



# 1.25Gbps Receptacle InGaAs PIN Photodiode Receiver Module with Integrated TIA

## R13-1G-RYZ-VP

Data Sheet



### Description

The Lasermate R13-1G-RYZ-VP series is an InGaAs PIN photodiode receiver module with integrated transimpedance amplifier (TIA), optimized for operation within the 1100–1630 nm wavelength range. The R13-1G-RYZ-VP is offered in receptacle-style housings with FC or ST connectors. It features high optical sensitivity and supports high-speed data transmission up to 1.25 Gbps, making it ideal for broadband optical signal detection applications.

### Features

- High-speed operation up to 1.25 Gbps
- High sensitivity for efficient optical reception
- Integrated InGaAs PIN photodiode and TIA
- Hermetically sealed for long-term stability
- Single +3.3V power supply
- FC or ST receptacle interface for easy connectivity

### Applications

- SONET OC3, OC-12 / SDH STM-1, STM-4
- LAN

### Ordering Information

Model Number Format	R13-1G-RYZ-VP
R13 = Receiver	InGaAs/InP PIN-TIA photodiode
1G = Data Rate	1.25 Gbps
R = Package	Receptacle
Y = Connector	FC ( <b>FC</b> ), ST ( <b>ST</b> )
Z = Sensitivity	-22dBm ( <b>1</b> ), -24dBm ( <b>2</b> ), -26dBm ( <b>3</b> )
V = Supply voltage	3.3V ( <b>3</b> )
P = Pin configuration	4-pin ( <b>4</b> ); 5-pin ( <b>5</b> )

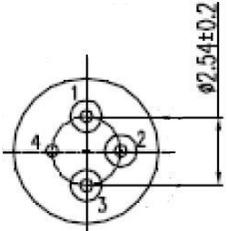
## Specifications

Absolute Maximum Ratings			
Parameters	Symbol	Value	Unit
Storage temperature	Tstg	-40~+85	°C
Operating case temperature	Top	-40~+85	°C
Peak optical power	Po	0	dBm
Power supply Voltage	Vp	3.6	V
Soldering temperature	Stemp	260	°C
Soldering time	Stime	10	sec

Electro-Optical Characteristics (CW @ T <sub>c</sub> = 25°C unless otherwise noted)						
Parameters	Symbol	Min.	Typ.	Max.	Unit	Conditions
Wavelength	$\lambda$	1100		1630	nm	
Bandwidth	BW	700			MHz	Vcc
Low Frequency Cut-off	LF			100	kHz	Vcc
Supply Current	Icc		22	35	mA	Vcc, no load
Sensitivity	S	-22			dBm	$\lambda=1310\text{nm}$ , @1244.16Mbps, PRBS7, ER=10dB, BER=1E <sup>-10</sup>
		-24				
		-26				
Saturation power	Psat	0			dBm	$\lambda=1310\text{nm}$ , @1244.16Mbps, PRBS7, ER=10dB, BER=1E <sup>-10</sup>
Differential Responsivity	Rd	12		30	mV/ $\mu$ W	Rload = 100ohm, P = -22Bm, $\lambda=1310\text{nm}$
Rise/Fall Time	$\tau_r/\tau_f$			400	ps	Vcc=3.3V, 20%~80%
Single Ended Impedance	Ro		50		ohm	

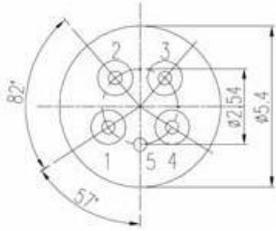
Pin Configuration

**4-pin:**



Number	Function
1	VCC
2	Dout-
3	Dout+
4	GND

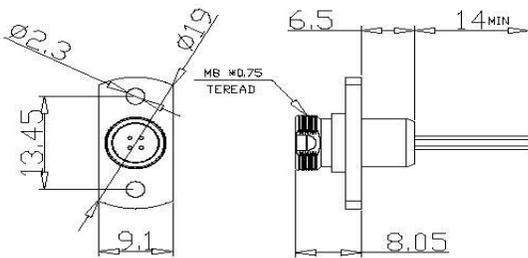
**5-pin:**



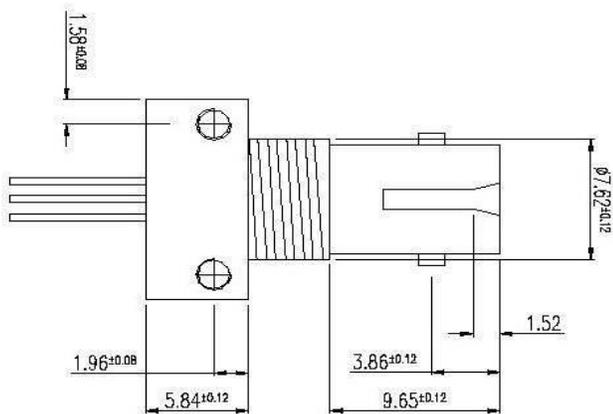
Number	Function
1	Dout +
2	Vcc
3	Isource
4	Dout -
5	GND

Outline Dimensions (unit: mm)

FC Receptacle



ST Receptacle



Note: Specifications are subject to change without notice.