

InGaAs PIN photodiode with preamp G9283-14

ROSA type, 1.3/1.55 μm , 2.5 Gbps



Features

- $\phi 1.25$ mm sleeve type ROSA (Receiver Optical Sub-Assembly)
- High-speed response: 2.5 Gbps
- High gain with AGC (Auto Gain Control): 1 V/mW (-17 dBm)
- Low power supply voltage: 3.3 V, 5 V
- Differential output
- Sensitivity: 1 to -23 dBm

Applications

- SDH/SONET
- Optical fiber communication

■ Absolute maximum ratings (Ta=25 °C)

Parameter	Symbol	Value	Unit
Supply voltage	Vcc	-0.5, +6	V
Operating temperature	Topr	-20 to +70 *1	°C
Storage temperature	Tstg	-40 to +85 *1	°C

*1: No condensation

■ Electrical and optical characteristics

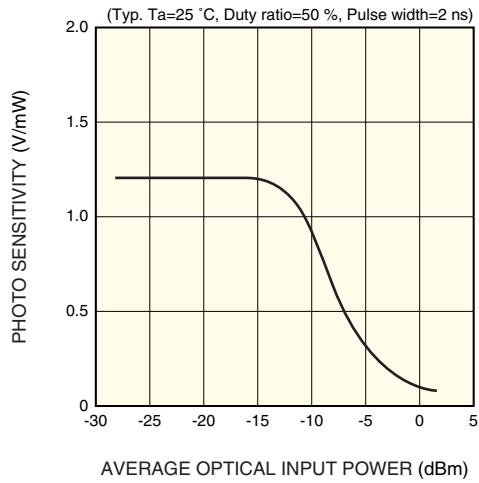
(Ta=25 °C, Vcc=3.3 V or 5 V, Vee=0 V, RL=50 Ω *2, λ =1310 nm, unless otherwise noted)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Photo sensitivity *2	S	Pin= -17 dBm *3	0.5	1.0	-	V/mW
Supply current	Icc	Dark state, Vcc=3.3 V	-	35	48	mA
		RL= ∞ Vcc=5.0 V	-	42	-	
Output bias voltage	Vo	Dark state, RL= ∞ , Vcc=3.3 V	-	3.0	-	V
Cut-off frequency *2	fc	Pin= -17 dBm, -3 dB	1700	2000	-	MHz
Low cut-off frequency *2	fc-L	Pin= -17 dBm, -3 dB	-	30	-	kHz
Noise equivalent power *2, *3	NEP	Dark state, to 1.87 GHz	-	370	850	nWrms
Minimum receivable sensitivity	Pmin	2.5 Gbps, NRZ, PN=23, BER=10 ⁻¹⁰ , Extinction ratio=8.2 dB	-	-23	-	dBm
Maximum receivable sensitivity	Pmax		-	1	-	

*2: Output: Capacitive coupling

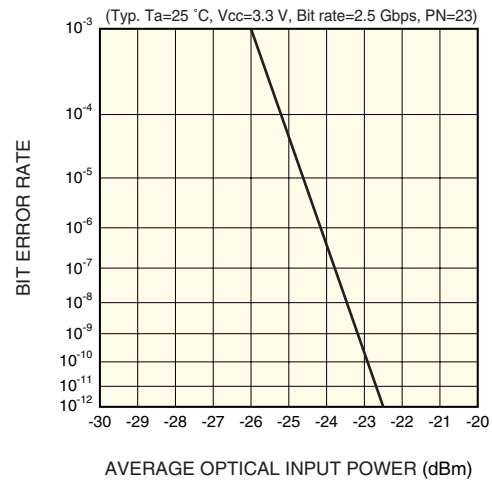
*3: Single-ended (Vout+) mesurement

■ Photo sensitivity vs. average optical input power



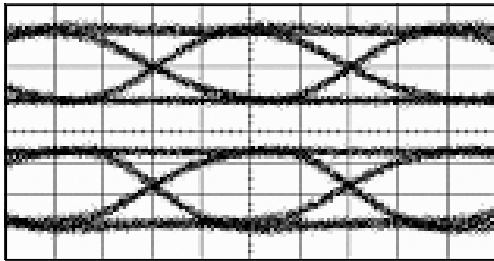
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■ Bit error rate



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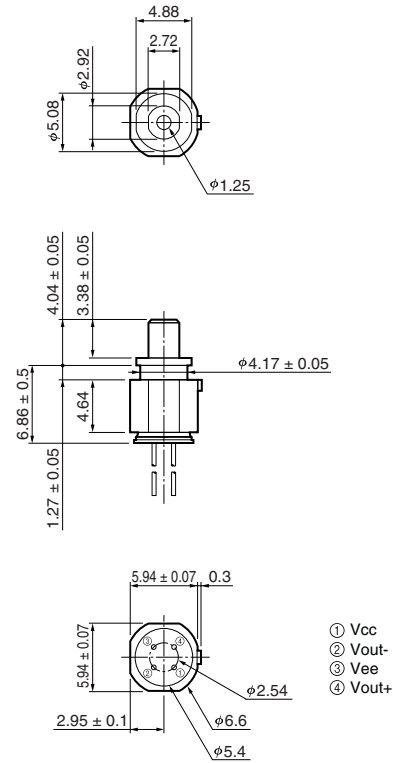
■ Eye diagram



Bit rate=2.5 Gbps, PN=23
 $\lambda=1310\text{ nm}$, Pin= -20 dBm

■ Dimensional outline

(unit: mm, unless otherwise noted: ± 0.15)



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