

>10 GHz

Photodetectors

EOT's >10 GHz Photodetectors contain PIN photodiodes that utilize the photovoltaic effect to convert optical power into an electrical current.

When terminated into 50 Ω into an oscilloscope, the pulsewidth of a laser can be measured. When terminated into 50 Ω into a spectrum analyzer, the frequency response of a laser can be measured.

EOT's >10 GHz Photodetectors come with their own internal bias supply consisting of long-life lithium cells. Plugging a coaxial cable into the photodetector's SMA output connector and terminating into 50 Ω at the oscilloscope or spectrum analyzer is all that is required for operation.



FEATURES

- Small footprint
- Internal voltage bias
- DC to 22 GHz

OPTIONS

- External wall plug-in power supply available
- Fiber-coupled or free space options available
- Detector Material

APPLICATIONS

- Monitoring the output of Q-switched lasers
- Monitoring the output of mode-locked lasers
- Monitoring the output of externally modulated CW lasers
- High frequency, heterodyne applications
- Time domain and frequency response measurements

Specifications								
Part No. (Model)	120-10058-0001 (ET-3500)	120-10068-0001 (ET-3500F)	120-10071-0001 (ET-4000)	120-10081-0001 (ET-4000F)	120-10105-0001 (ET-5000)	120-10104-0001 (ET-5000F)	120-10140-0001 (ET-3600)	120-10142-0001 (ET-3600F)
Detector Material	InGaAs	InGaAs	GaAs	GaAs	InGaAs	InGaAs	InGaAs	InGaAs
Rise Time/Fall Time (ps)	<25 / <25	<25/ <25	<30 /<30	<30/<30	28 / 28	28 / 28	16 / 16	16 / 16
Responsivity ¹	>0.90 A/W at 1300 nm	>0.65 A/W at 1300 nm	0.53 A/W at 830 nm	0.38 A/W at 830 nm	1.3 A/W at 2000 nm	0.95 A/W at 2000 nm	> 0.70 A/W at 1300 nm	>0.70 A/W at 1300 nm
Power Supply (VDC)	6	6	3	3	3	3	3	3
Bandwidth (GHz)	>15	>15	>12.5	>2.5	>10	>10	>22	>22
Active Area Diameter (μm)	32	32	60	60	40	40	20	20
Dark Current	<3 nA	<3 nA	<0.5 nA	<0.5 nA	<1 μA	<1 μA	<1 nA	<1 nA
Acceptance Angle (1/2 angle)	15°	N/A	15°	N/A	20°	N/A	15°	N/A
Noise Equivalent Power ²	20 pW/√Hz at 1300 nm	28 pW/√Hz at 1300 nm	35 pW/√Hz at 830 nm	45 pW/√Hz at 830 nm	15 pW/√Hz at 2000 nm	20 pW/√Hz at 2000 nm	26 pW/√Hz at 1300 nm	26 pW/√Hz at 1300 nm
Maximum Linear Rating CW	10 mW	10 mW	10 mW	10 mW	3 mA	3 mA	10 mW	10 mW
Mounting (Tapped Holes)	8-32 or M4	8-32 or M4	8-32 or M4	8-32 or M4	8-32 or M4	8-32 or M4	8-32 or M4	8-32 or M4
Output Connector	SMA	SMA	SMA	SMA	SMA	SMA	SMA	SMA
Fiber Optic Connection ³	N/A	FC/UPC, SMF28e	N/A	FC/UPC, SMF28e	N/A	FC/UPC	N/A	FC/UPC, SMF28e

Notes:

1. Photodetectors have an internal 50 Ω termination. Responsivity data applicable to diode only. Detector output should be determined based on 1/2 the responsivity of that shown on graph.
2. Noise Equivalent Power (NEP) is determined via open circuit output.
3. Multi-mode fiber available. May limit bandwidth.
4. NOTE: All specifications apply for a 50 Ω termination unless otherwise noted.

High Speed Detector Responsivity