25G APD ROSA

up to 25.78Gb/s, 1250~1650 nm

DATASHEET

Return to the Webpage

The ROSA (Receiver Optical Sub-Assembly) is built on a proven transceiver fabrication platform, delivering low cost, high bandwidth, high coupling efficiency, and long-term stability. As a critical component in optical networks, it converts incoming optical signals into electrical signals. This ROSA variant is available with or without an integrated transimpedance amplifier (TIA), enabling high-fidelity analog output and making it particularly suitable for precision analog applications. The device sensitivity scales approximately with the photodetector's active area, while response speed is inversely proportional, reflecting a fundamental tradeoff between sensitivity and bandwidth; similarly, optical power handling increases with detector area due to thermal conductivity and power density limits. The bonding materials meet stringent low-outgassing requirements and are rated for operation up to 85 °C, while the mechanical package complies with Telcordia GR-1221 reliability standards and supports both PCB and panel mounting. 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 high sensitivity to electrostatic discharge (ESD), warranty coverage applies only to fully metal-encased modules and benchtop units with proper protection; other laser and photodetector versions are not covered and must be handled with extreme care.

Features

- High performance InGaAs/InP avalanche
- Integrated with amplifier
- Support bit rate up to 25.78Gb/s
- Operating wavelength of 1250~1650nm
- LC receptacle coaxial package
- Wide operating temperature range:-40°C to 85°C.

Applications

- 25G Optical Networks
- 5G Wireless

RoHS COMPLIANT

Specifications

Parameter	Min	Typical	Max	Unit
Wavelength	1250		1650	nm
Supply Voltage	2.85	3.30	3.47	V
Supply Current		25	35	mA
Breakdown Voltage (Vbr)	17		30	V
Temperature Dependency of Vbr	10	18	25	mV/°C
Responsivity (1310nm,Pin=-20dBm)	5.0			A/W
Sensitivity (1310nm, ER=8.5dB)		-22		dBm
Optical Return Loss (1310nm)			-26	dB
Storage Temperature	-40		+85	°C
Operating Temperature	-40		+85	°C
Relative Humidity	5		95	%
Supply Voltage	-0.5		4	V
Reverse Voltage (APD)			Vbr	V
Reverse Current (APD)			3	mA
Lead Soldering Temperature		360/5, 260/10		°C/s
Input Optical Power			3	mW

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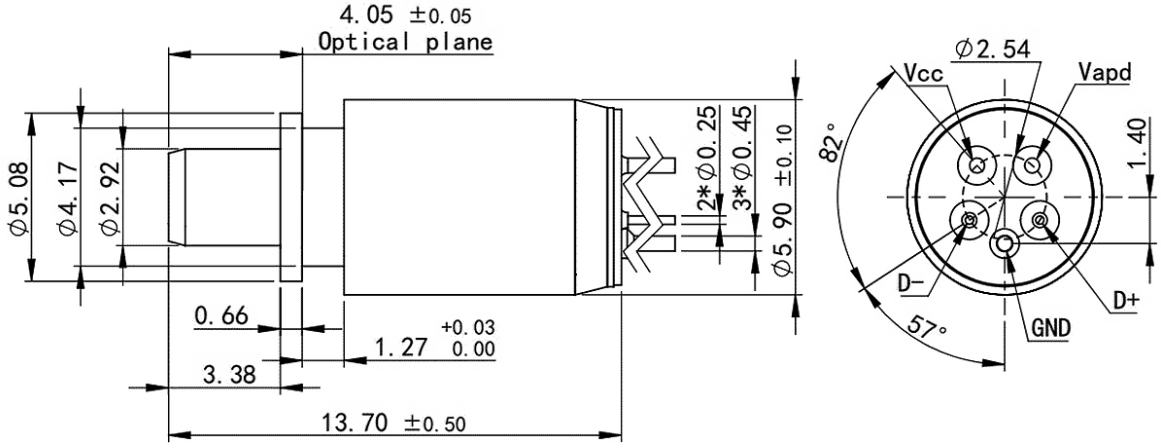
Mechanical Dimensions (mm)



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

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Ordering Information (Part Number)

	1	2	M	☐	2	1	1
Prefix	**Wavelength**	**Type**	**Bandwidth**	**PCB Driver**	**TIA**	**Package**	**Receptacle**
ROSA-	1230-1620nm = 1 400-1000nm [1] = 2 850nm = 8	InGaAs PIN = 1 InGaAs APD = 2 Si PIN = 3	0.1 GHz (~100 µm) = 1 1.25 GHz(~30 µm) = 2 3 GHz(~30 µm) = 3 5 GHz (~20 µm) = 5 10 GHz (~10 µm) = 6 2.5 GHz = 7 12 GHz = 8 15 GHz = 9 25 GHz = M	None =N Single Output = 1 Differential = 2	Non = 1 One Stage = 2 Two Stage = 3	Standard = 1 Special = 0	LC = 1 Special = 0

[1]. For Silicon only

[2]. For 850nm only

Application Notes

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