

InGaAs/Si Receiver Optical Sub Assembly (ROSA)

(with and without TIA, up to 25GHz, 850nm, 1310nm, 1550nm, LC receptacle)



DATASHEET

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Features

- High Bandwidth
- High Reliability
- Wide Operating Temperature

Applications

- Sensor
- Instrument

The ROSA (Receiver Optical Sub-Assembly) is built on a proven transceiver fabrication platform, offering industry-leading attributes in low cost, high bandwidth, high coupling efficiency, and long-term stability. As a key component in optical networks, it converts optical signals into electrical signals. This specific ROSA variant is designed with or without a transimpedance amplifier (TIA), enabling high-fidelity analog signal output and making it especially well-suited for precision analog applications. The sensitivity of the ROSA is approximately proportional to the photodetector's active area, while the response speed is inversely proportional — highlighting a tradeoff between sensitivity and bandwidth. The optical power handling is scaled with detector's area due to thermal conductivity and optical power density limit.

The bonding material used meets NASA's stringent low-outgassing requirements and is rated for high-temperature operation up to 85°C. The mechanical package is compliant with Telcordia GR-1221 reliability standards and supports both PCB and panel mounting configurations.

Due to their high sensitivity to electrostatic discharge, warranty coverage applies only to fully metal covered modules 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
Max input power	0.8		2	mW
Supply Voltage		3.3		V
Supply Current (CW)		26		mA
Wavelength	840		1600	nm
Bandwidth	0.05		25	GHz
Sensitivity (1310nm)		-10		dBm
Responsivity (1310nm)	0.7			A/W
Optical Return Loss (1310nm, 25GHz)			-27	dB
RSSI Offset Current (Vcc = 3.3V)			100	nA
Storage Temperature		-40 ~ +85		°C
Operating Temperature		-40 ~ +85		°C
Lead Solder Temperature		260		°C
Lead Solder Time		10		S

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[+1 781-935-1200](tel:+17819351200)

sales@agiltron.com

www.agiltron.com

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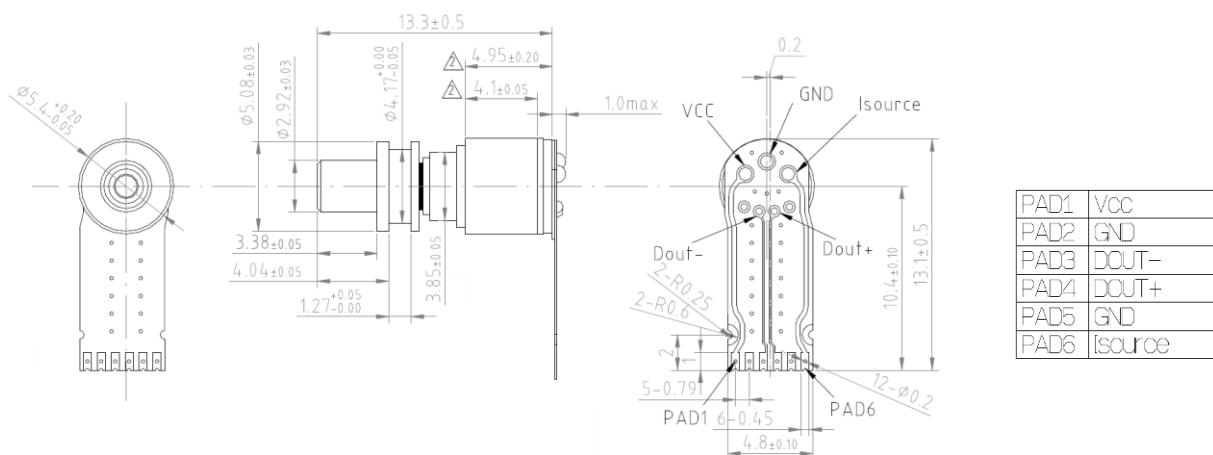
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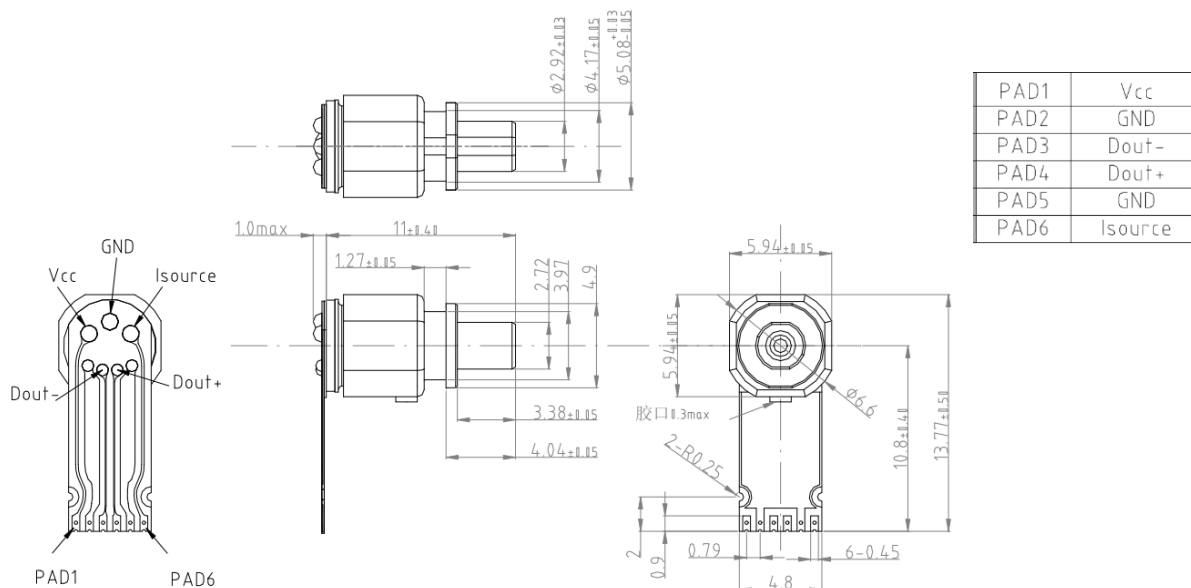


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Mechanical Dimensions (mm)



25Gbps 1310nm ROSA with flexible PCB and LC receptacle
(Vcc 3.3V, Isource measures photocurrent)



25Gbps 850nm multimode ROSA with flexible PCB and LC receptacle
(Vcc 3.3V, Isource measures photocurrent)

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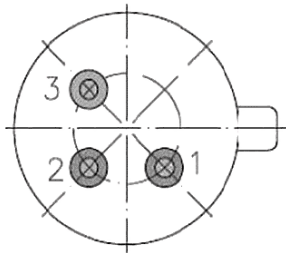
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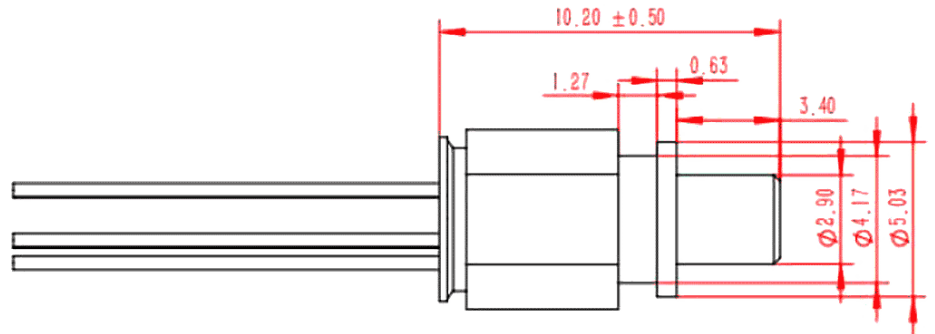
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Mechanical Dimensions (mm)

PIN:

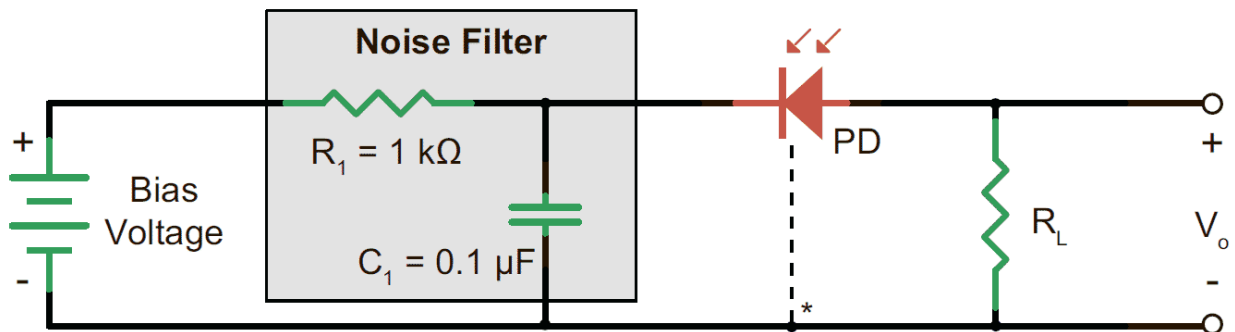


Type A:
【1】 PD +
【2】 PD -
【3】 CASE



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Recommend Circuit



* Case ground for PD with a third lead.

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Ordering Information (Part Number)

Prefix	Wavelength	Type	Bandwidth	Model	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	Single mode = 1 Multimode ^[2] = 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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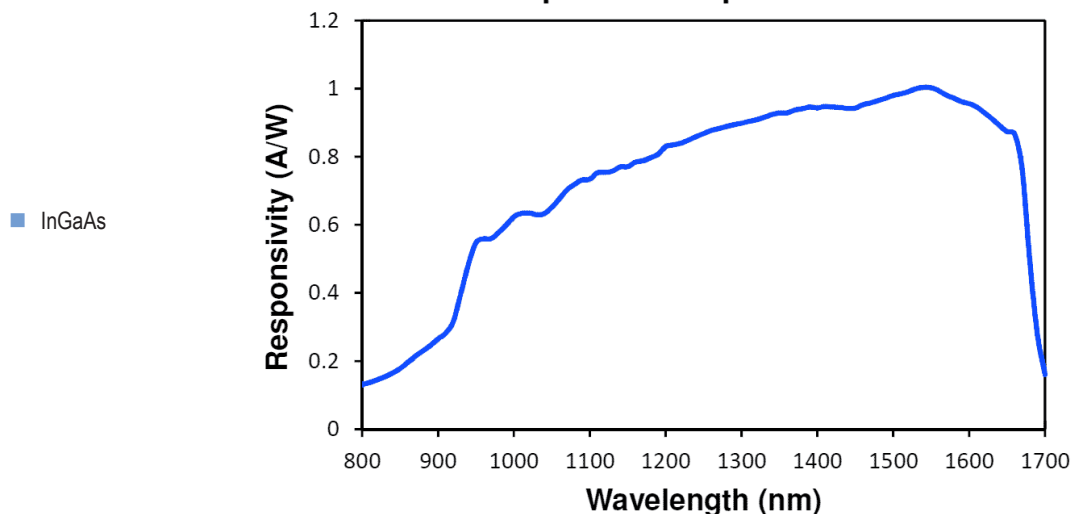
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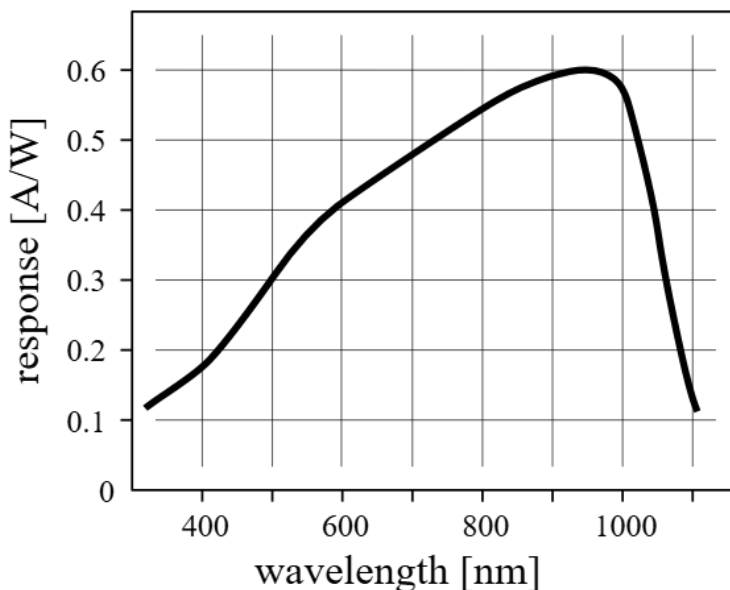
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Ordering Information (Part Number)

Spectral Response



■ Silicon



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