



SD112-45-11-221

Si Photodetector with High Gain Amplifier

The SD112-45-11-221 features an ultra low dark current photodiode integrated with a high gain transimpedance amplifier in a hermetic TO-5 package. The amplifier has a typical input bias current of 10 fA resulting in very low output offset voltage and drift. The hermetic package helps keep the device's performance stable over wide range of environmental conditions. Because of excellent parameters the SD112-45-11-221 can often replace costly cooled detectors. The device can be also customized with even higher transimpedance gain.

The SD112-45-11-221 can be used in any application that requires precise very low light level detection within limited bandwidth.

Features

- Large active area
- High sensitivity
- Low noise
- Low output offset
- Hermetically sealed

Applications

- Analytical Instrumentation

Electro-Optical Characteristics

@ +23°C, $V_S = \pm 5V$, $R_L > 1M\Omega$, unless otherwise specified

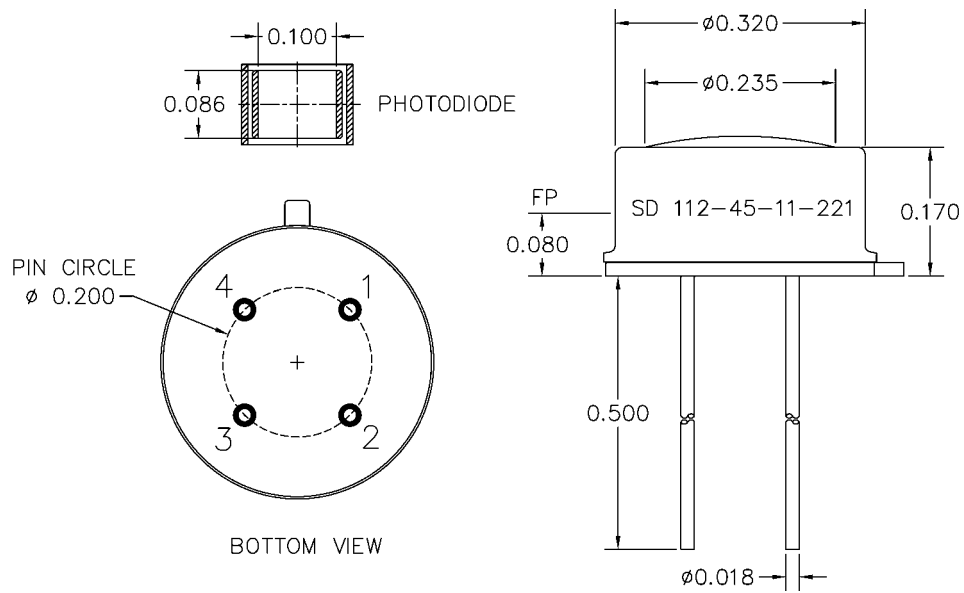
Parameter	Conditions	Min	Typ	Max	Units
Active Area			5.55		mm ²
Transimpedance Gain			600		MΩ
Offset Voltage			0.08	1	mV
Sensitivity	$\lambda = 633 \text{ nm}$	2.0×10^8	2.4×10^8		V/W
Spectral Range		350		1100	nm
Broadband Output Noise	0.01 Hz to 135 Hz		52		μV
NEP	0.01 Hz to 135 Hz		30		fW/√Hz
Bandwidth		110	135		Hz
Supply Current			850	950	μA
Output Voltage Swing			0 to 4.7	0 to 4.8	V

ABSOLUTE MAXIMUM RATINGS*

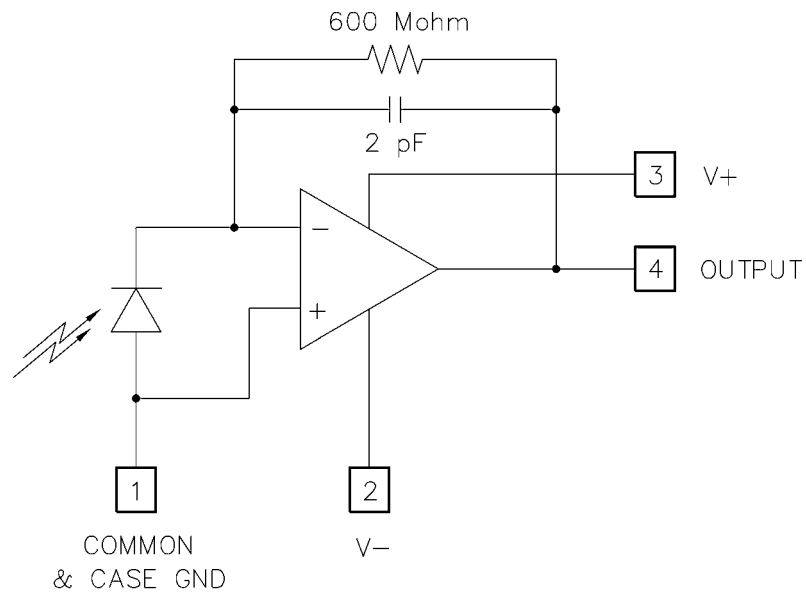
Supply Voltage ($V^+ - V^-$)	16V
Operating Temperature	-40°C + 85°C
Storage Temperature	-55°C + 100°C
Lead Solder Temperature	260°C (soldering, 10 sec.)

*Operating beyond these limits may cause permanent damage to the device.

MECHANICAL DIMENSIONS, PIN-OUT AND SCHEMATIC



All dimensions in inches



SCHEMATIC DIAGRAM

API reserves the right to change specifications without notification.