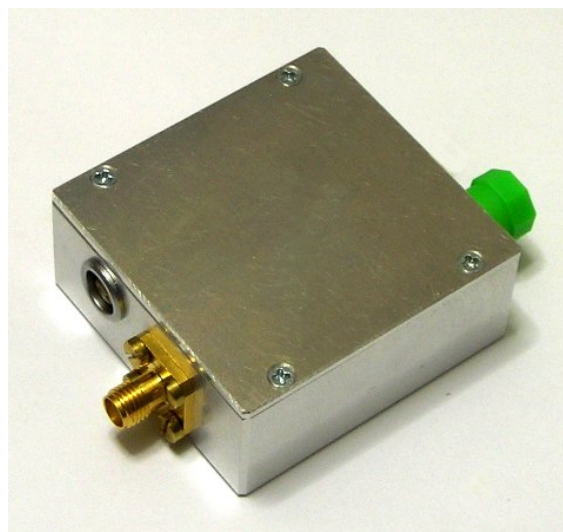


## 1 GHz InGaAs Low Noise Photodetector

### Features

- High transimpedance gain:  
3500 V/W (1550 nm)
- Low noise: below -135 dBm/Hz
- 1 GHz bandwidth
- AC coupled; low cutoff below 300 kHz
- Wavelength range: 1100 nm to 1700 nm
- Fiber Coupled: FC receptables
- Output: 50  $\Omega$  SMA plug
- Wide range single supply: 11 to 16 V



### Typical Application

- Ultrahigh speed SS-OCT imaging
- Can be used single-ended as well trigger.

### General Description

The BPD1GA is an AC-coupled high-speed InGaAs photoreceiver. It features a high transimpedance gain, very low noise, and a 3dB bandwidth of 1GHz.

The PD1GA comes in a rugged aluminum case with an FC fiber receptacle and a 50  $\Omega$  SMA output. It operates from a single 11–16 V DC supply. OEM versions without a case are available upon request.

### Mechanical Properties

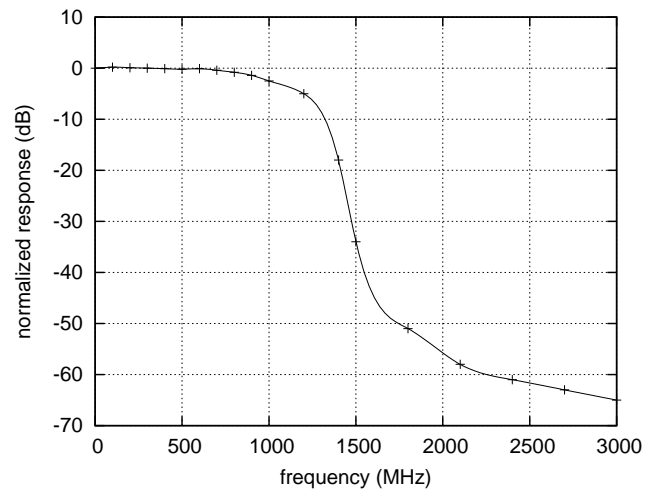
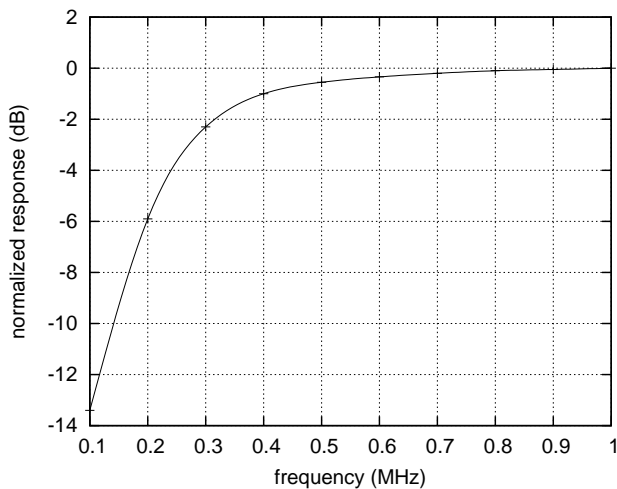
- Fiber coupling: FC receptacle for FC/PC and FC/APC connector
- RF output: SMA (female)
- Supply voltage input: Push-pull LEMO plug (included with diode)
- Small form factor: 50×48×22 mm

## Specifications

Parameter	Conditions	Min	Typ	Max	Units
DC Characteristics					
Supply Voltage ( $V_S$ )		11		16	V
Supply Current			110		mA
AC Characteristics					
3dB Bandwidth		950		1050	MHz
Rise Time	pulse input		350		ps
AC Low Frequency Cutoff			260	300	kHz
Output IP3			28		dBm
2nd Harmonic	$P_{out} = 0$ dBm		-40		dBc
	$P_{out} = -10$ dBm		-53		dBc
3rd Harmonic	$P_{out} = 0$ dBm		-45		dBc
	$P_{out} = -10$ dBm		-47		dBc
Noise Spectral Density	1 MHz–1400 MHz			-130	dBm/Hz
	> 1400 MHz			-150	dBm/Hz
Output Impedance			50		$\Omega$
Optical Characteristics					
Input Wavelength Range		1100		1700	nm
Transimpedance Gain	wavelength 1550 nm		3500		V/W <sub>optic</sub>
	wavelength 1310 nm		3300		V/W <sub>optic</sub>
Maximum Input Power	(damage threshold)	10			mW

## Typical Performance Characteristics

### Frequency response: RF output power versus frequency



Test conditions: Light input 100  $\mu$ W at 1310 nm, modulated via EOM.