

GaAs PIN photodiode with preamp G9286-14

ROSA type, 850 nm, 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): 0.65 V/mW (-17 dBm)
- Low power supply voltage: 3.3 V, 5 V
- Differential output
- Sensitivity: 1 to -22 dBm Typ.

Applications

- Gigabit Ethernet
- Fiber channel

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

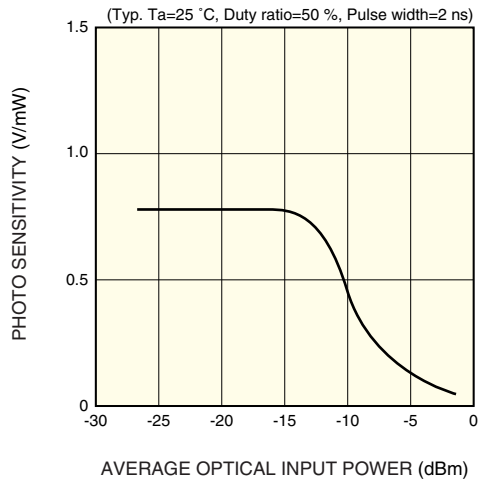
(Ta=25 °C, Vcc=3.3 V or 5 V, Vee=GND, RL=50 Ω , λ =850 nm, unless otherwise noted)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Photo sensitivity *2, *3	S	Pin= -17 dBm *3 (f=100 MHz)	0.4	0.65	-	V/mW
Supply current	Icc	Dark state, RL= ∞	Vcc=3.3 V	35	50	mA
			Vcc=5 V	42	-	
Output bias voltage	Vo	Dark state, RL= ∞ , Vcc=3.3 V	-	3.0	-	V
Cut-off frequency *2, *3	fc	Pin= -17 dBm, -3 dB	-	1900	-	MHz
Low cut-off frequency *2	fc-L	Pin= -17 dBm, -3 dB	-	30	-	kHz
Noise equivalent power *2, *3	NEP	Dark state, to 1866 MHz	-	800	-	nWrms
Minimum receivable sensitivity	Pmin	2.5 Gbps, NRZ, PN=23, BER=10 ⁻¹⁰ , Extinction ratio=9 dB	-	-22	-	dBm
Maximum receivable sensitivity	Pmax		-	+1	-	

*2: Output: Capacitive coupling

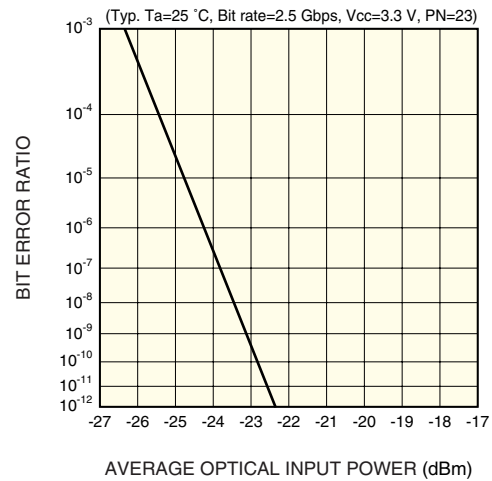
*3: Single-ended (Vout+) measurement

■ Photo sensitivity vs. average optical input power



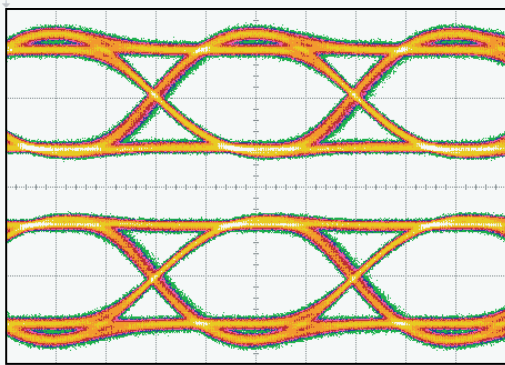
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■ Bit error rate



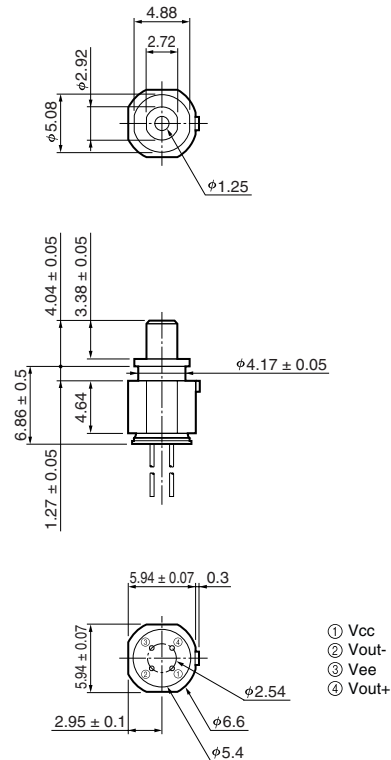
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■ Eye diagram



Bit rate=2.5 Gbps. PN =23
 $\lambda=850\text{ nm}$, $P_{in}=-15\text{ dBm}$, $V_{cc}=3.3\text{ V}$

■ Dimensional outline

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

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Cat. No. KGPD1011E03
Apr. 2003 DN