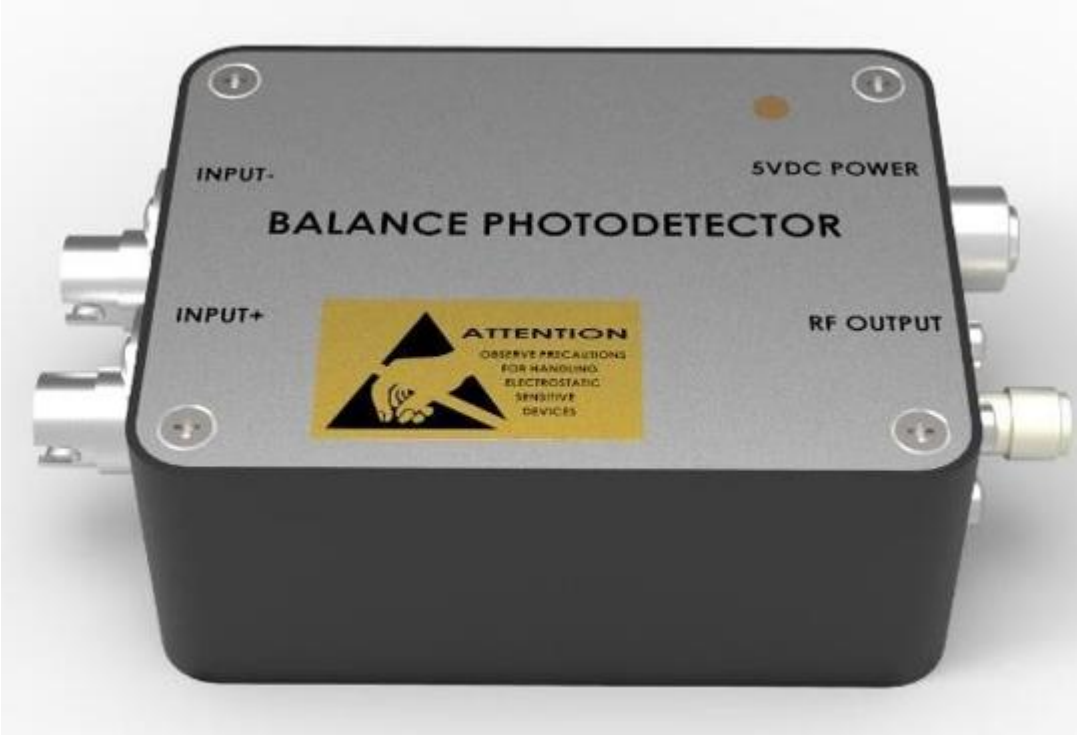
InGaAs Photonic Balanced Detector MBD-A Series 300MHz



Product Description

The high-speed low-noise photonic balanced detector module integrates two matched low-noise analog PIN detectors, a low-noise broadband transimpedance amplifier, and an ultra-low-noise power supply. It features high gain, high sensitivity, high bandwidth, low noise, and a high common-mode rejection ratio (CMRR), effectively reducing common-mode noise in the signal and improving the system's signal-to-noise ratio (SNR).

Part Number

MBD-300M-A

Product features

Low noise、 High gain、 High bandwidth、 Compact structure、 Built-in low-noise isolated power supply

Application area

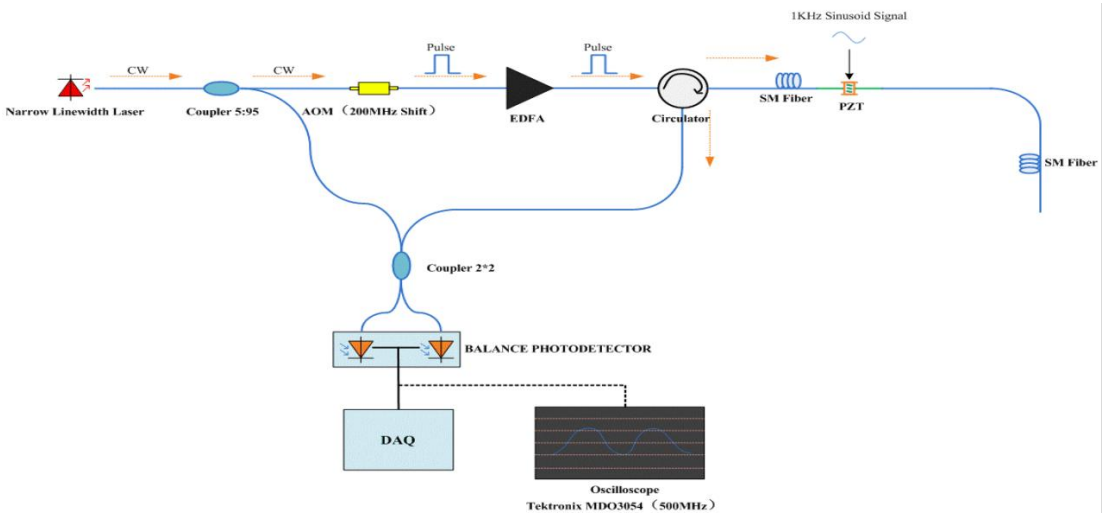
Distributed fiber optic sensing、 Laser wind radar、 Optical coherence tomography、 Spectral measurement、 ns-level optical pulse detection

General Parameters

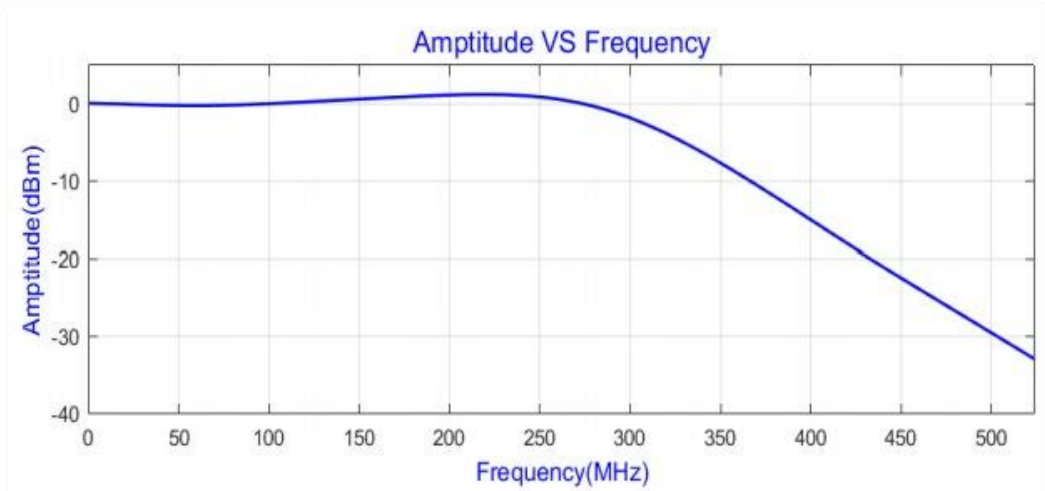
PN#	MBD-100M-A	MBD-200M-A	MBD-300M-A	MBD-400M-A	MBD-500M-A	MBD-800M-A	MBD-1G-A	MBD-1.5G-A	MBD-2G-A	MBD-2.5G-A	Unit
Detector type	InGaAs										
Wavelength	800~1700										nm
Bandwidth	100M	200M	300M	400M	500M	800M	1G	1.5G	2G	2.5G	Hz
Detector responsivity	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	A/W@1550nm
Transimpedance gain	30K	30K	30K	10K	5K	30K	30K	30K	15K	15K	V/A
Maximum input optical power	140	140	140	420	840	140	140	140	280	280	μW
NEP	5	5	5	7	7	9	9	9	9	9	pW/Sqrt(Hz)
Output impedance	50	50	50	50	50	50	50	50	50	50	Ω

Output coupling method	DC/AC	DC/AC	DC/AC	DC/AC	DC	AC	AC	AC	AC	DC	
Power supply voltage	5	5	5	5	5	12	12	12	12	12	V
Power supply current	0.3(max)	0.3(max)	0.3(max)	0.3(max)	0.3(max)	0.3(max)	0.3(max)	0.3(max)	0.3(max)	0.3(max)	A
Optical input	FC/APC（Free-space optical optional）										
RF output	SMA										
Dimensions	62*47*25					75*55*25					mm

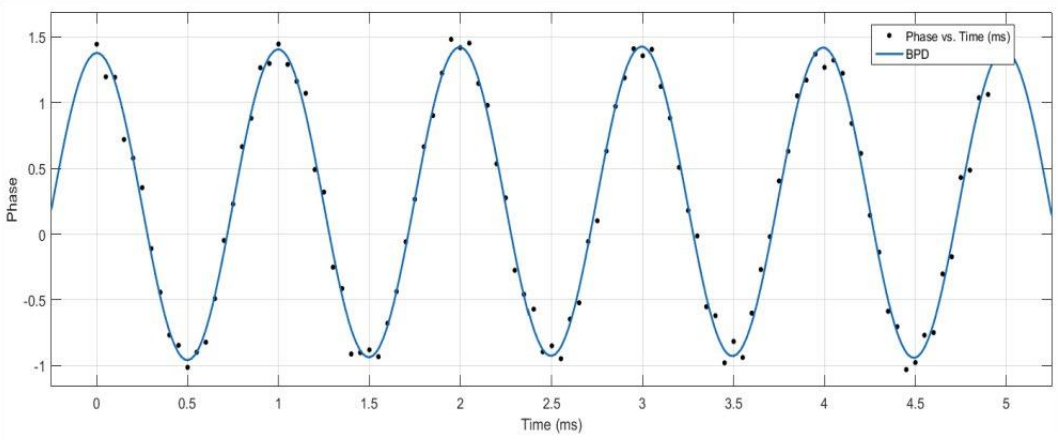
Test Result



Coherent detection distributed optical fiber sensing



300MHz Bandwidth response curve



PZT vibration point demodulation phase on optical fiber (1KHz)