

FEATURES

- 5-pin coaxial ROSA (Receiver Optical Subassembly) with LC Receptacle
- InGaAs-PIN PD with 3.3V pre-amplifier
- Wide Band: 2.2GHz
- Data rate up to 2.7Gb/s
- Differential Output
- High Sensitivity: -25dBm typ.
- Operating Case Temperature: -40°C to 80°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 has a differential electrical output.

DESCRIPTION

This PIN preamplifier uses an InGaAs PIN chip with GaAs transimpedance preamplifier. The FY package is a 5-pin coaxial ROSA (Receiver Optical Subassembly) with LC receptacle. 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
		Min.	Max.	
Storage Temperature	T _{stg}	-40	+85	°C
Operating Temperature	T _{op}	-40	+85	°C
Supply Voltage	V _{DD}	0	4.5	V
PIN Reverse Voltage	V _R	0	+20	V
PIN Reverse Current	I _R	-	3(peak)	mA

FRM3Z232FY InGaAs-PIN/Preamp Receiver

OPTICAL & ELECTRICAL CHARACTERISTICS

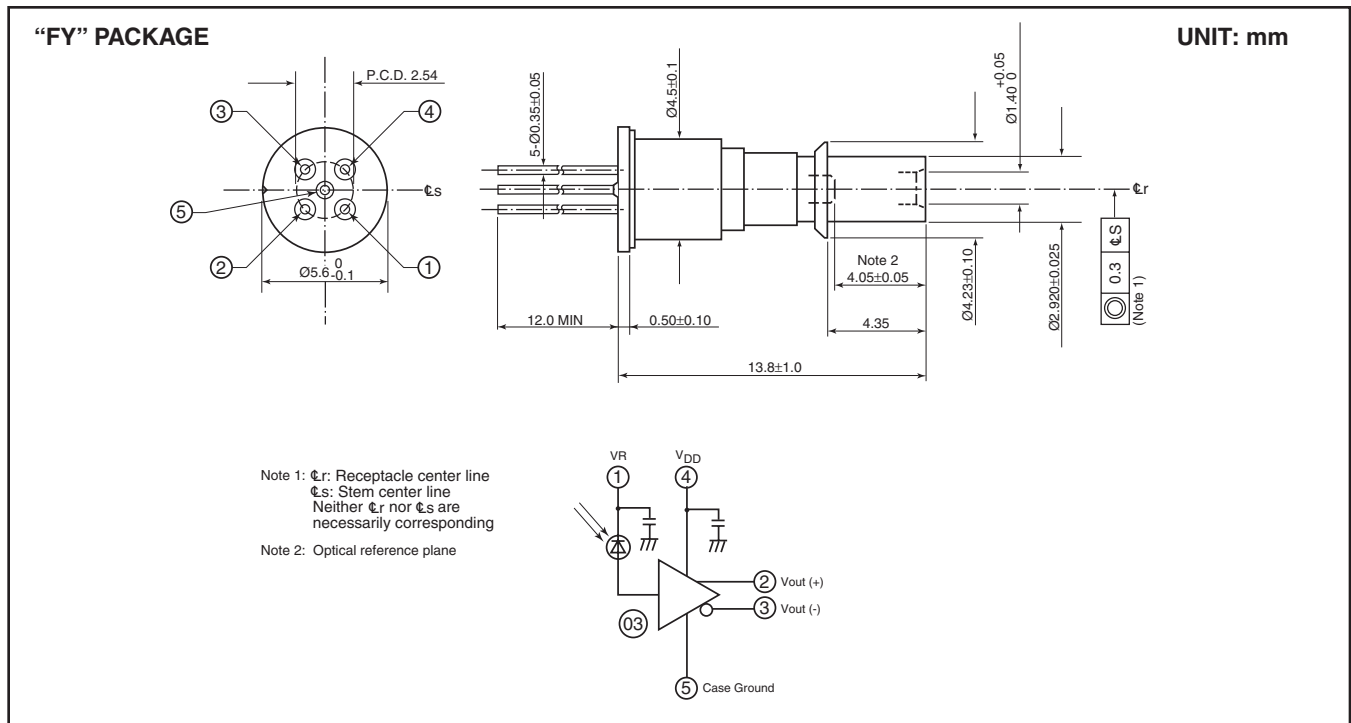
(T_C=25°C, λ=1,550nm, V_R=+5.0V or +3.3V, V_{DD}=+3.3V, unless otherwise specified)

Parameter	Symbol	Test Conditions			Limits			Unit
					Min.	Typ.	Max.	
PIN Responsivity	R	$\lambda = 1,310\text{nm}$			0.75	0.80	-	A/W
		$\lambda = 1,550\text{nm}$			0.80	0.85	-	
		$\lambda = 1,610\text{nm}$			-	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	f _{cl}				-	50	75	kHz
Peaking	d _{pk}	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	i _n	Average within 2.2GHz			-	9.5	11.0	pA/ $\sqrt{\text{Hz}}$
Sensitivity	P _r	2.48832Gb/s, NRZ, PRBS=2 ²³ -1, B.E.R.=10 ⁻¹⁰	R _{ext} =14dB	25°C	-	-25	-24	dBm
				-40°C ~ 85°C	-	-24	-22	
			R _{ext} =10dB, 25°C		-	-24	-	
Maximum Overload	P _{max}	2.48832Gb/s, NRZ, PRBS=2 ²³ -1, B.E.R.=10 ⁻¹⁰ ,			0	-	-	dBm
		Note (2)			-3	-	-	
Maximum Output Voltage Swing	V _{clip}	Saturated Output Voltage			450	550	800	mV
Optical Return Loss	ORL				27	-	-	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



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.

Eudyna Devices Inc. reserves the right to change products and specifications without notice. The information does not convey any license under rights of Eudyna Devices Inc. or others.

© 2004 Eudyna Devices USA Inc.
 Printed in U.S.A.