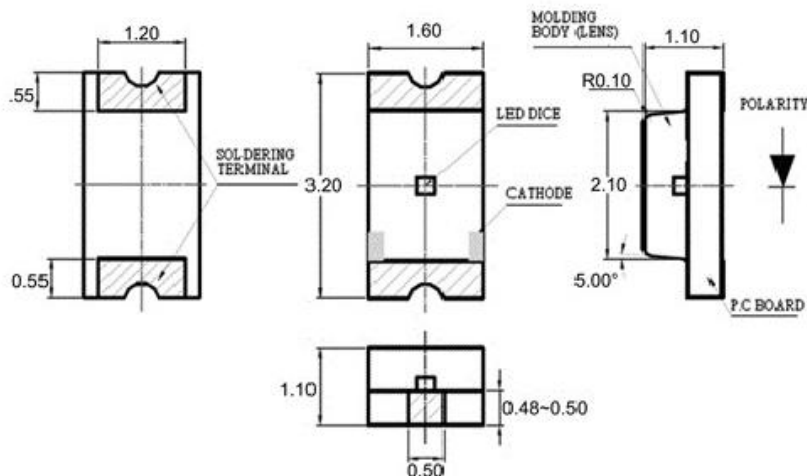




PACKAGE DIMENSIONS, MM 1206



DESCRIPTION

The SD 012-151-001 is a high sensitivity, low noise, 0.3 mm² 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 1206 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

| SYMBOL | MIN | MAX | UNITS |
|-----------------------|-----|------|-------|
| Reverse Voltage | - | 40 | V |
| Operating Temperature | -40 | +125 | °C |
| Storage Temperature | -55 | +100 | °C |
| Soldering Temperature | - | +260 | °C |
| Wavelength Range | 400 | 1100 | nm |

T_a = 23°C non condensing 1/16 inch from case for 3 seconds max

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.

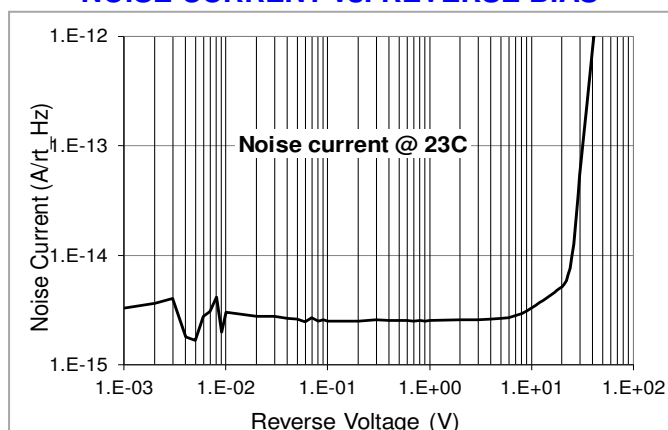
ELECTRO-OPTICAL CHARACTERISTICS RATINGS

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

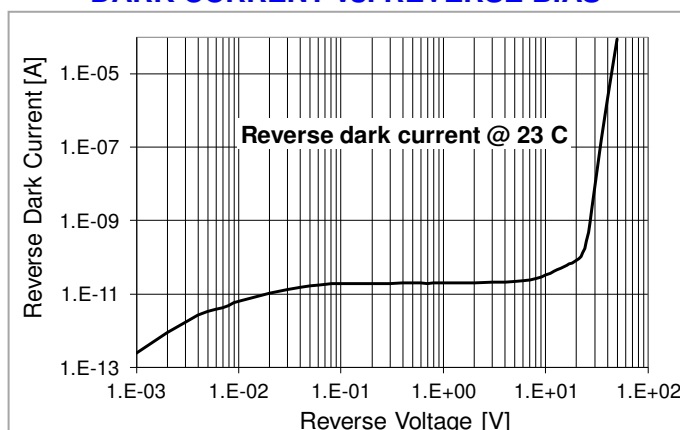
| PARAMETER | TEST CONDITIONS | MIN | TYP | MAX | UNITS |
|------------------------------|--|------|-----------------------|------|----------------------------|
| Breakdown Voltage | $I_{\text{bias}} = 1 \mu\text{A}$ | - | 50 | - | V |
| Responsivity | $\lambda = 1310 \text{ nm}, V_r = 5\text{V}$ | 0.80 | 0.90 | - | A/W |
| Shunt Resistance | $V_{\text{bias}} = 10 \text{ mV}$ | 0.2 | 1.0 | - | $\text{G}\Omega$ |
| Dark Current | $V_{\text{bias}} = 5\text{V}$ | - | 5.0 | 10.0 | nA |
| Capacitance | $V_{\text{bias}} = 5\text{V}; f = 1.0 \text{ MHz}$ | - | 1.6 | - | 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} | - | $\text{W}/\text{Hz}^{1/2}$ |

TYPICAL PERFORMANCE

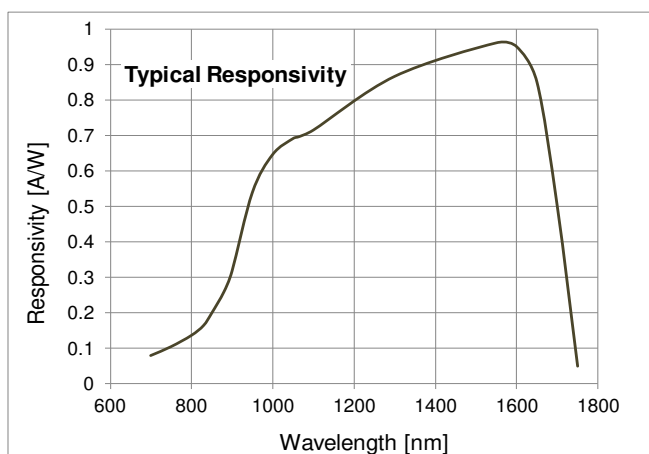
NOISE CURRENT vs. REVERSE BIAS



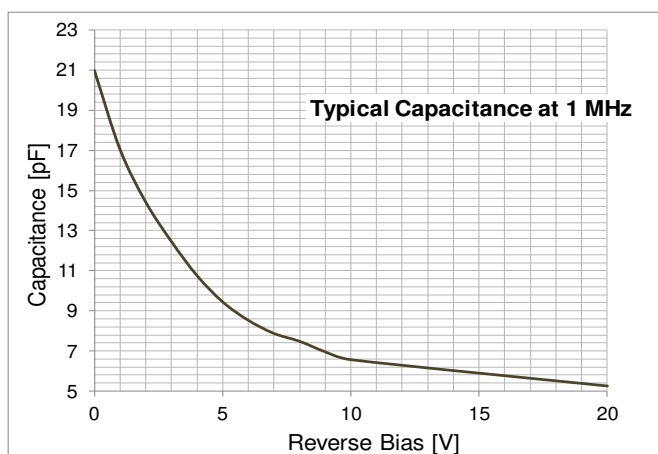
DARK CURRENT vs. REVERSE BIAS



SPECTRAL RESPONSE



CAPACITANCE vs REVERSE BIAS



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