InGaAs-PIN/Preamp Receiver — *FRM3Z232LY*

FEATURES

- Data rate up to 2.7Gb/s
- Sensitivity: -25dBm (typ.)
- Small co-axial package with single-mode fiber
- Differential Electrical Output
- Preamplifier Power Supply Voltage: +3.3V
- Wide operating temperature range: -40 to +85°C

APPLICATIONS

This PIN detector preamp is intended to function as an optical receiver in intermediate reach SONET, SDH, and DWDM systems operating up to 2.7Gb/s. The device operates in both the 1,310 and 1,550nm wavelength windows. The detector preamplifier is DC coupled and has a differential electrical output.

DESCRIPTION

This PIN preamplifier uses an InGaAs PIN chip with GaAs transimpedance preamplifier. The LY package is secured by a vertical flange for easy assembly. The package is connected with a single-mode fiber by Nd: YAG welding. This device is in compliance with ITU-T recommendations and meets the Telcordia requirements.

ABSOLUTE MAXIMUM RATINGS (T_C=25°C, unless otherwise specified)

Parameter	Symbol	Ratings	Unit
Storage Temperature	T_{stg}	-40 to +85	°C
Operating Temperature	T_{op}	-40 to +85	°C
Supply Voltage	V_{DD}	0 to 4.5	V
PIN Reverse Voltage	V_R	0 to 20	V
PIN Reverse Current	I_R (Peak)	2.0	mA

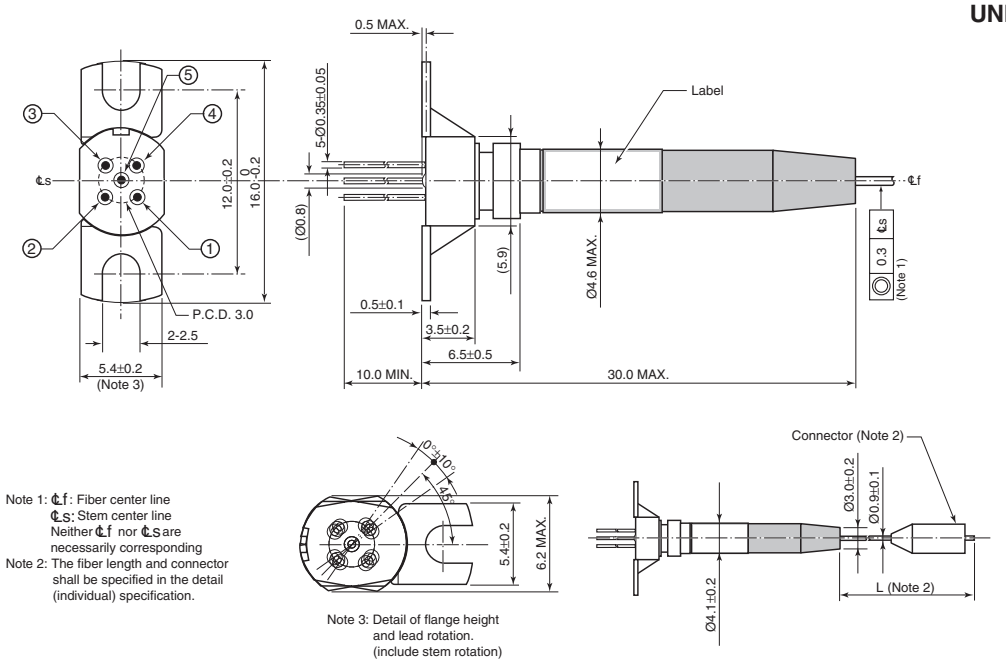
OPTICAL & ELECTRICAL CHARACTERISTICS
(T_C=25°C, λ=1,550nm, V_R=+5.0V, V_{DD}=+3.3V, unless otherwise specified)

Parameter	Symbol	Test Conditions	Limits			Unit
			Min.	Typ.	Max.	
PIN-PD Responsivity	R13	λ = 1,310nm, M=1	0.75	0.80	-	A/W
	R15	λ = 1,550nm, M=1	0.80	0.85	-	
	R16	λ = 1,610nm, M=1	-	0.70	-	
AC Transimpedance	Z_t	Pin=-20dBm, f=100MHz, Single-ended	1800	2200	2600	Ω
Bandwidth	BW	Pin=-20dBm, -3dBm from 1MHz	2.2	2.5	-	GHz
Lower Cut-off Frequency	fcl		-	50	75	kHz
Peaking	dpk	Pin=-20dBm, from 1MHz	-	-	2	dB
Group Delay Deviation	GD	Pin=-20dBm, from 500MHz to 1.75GHz	-	60	-	psec
Output Return Loss	S22	Up to 1.75GHz	10	-	-	dB
		Up to 2.5GHz	5	-	-	
Equivalent Input Noise Current Density	in	Average within 2.2GHz	-	9.5	11.0	pA/$\sqrt{Hz}$
Sensitivity	P_r	2.488Gb/s, NRZ, PRBS=2^{23}-1, B.E.R.=$10^{-10,}$ Rext=-14dB, Tc=25°C	-	-25	-24	dBm
		Tc=-40 to +85°C	-	-24	-22	
Maximum Overload	Pmax	2.488Gb/s, NRZ, PRBS=2^{23}-1, B.E.R.=$10^{-10,}$	0	-	-	dBm
		(Note 2)	-3	-	-	
Maximum Output Voltage Swing	Vclip	Saturated Output Voltage	450	550	800	mV
Optical Return Loss	ORL		30	-	-	dB
Power Supply Current	I_{DD}		-	45	70	mA
Power Supply Voltage	V_{DD}		3.15	3.30	3.45	V

Note 1: All the parameters are measured with 50Ω AC-coupled.
Note 2: Defined by a 10% distortion of the wave form.

Notes

"LY" PACKAGE **UNIT: mm**



Note 1: ℄f : Fiber center line
℄s: Stem center line
Neither ℄f nor ℄s are necessarily corresponding
Note 2: The fiber length and connector shall be specified in the detail (individual) specification.

Note 3: Detail of flange height and lead rotation. (include stem rotation)

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

CAUTION

Eudyna Devices Inc. products contain **gallium arsenide (GaAs)** which can be hazardous to the human body and the environment. For safety, observe the following procedures:

- **Do not put this product into the mouth.**
- **Do not alter the form of this product into a gas, powder, or liquid through burning, crushing, or chemical processing as these by-products are dangerous to the human body if inhaled, ingested, or swallowed.**
- **Observe government laws and company regulations when discarding this product. This product must be discarded in accordance with methods specified by applicable hazardous waste procedures.**