

FEATURES

- Data rate up to 622Mb/s
- High Responsivity: 0.85A/W at 1,310nm
- High temperature operation up to 85°C

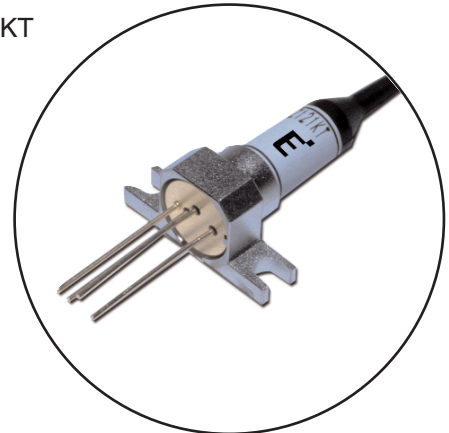
APPLICATIONS

- Medium bit rate standard medium haul optical transmission system at STM-4 (OC-12)

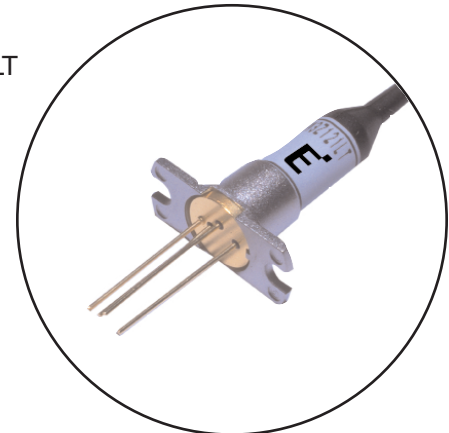
DESCRIPTION

These PIN preamplifiers use an InGaAs PIN with a GaAs IC preamplifier. Package style is a hermetically sealed, epoxyless coaxial package with a multimode fiber pigtail.

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ABSOLUTE MAXIMUM RATINGS (T_a=25°C)

Parameter	Symbol	Ratings	Unit
Storage Temperature	T _{stg}	-40 to +85	°C
Operating Case Temperature	T _{op}	-40 to +85	°C
IC Supply Voltage	V _{SS}	-7 to +0	V
PD Supply Voltage	V _r	0 to +20	V
PD Reverse Current	I _r	500	μA
Maximum Input Power	P _{o max}	0	dBm

OPTICAL & ELECTRICAL CHARACTERISTICS (T_a=-40° to +85°C, V_{SS}=-5.2V, V_r=5V level and λ=1,310/1,550nm unless otherwise specified)

Parameter	Symbol	Test Conditions	Limits			Unit
			Min.	Typ.	Max.	
Responsivity	R	λ=1,310nm	0.8	0.85	-	A/W
Transimpedance	Z _t	AC, RL=50Ω, Pin <-15dBm	3.0	3.5	-	KΩ
Bandwidth	BW	AC-Coupled, RL=50Ω, -3dBm from 1MHz	435	-	-	MHz
Sensitivity	P _r	622Mb/s NRZ, 2 ²³ -1 P.R.B.S., B.E.R.=10 ⁻¹⁰ T _a =25°C	-	-32.5	-32	dBm
		T _a =-40 to +85°C	-	-31	-30.5	dBm
Maximum Input Optical Power	P _{max}	Note (1)	-7	-	-	dBm
Power Supply Current	I _{SS}	-	-	-	40	mA
Recommended Supply	V _{SS}	-	-5.46	-5.2	-4.94	V
PD Voltage	V _r	-	5	-	20	V
Optical Return Loss	ORL	-	30	-	-	dB
Equivalent Input Current Density	i _n	avg. within 435MHz	-	2.64	3.2	pA/√Hz

Note: (1) Maximum Input Optical Power, P_{max} is defined as the optical power when the variation of F.W.H.M. of the output waveform is less than 10% compared with that of the low input; optical power level.

(2) No data is accompanied with each device.

(3) Optical characteristics are specified on the condition that single mode fiber is used as the optical source for testing.

Fig. 1 Normalized Output Voltage as a function of Peak Photo Current

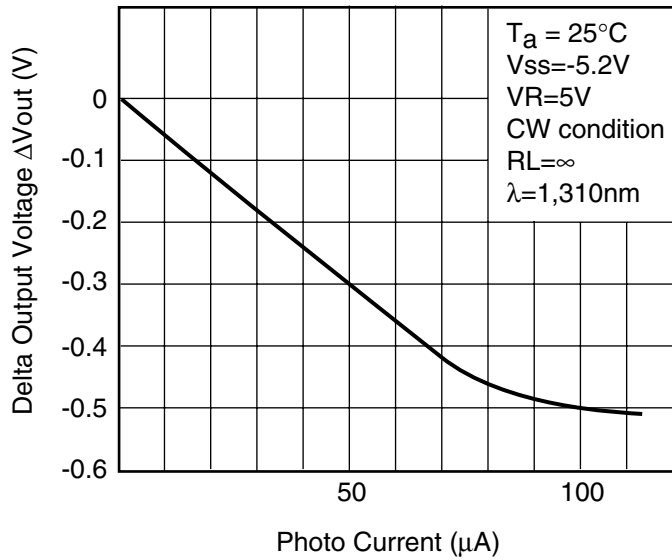


Fig. 2 Relative Frequency Response

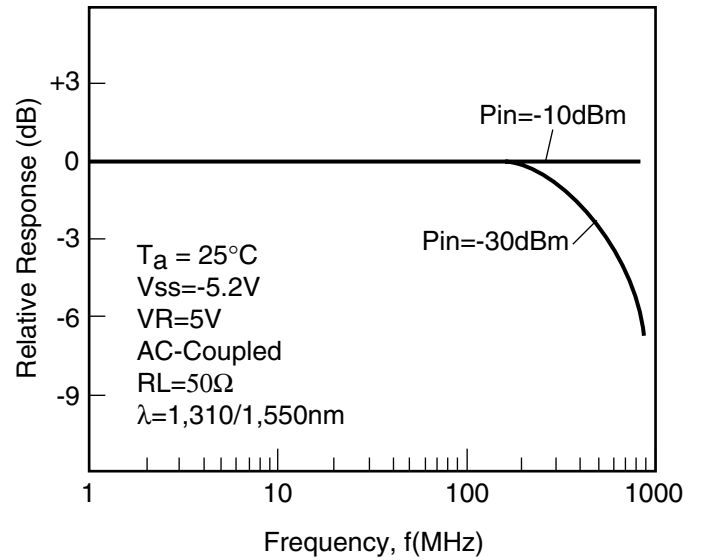


Fig. 3 Equivalent Input Noise Current Density

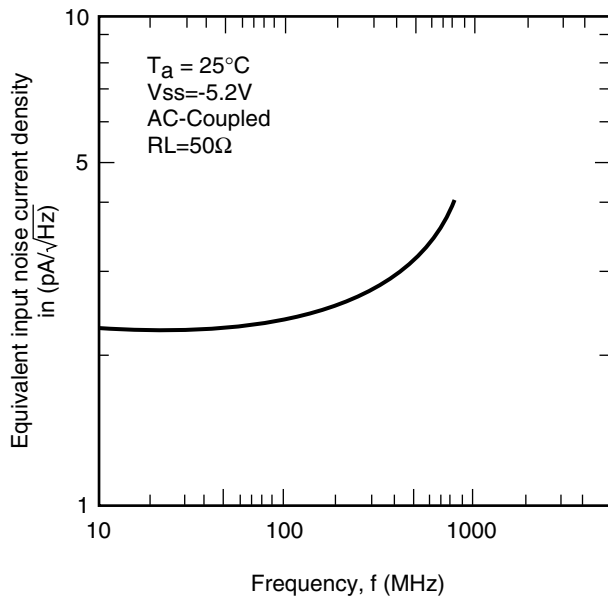


Fig. 4 Eye diagram with a 1,310nm, 622Mbps NRZ, $2^{23}-1$ PRBS incident signal at $T_c = 25^\circ C$

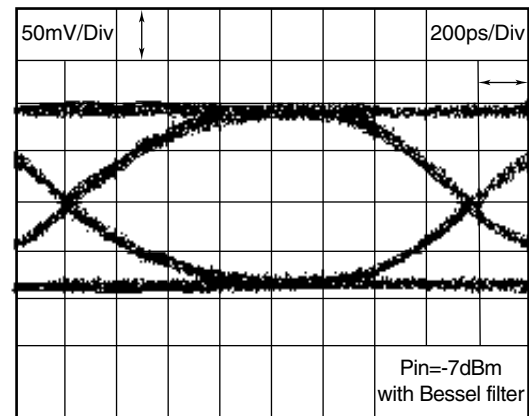
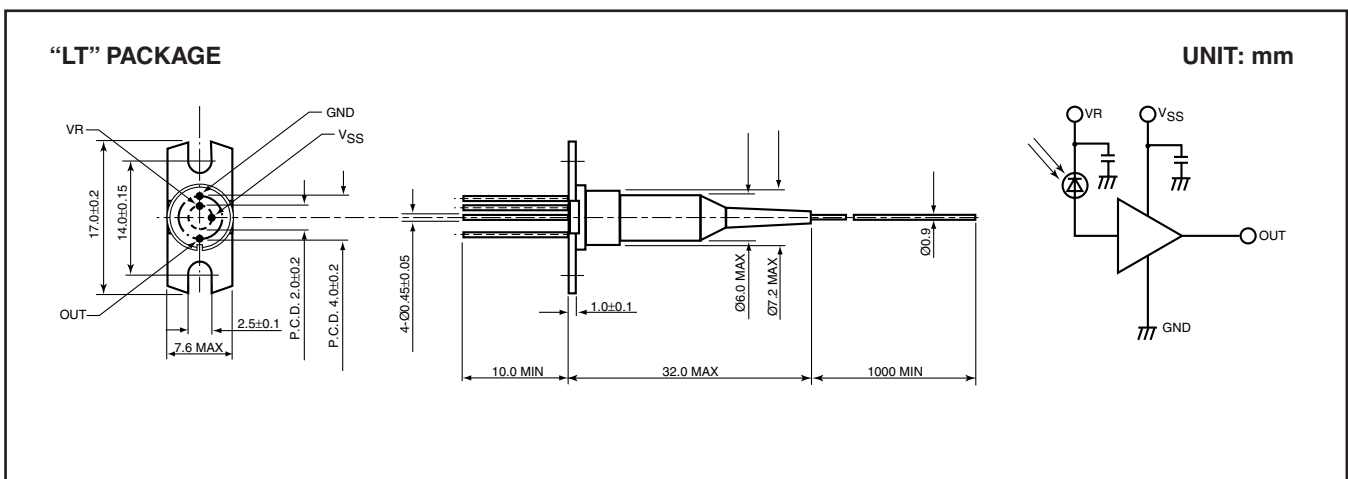
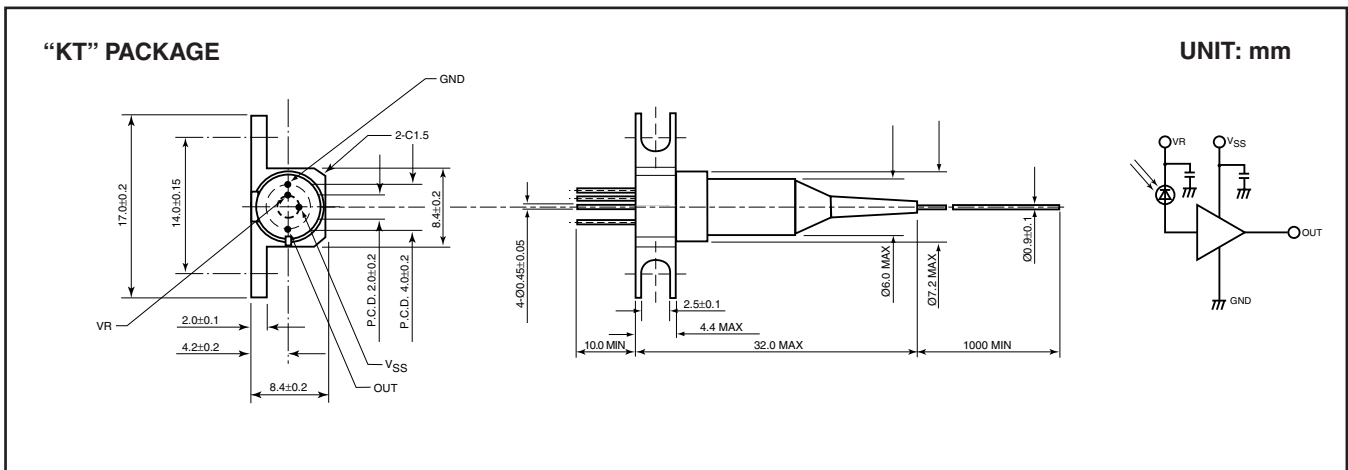
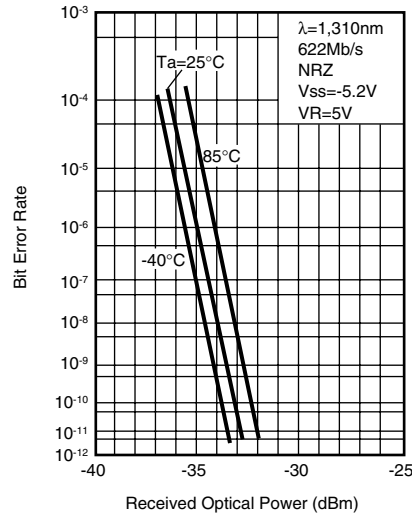


Fig. 5 Bit Error Rate at 1,310nm and a 622Mbps NRZ 2²³-1 PRBS for various case temperature



For further information please contact:

Eudyna Devices USA Inc.

2355 Zanker Rd.
San Jose, CA 95131-1138, U.S.A.
TEL: (408) 232-9500
FAX: (408) 428-9111
www.us.eudyna.com

Eudyna Devices Europe Ltd.

Network House
Norreys Drive
Maidenhead, Berkshire SL6 4FJ
United Kingdom
TEL: +44 (0) 1628 504800
FAX: +44 (0) 1628 504888

Eudyna Devices Asia Pte Ltd.

Hong Kong Branch
Rm. 1101, Ocean Centre, 5 Canton Rd.
Tsim Sha Tsui, Kowloon, Hong Kong
TEL: +852-2377-0227
FAX: +852-2377-3921

Eudyna Devices Inc.

Sales Division
1, Kanai-cho, Sakae-ku
Yokohama, 244-0845, Japan
TEL: +81-45-853-8156
FAX: +81-45-853-8170

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