

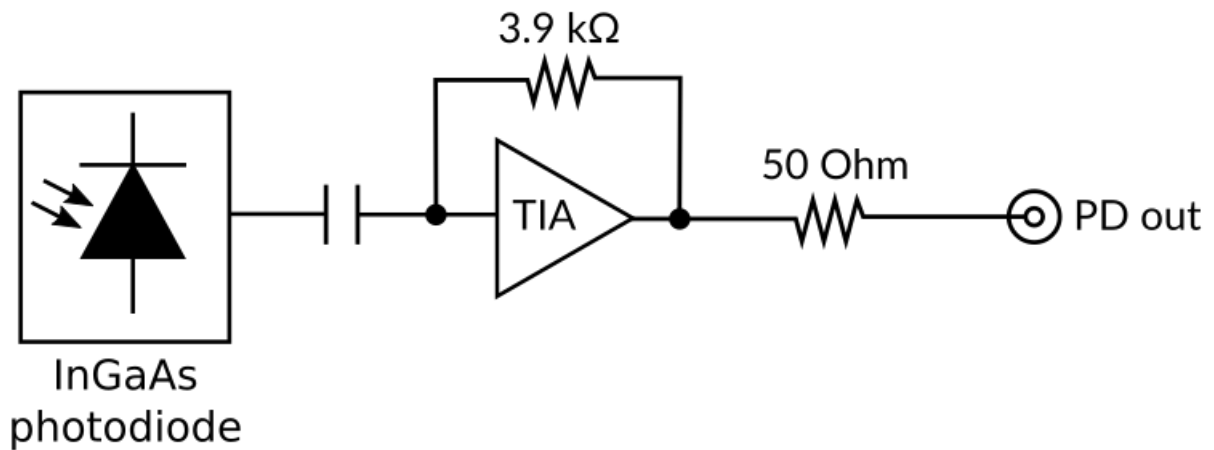


Koheron PD100 photodetectors are amplified photodetectors with a bandwidth in excess of 100 MHz. Designed for shot noise limited operation with hundreds of μW of incident power, PD100 photodetectors make perfect candidates for coherent sensing. PD100 photodetectors are available with mounted InGaAs photodiode or without photodiode and in AC or DC coupled versions.

Specifications

	PD100-AC	PD100-DC
Detector		
Detector type	InGaAs photodiode	InGaAs photodiode
Wavelength range	900 nm to 1700 nm	900 nm to 1700 nm
Optical input power	0 mW to 2.5 mW	0 mW to 0.6 mW
Photodiode connector	FC	FC
Photodiode active diameter	300 μ m	300 μ m
Photodiode peak responsivity	0.9 A/W	0.9 A/W
Transimpedance amplifier		
Coupling	AC	DC
Small signal bandwidth (3 dB, $C_{in} = 4$ pF)	1.6 kHz to 105 MHz	0 Hz to 110 MHz
Transimpedance gain	3.9 kV/A	3.9 kV/A
Input current noise density (10 MHz, $C_{in} = 4$ pF)	9 pA/ $\sqrt$ Hz	7 pA/ $\sqrt$ Hz
Offset voltage	-2 mV to 2 mV	-2 mV to 2 mV
Output impedance	50 Ω	50 Ω
Output	SMA female connector	SMA female connector
Power supplies		
Positive supply voltage	5.5 V to 12 V, nom. 6 V	5.5 V to 12 V, nom. 6 V
Negative supply voltage	-12 V to -5.5 V, nom. -6 V	-12 V to -5.5 V, nom. -6 V
Quiescent current per rail	20 mA	20 mA
Maximum current (positive supply)	50 mA	50 mA
Other		
Outside dimensions	53 mm x 38 mm x 14 mm	53 mm x 38 mm x 14 mm
Operating temperature	0 $^{\circ}$ C to 50 $^{\circ}$ C	0 $^{\circ}$ C to 50 $^{\circ}$ C
Weight	15 g	15 g
Mechanical details	Compatible with M6 metric breadboards (25 mm spacing)	Compatible with M6 metric breadboards (25 mm spacing)

Functional diagram

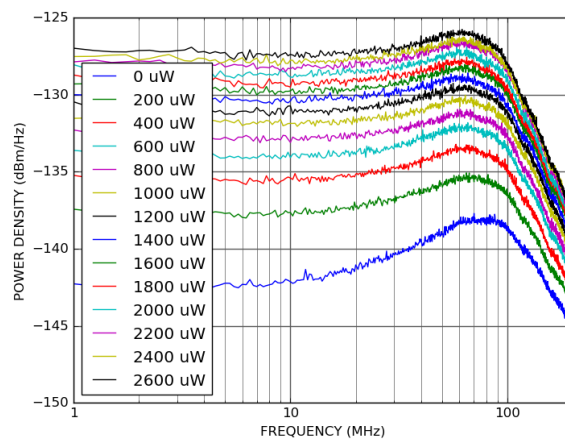


PD100 functional diagram

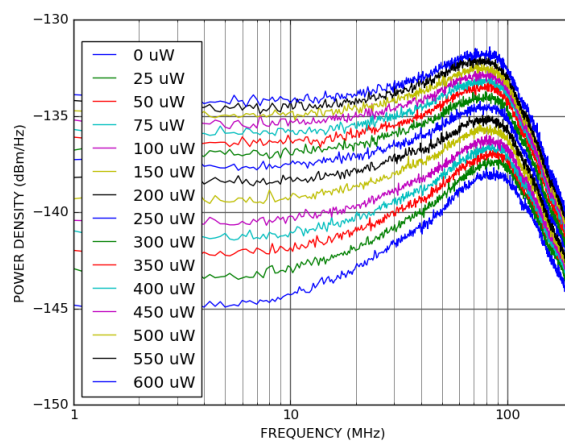
Characterization

Output power spectral density

The power spectral density of the PD100 output is given for different incident optical powers. Optical source is a [Koheron LD100 laser](#) at 1550 nm .

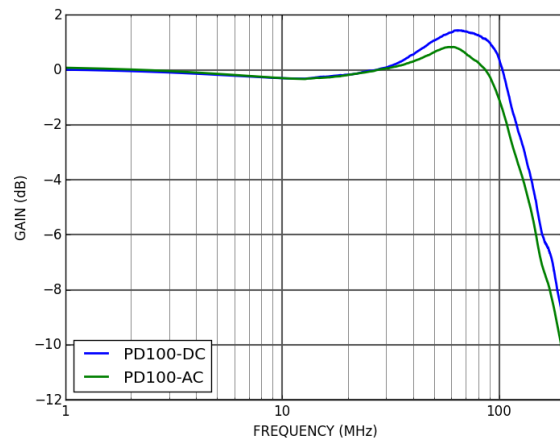


PD100-AC output power spectral density



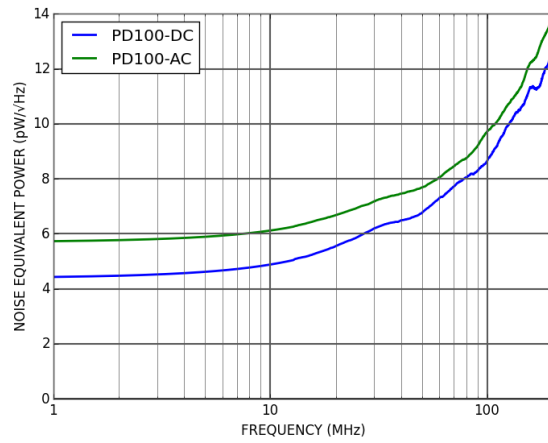
PD100-DC output power spectral density

Frequency response



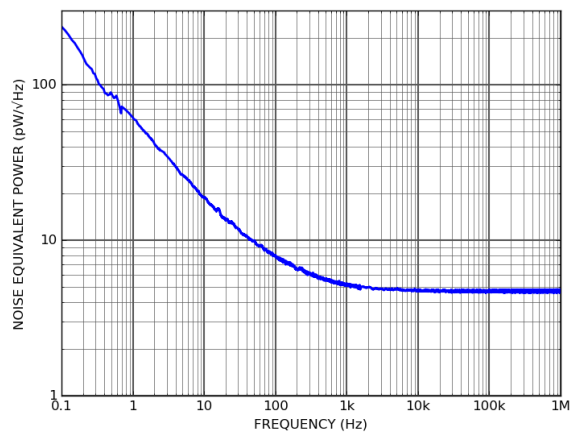
PD100 frequency response

Noise equivalent power



PD100 noise equivalent power

Low frequency noise equivalent power



PD100-DC low frequency noise equivalent power

Ordering codes

PRODUCT NUMBER	ATTRIBUTE
PD100-AC	InGaAs photodiode mounted / Coupling AC
PD100-DC	InGaAs photodiode mounted / Coupling DC
PD100-AC-NOP	No photodiode / Coupling AC
PD100-DC-NOP	No photodiode / Coupling DC