

## 200 MHz Differential InGaAs Low Noise Photodetector

### Features

- High transimpedance gain:  
7500 V/W (1550 nm) into 50  $\Omega$
- 200 MHz bandwidth
- DC coupled
- 2 monitor outputs (uncalibrated)
- Wavelength range: 1000 nm to 1650 nm
- Fiber Coupling: FC receptables
- Output: 50  $\Omega$  SMA plug
- Wide range single supply: 11 to 15 V

### Typical Application

- Interferometry
- Optical Coherence Tomography
- LIDAR
- Can be used single-ended as well



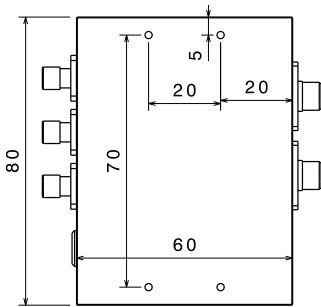
### General Description

The DPD200MA is a DC-coupled high-speed differential (“dual-balanced”) InGaAs photoreceiver. It features a high transimpedance gain, low noise and a -3 dB bandwidth of >200 MHz. The power on each of the two optical receptacles can be measured independently via two dedicated monitor outputs.

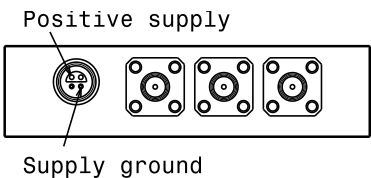
The DPD200MA comes in a rugged aluminum case with two FC fiber receptacles and a 50  $\Omega$  SMA output. It operates from a single 11–15 V DC supply.

### Mechanical Properties

- Fiber coupling: FC receptacles for FC/PC and FC/APC connectors
- RF and monitor outputs: SMA (female)
- Supply voltage input: Push-pull LEMO plug (included with diode)
- Small form factor: 80×60×20 mm
- Mounting: 4x M2.5 threaded holes on bottom (screw length 4 mm)



### Electrical Connectors



Supply connector (front view). The case is electrically connected to ground. There are two types of supply cable, one has 2 wires (new cable) and one has 5 wires (old). The corresponding color scheme of these cables is:

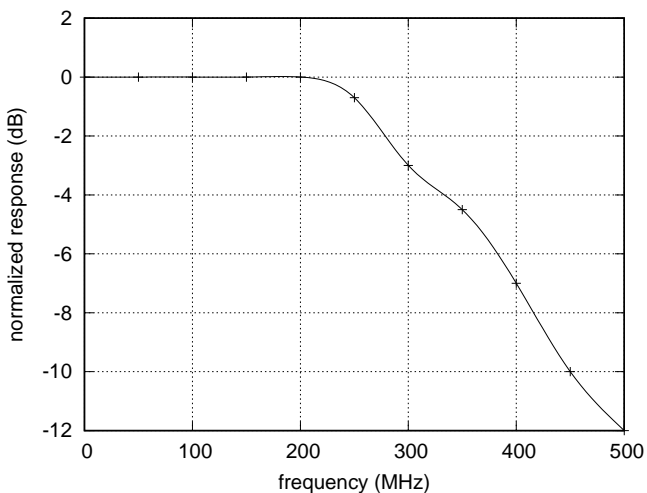
Cable type	Positive supply	Supply ground
2-wire	white	brown, shield
5-wire	yellow	grey, shield

## Specifications

Parameter	Conditions	Min	Typ	Max	Units
DC Input					
Supply Voltage ( $V_S$ )	single supply	11	12	15	V
Supply Current			100	160	mA
Main RF Out					
-3dB Bandwidth		240	265	310	MHz
Output Impedance			50		$\Omega$
Output Voltage Range	into High-Z			$\pm 4$	V
	into 50 $\Omega$			$\pm 2$	V
Noise Spectral Density	< 100 MHz		-131		dBm/Hz
	100 – 1000 MHz		-128		dBm/Hz
	> 1 GHz			-150	dBm/Hz
Noise Equivalent Power (NEP)	0 MHz – 100 MHz, 1550 nm		7		pW/ $\sqrt{\text{Hz}}$
Optical Characteristics					
Input Wavelength Range		1000		1650	nm
Transimpedance Gain	into High-Z at 1550 nm		15 000		V/W <sub>optic</sub>
	into 50 $\Omega$ at 1550 nm		7 500		V/W <sub>optic</sub>
Common Mode Rejection Ratio		20	30		dB
Maximum Input Power	(damage threshold)	15			mW
Monitor Out					
3dB Bandwidth			150		kHz
Output Impedance			2		k $\Omega$
Max. Output Voltage		8		$V_S$	V
Responsivity <sup>1</sup> (please specify)	1550 nm	0.4	0.5	20	V/mW <sub>opt.</sub>

<sup>1</sup> Manufactured according to customer spec.

## Typical Performance Characteristics



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