

25Gbps APD-TIA TO-CAN Series Photodiode



1250 -1650nm, 25G

DATASHEET

[Return to the Webpage](#)



Features

- $\varnothing 20\mu\text{m}$ Active Diameter
- Low Dark Current
- Excellent Stability

Applications

- 25GbE

The APDT is an InGaAs APD photodiode integrated with a ball lens and a high-speed transimpedance amplifier (TIA), supporting data rates up to 25 Gb/s with differential output. It offers a flat response across a wide operating temperature range and is available with single-mode and multimode fiber coupling options, making it versatile for various high-speed optical communication applications. The multimode fiber coupling uses fiber tip lens technology for high efficiency. A matching evaluation PCB is available, featuring up to 8 GHz 3 dB analog bandwidth and SMA RF interfaces, with a single connector for single-ended output and dual connectors for differential outputs, enabling convenient testing and system integration.

Due to their high sensitivity to electrostatic discharge, warranty coverage applies only to fully metal-covered modules on the benchtops, which include proper protection. Other versions of the lasers and photodetectors are not covered by any warranty. Please use them with great caution.

Specifications

Parameter	Min	Typical	Max	Unit
Active Diameter		20		μm
Bandwidth -3db		20		GHz
Supply Voltage	2.97	3.3	3.63	V
Supply Current		25	31	mA
Dark Current (@operating voltage)			1100	nA
Breakdown Voltage TIA ON (Vbr)	23	26	32	V
Operating Voltage		0.9*Vbr		V
APDChip Capacitance		40		fF
Different Output Resistance		100		Ω
Responsivity@1310nm, VBR*0.5, M=2 Pin=-20dbm	0.7	0.8		A/W
Reverse Voltage ^[1]			Vbr	V
Supply Voltage ^[1]	-0.4		4	V
Operating Temperature	-40		+85	$^{\circ}\text{C}$
Storage Temperature	-40		+100	$^{\circ}\text{C}$
Lead Solder Temperature/Time			260/10	$^{\circ}\text{C/s}$

Notes:

[1]. Absolute Maximum Ratings:



Note: The specifications provided are for general applications with a cost-effective approach. If you need to narrow or expand the tolerance, coverage, limit, or qualifications, please [click this link](#):

Rev 04/16/26

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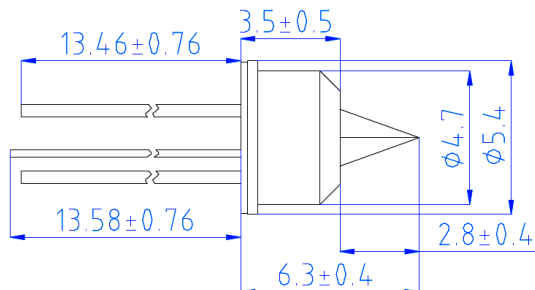
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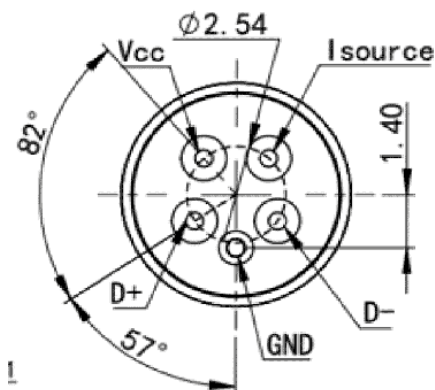
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Mechanical Dimension (mm) and PIN Assignment



*Product dimensions may change without notice. This is sometimes required for non-standard specifications.

PIN Configuration (Bottom View)



Pin	Function
Vcc (3.3V)	DC Power
GND	Ground
Dout(-)	Detector Signal Output Negative
Dout(+)	Detector Signal Output Positive
I source	Readout photodiode current

Ordering Information (Part Number)

Prefix	Wavelength	Speed	Driver PCB	Package				
APDT-	1230 - 1620 = 1	25 GHz = H 12 GHz = 1 5 GHz = 5	Non = 1 Single Output = 2 Differential = 3	Standard = 1 Special = 0	1	1	1	1

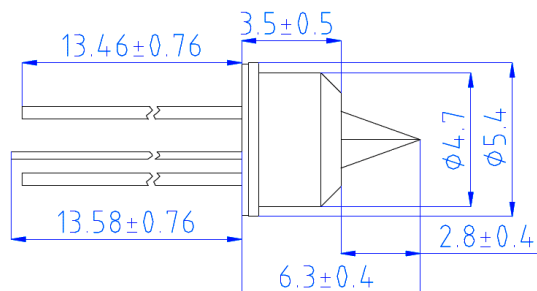
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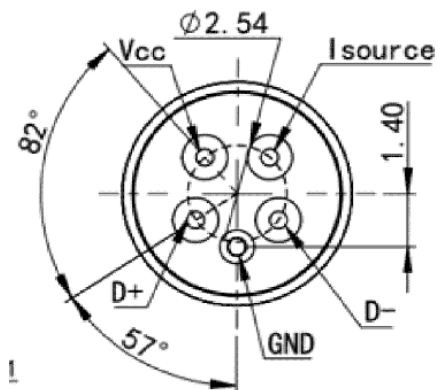
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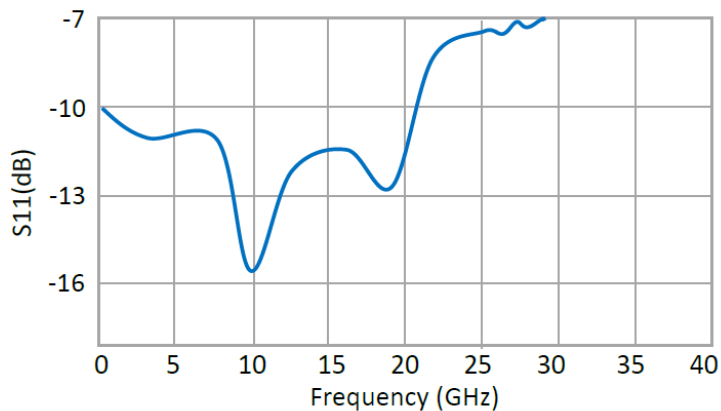
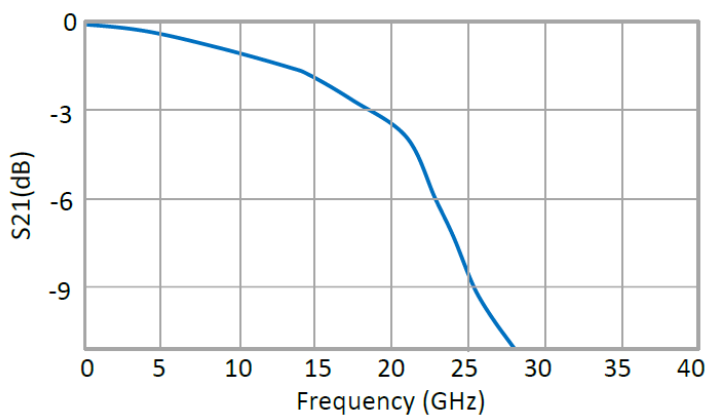
Detector Mounted on Driver



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Typical Performance Curves (Top 23°C, 801 PTs, 16 AVGs, 1.5% smoothing)

RF performance dependent on PCB design and optimization. Data shown with Ground-backed Co-planner waveguide. Single ended measurement, port two is terminated with 50 Ohm load.



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Caution Electrostatic Sensitivity



- Never touch laser diode and the module using hands
- Always use protections when handle a laser diode
- Recommend mounting the laser diode using an ionic gun and ESD finger cots



Laser Safety

This product meets the appropriate standard in Title 21 of the Code of Federal Regulations (CFR). FDA/CDRH Class 1M laser product. This device has been classified with the FDA/CDRH under accession number 0220191. All versions of this laser are Class 1M laser products, tested according to IEC 60825-1:2007 / EN 60825-1:2007. An additional warning for Class 1M laser products. For diverging beams, this warning shall state that viewing the laser output with certain optical instruments (for example eye loupes, magnifiers, and microscopes) within a distance of 100 mm may pose an eye hazard. For collimated beams, this warning shall state that viewing the laser output with certain instruments designed for use at a distance (for example telescopes and binoculars) may pose an eye hazard.

Wavelength = 1.3/1.5 μm .

Maximum power = 30 mW.



*Caution - Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

*IEC is a registered trademark of the International Electrotechnical Commission.