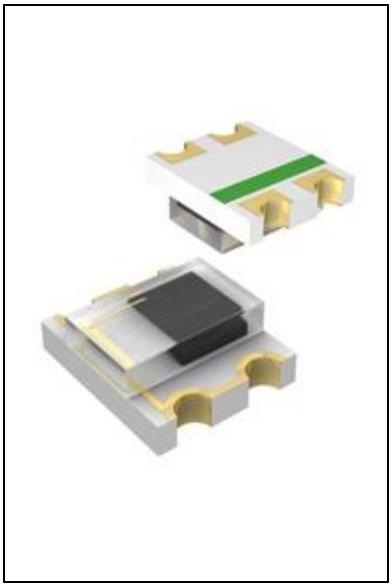

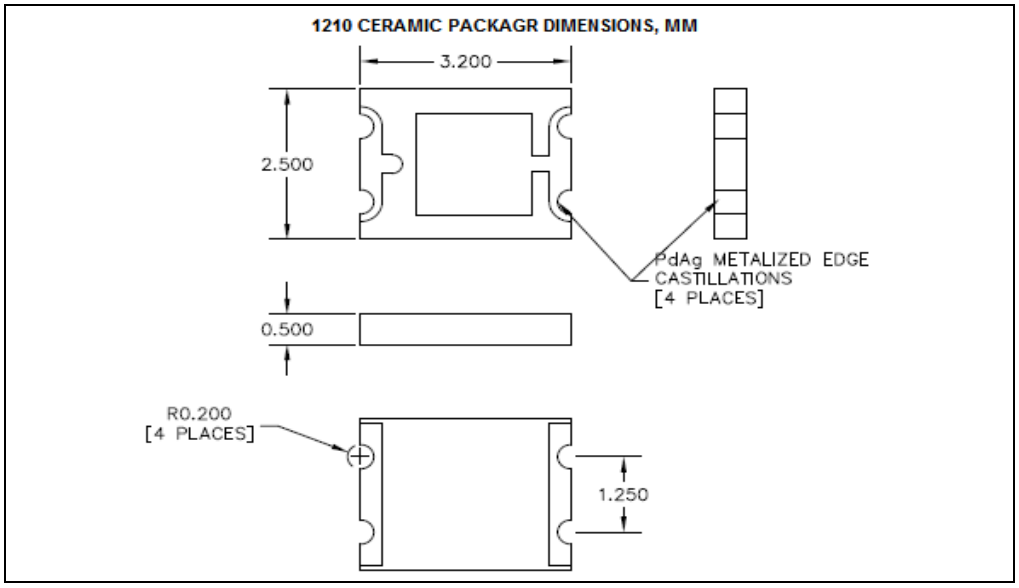

DESCRIPTION

The **SD 039-151-001** is a high sensitivity, low noise, 1 mm^2 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.

FEATURES

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

RELIABILITY

Contact Luna for recommendations on specific test conditions and procedures.

APPLICATIONS

- Industrial Sensing
- Security and Defense
- Communication
- Medical

ABSOLUTE MAXIMUM RATINGS

SYMBOL	MIN		MAX	UNITS	
Reverse Voltage	-	-	40	V	T_a = 23°C non condensing 1/16 inch from case for 3 seconds max
Operating Temperature	40	to	+100	°C	-
Storage Temperature	-55	to	+125	°C	-
Soldering Temperature	-	-	+260	°C	-

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OPTO-ELECTRICAL PARAMETERS

T_a = 23°C UNLESS NOTED OTHERWISE

PARAMETER	TEST CONDITIONS	MIN	TYP	MAX	UNITS
Breakdown Voltage	I_{bias} = 1 μA	20	-	40	V
Spectral Range	–	800	-	1700	nm
Responsivity	λ= 1310 nm, Vr=5V	0.8	0.9	-	A/W
Shunt Resistance	V_{bias} = 10 mV	40	200	-	MΩ
Dark Current	V_{bias} = 5V	-	0.2	10	nA
Capacitance	V_{bias} = 0V; f = 1 MHz	-	70	8	pF
Rise Time (50Ω load)**	V_{bias} = 5V; λ= 1310 nm	-	2.0	-	ns
Noise Equivalent Power	V_R = 5V@ λ= 1310	-	$1.0x10^{-14}$	-	fW/√Hz

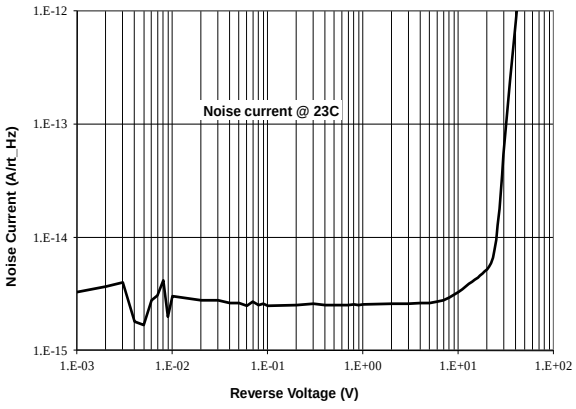
**Response time of 10% to 90%.

SOLDERING

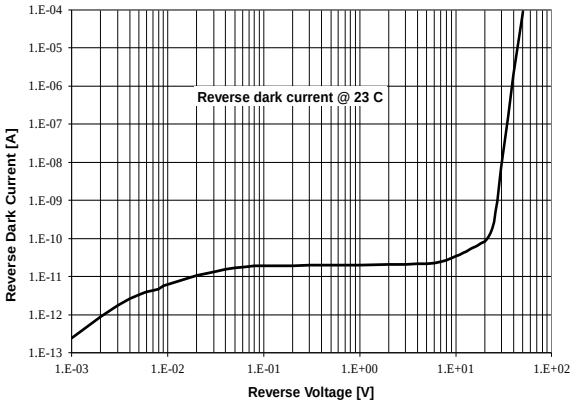
	RECOMMENDATION	
Wave	Not Advised	
IR Oven Reflow	Allowed	See reflow profile.
Forced Convection Reflow	Recommended	See reflow profile.
Convection Reflow	Recommended	See reflow profile.
Vapor Phase Reflow	Recommended	See reflow profile.
Manual	Not Advised	260°C for 3 seconds max.
Moisture Sensitivity Level	3	J-STD-033

TYPICAL PERFORMANCE

NOISE CURRENT vs. REVERSE BIAS



DARK CURRENT vs REVERSE BIAS



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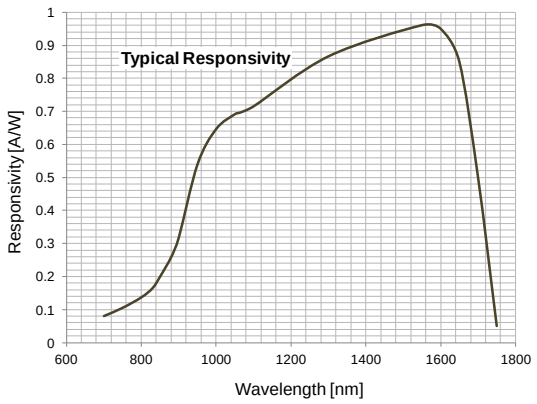
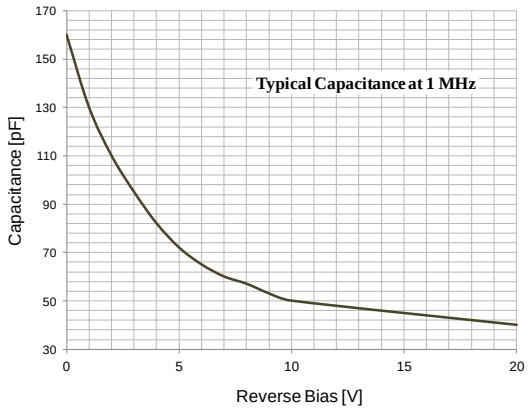
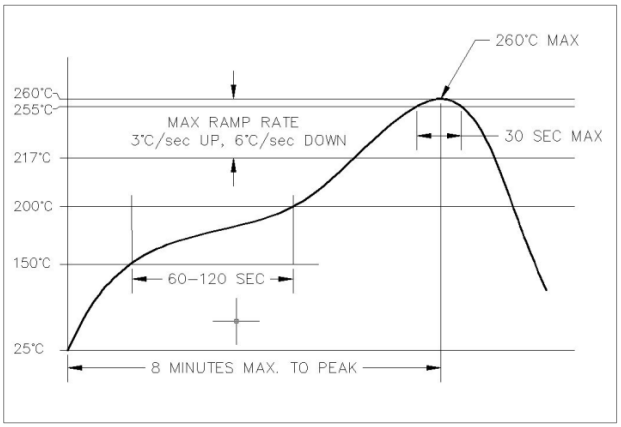
SPECTRAL RESPONSE



DARK CURRENT vs TEMPERATURE



REFLOW PROFILE



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