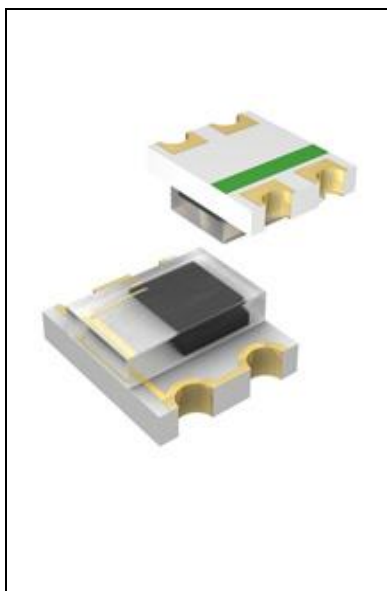
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### DESCRIPTION

The **SD 039-151-001** is a high sensitivity, low noise, 1 mm<sup>2</sup> diameter active area InGaAs photodiode (chip dimensions 1.36mmx1.36mm) for detection at SWIR, NIR wavelengths for imaging and sensing applications. Photodetector assembled in a 1210 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.

### ABSOLUTE MAXIMUM RATINGS

SYMBOL	MIN	MAX	UNITS
Reverse Voltage	-	40	V
Operating Temperature	-40	+100	°C
Storage Temperature	-55	+125	°C
Soldering Temperature	-	+260	°C

### FEATURES

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

### APPLICATIONS

- Industrial Sensing
- Security and Defense
- Communication
- Medical

T<sub>a</sub> = 23°C non condensing 1/16 inch from case for 3 seconds max

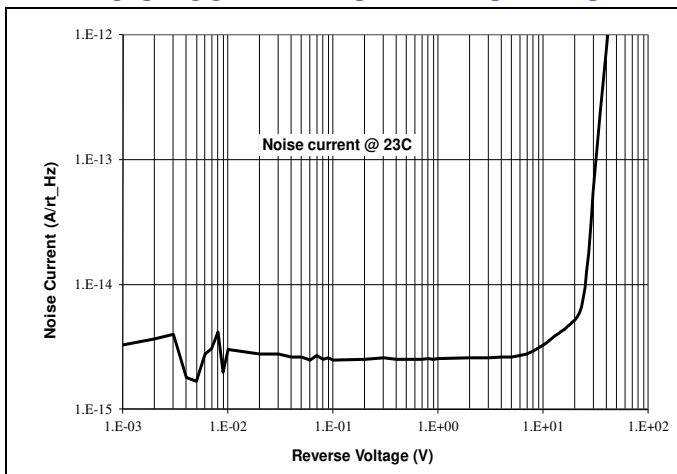
**ELECTRO-OPTICAL CHARACTERISTICS RATINGS**

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

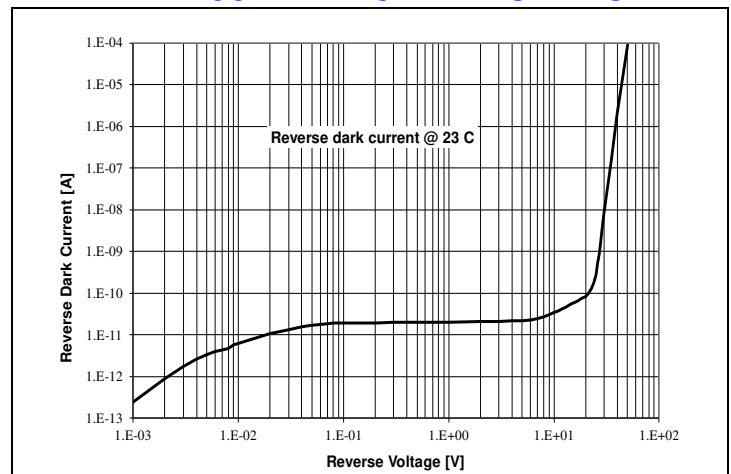
PARAMETER	TEST CONDITIONS	MIN	TYP	MAX	UNITS
Breakdown Voltage	I <sub>bias</sub> = 1 μA	20	-	40	V
Spectral Range		800	-	1700	nm
Responsivity	λ = 1310 nm, V <sub>r</sub> = 5V	0.8	0.9	-	A/W
Shunt Resistance	V <sub>bias</sub> = 10 mV	40	200	-	MΩ
Dark Current	V <sub>bias</sub> = 5V	-	0.2	10	nA
Capacitance	V <sub>bias</sub> = 5V; f = 1.0 MHz	-	70	8	pF
Rise Time (50Ω load)	V <sub>bias</sub> = 5V; λ = 1310 nm	-	2.0	-	ns
Noise Equivalent Power	V <sub>r</sub> = 5V @ λ = 1310	-	1.0x10 <sup>-14</sup>	-	fW/√Hz

**TYPICAL PERFORMANCE**

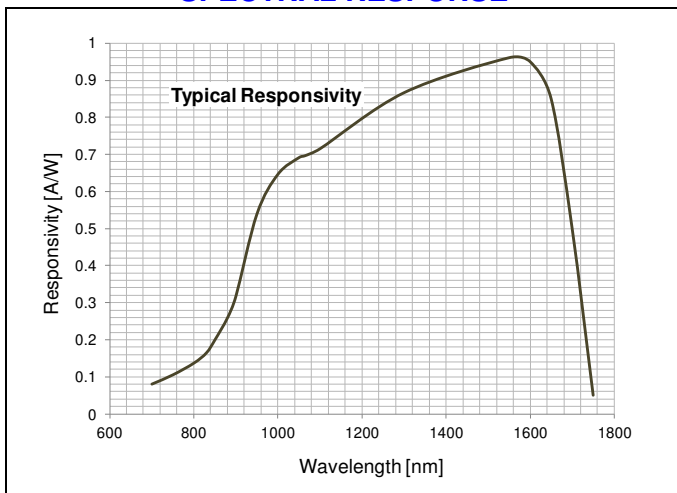
**NOISE CURRENT vs. REVERSE BIAS**



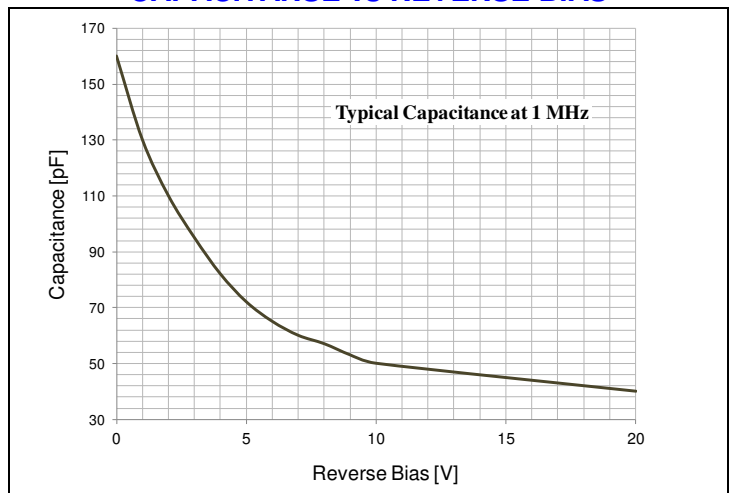
**DARK CURRENT vs. REVERSE BIAS**



**SPECTRAL RESPONSE**



**CAPACITANCE vs REVERSE BIAS**



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.