

NR3316TM

RECEIVER

R08DS0020EJ0100

Rev.1.00

PIN-PD RECEIVER WITH INTERNAL PRE-AMPLIFIER FOR 10 Gb/s APPLICATIONS

Aug 17, 2010

DESCRIPTION

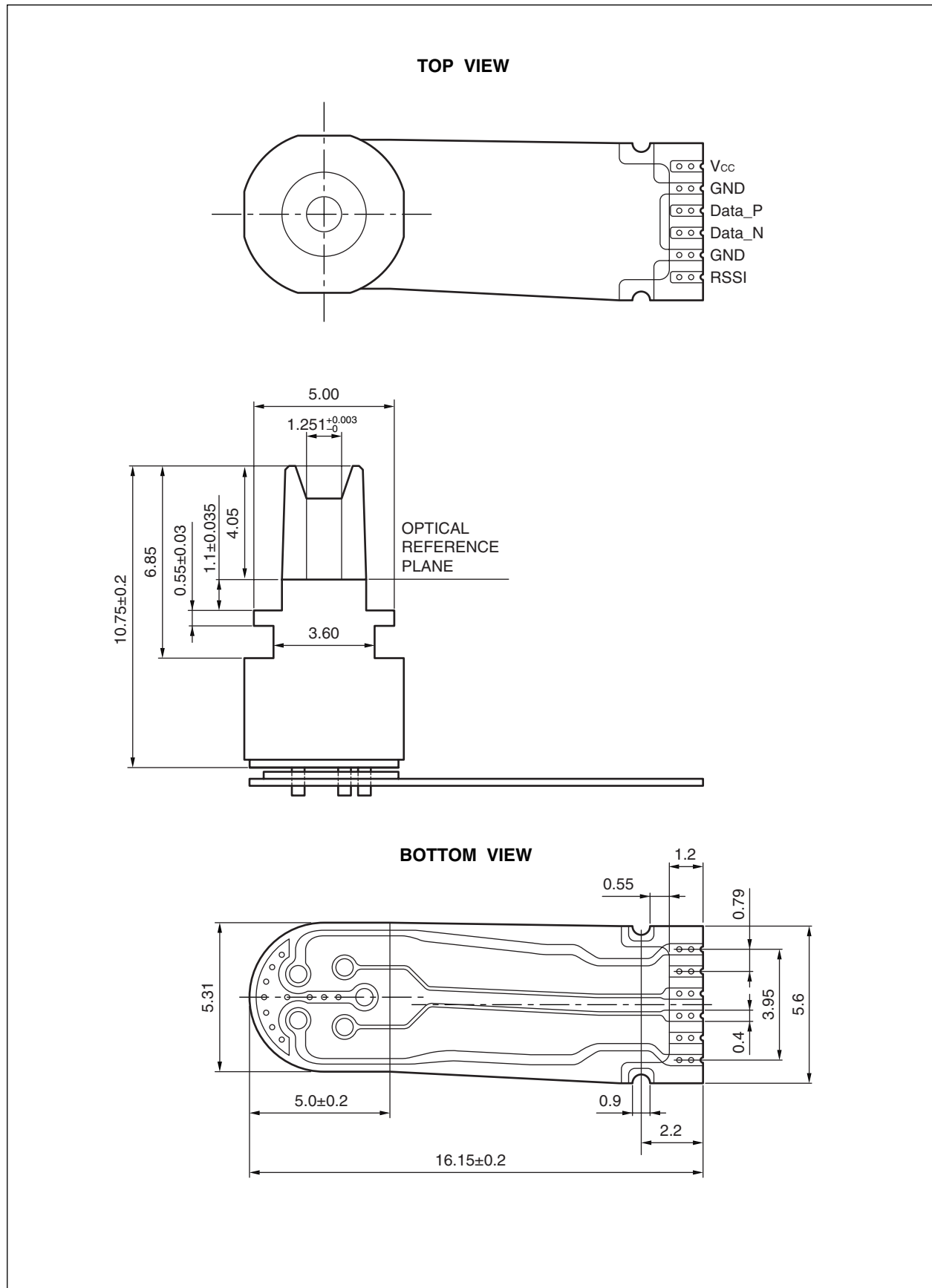
The NR3316TM product consists of InGaAs PIN ROSAs (Receiver Optical Sub-Assembly) with internal pre-amplifiers designed for 10 Gb/s optical transceivers such as the XFP. These modules are ideal as receivers for IEEE 10G BASE and SONET OC-192 systems.

FEATURES

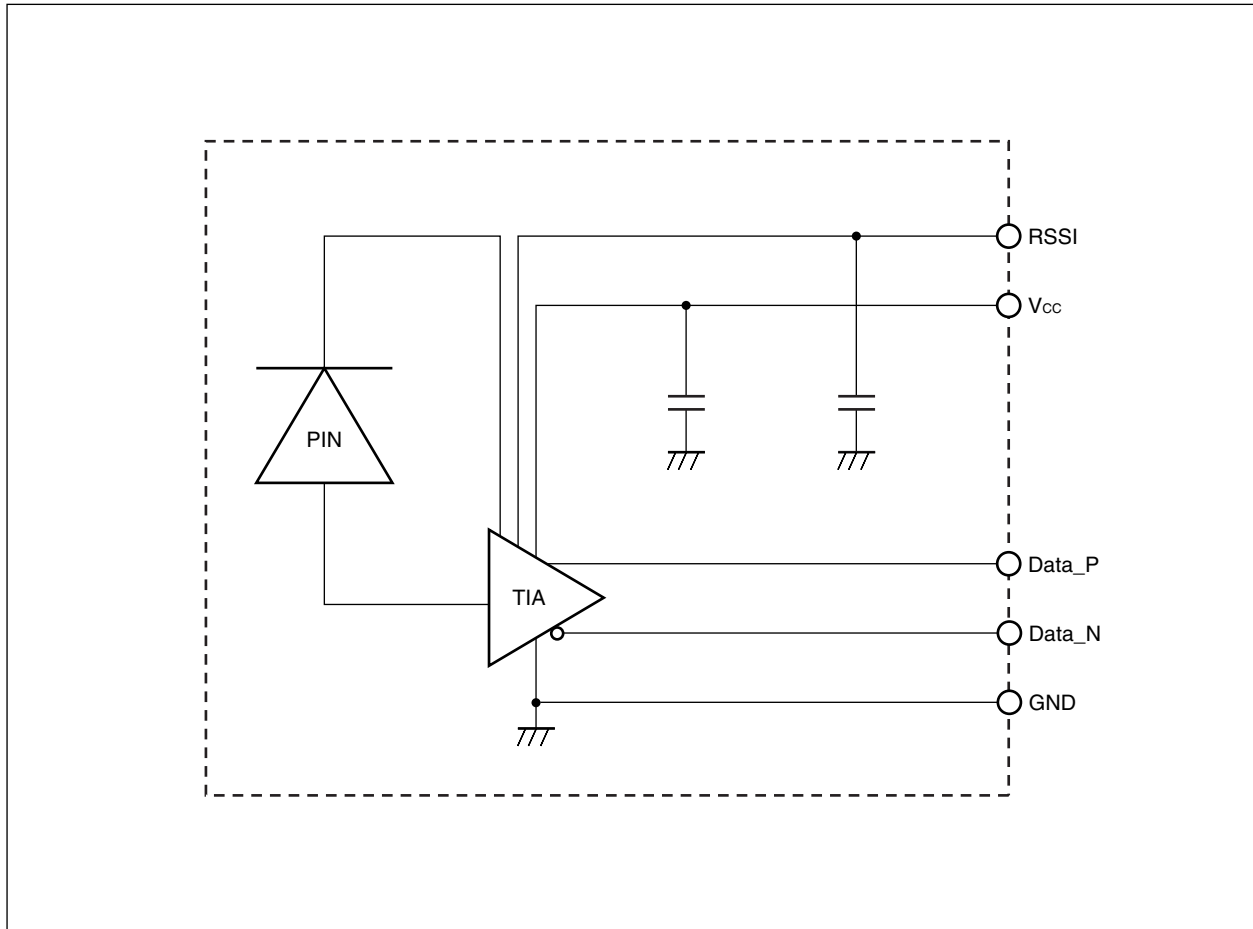
- XMD-MSA compliant LC ROSA
- 10 Gb/s high sensitivity InGaAs PIN-PD
- +3.3 V SiGe transimpedance pre-amplifier
- Minimum receiver sensitivity $P_r = -19.5 \text{ dBm}$
- Operating case temperature $T_c = -40 \text{ to } +95^\circ\text{C}$
- Transimpedance $Z_t = 7\,000 \, \Omega$ (Differential-ended)
- Cut-off frequency $f_c = 8.5 \text{ GHz}$
- With flexible printed circuit
- RSSI output



PACKAGE DIMENSIONS (UNIT: mm)



BLOCK DIAGRAM



ORDERING INFORMATION

Part Number	Receptacle Type	Note
NR3316TM	LC, plastic	Differential output with flexible PCB

ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Ratings	Unit
IC Supply Voltage	V_{CC}	-0.3 to +4.0	V
Operating Case Temperature	T_C	-40 to +95	°C
Storage Temperature	T_{stg}	-40 to +95	°C
Maximum AOP Input	P_{in}	+5	dBm
RSSI	RSSI	0 to $V_{CC}-0.65$	V
Lead Soldering Temperature (Flexible Printed Circuit)	T_{slid}	350 (10 sec.)	°C

RECOMMENDED OPERATING CONDITION

Parameter	Symbol	MIN.	TYP.	MAX.	Unit
IC Supply Voltage	V_{CC}	+2.97	+3.3	+3.63	V
Operating Case Temperature	T_C	-40	+25	+95	°C

ELECTRO-OPTICAL CHARACTERISTICS

($V_{CC} = 3.3$ V, $\lambda = 1\,260$ to $1\,360$ nm/ $1\,530$ to $1\,565$ nm, unless otherwise specified)

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
RSSI Gain	Rg1.3	$\lambda = 1\,310$ nm		0.38		A/W
	Rg1.5	$\lambda = 1\,550$ nm		0.44		
Transimpedance	Z_t	$R_L = 50\ \Omega$, $P_{in} = -17$ dBm, Differential-ended		7 000		Ω
Maximum Output Voltage Swing	V_{PP}	Differential-ended			350	mV _{PP}
Cut-off Frequency	f_C	$R_L = 50\ \Omega$, $P_{in} = -17$ dBm, -3dB from 1 GHz	7	8.5	13.2	GHz
Minimum Receiver Sensitivity	P_r	11.3 Gb/s, BER = 10^{-12} , PRBS = $2^{31}-1$, ER = 12 dB, NRZ, $\lambda = 1\,550$ nm		-19.5	-17	dBm
Overload	P_O		+2			dBm
Electrical Return Loss	S_{22}	1 to 7 GHz, Single			-5	dB
IC Supply Current	I_{CC}				44	mA
Optical Return Loss	ORL				-27	dB

REFERENCE

Document Name	Document No.
Opto-Electronics Devices Pamphlet	PX10160E ^{*1}

Note: *1. Published by the former NEC Electronics Corporation.

SAFETY INFORMATION ON THIS PRODUCT

Caution	GaAs Products	This product uses gallium arsenide (GaAs). GaAs vapor and powder are hazardous to human health if inhaled or ingested, so please observe the following points. • Follow related laws and ordinances when disposing of the product. If there are no applicable laws and/or ordinances, dispose of the product as recommended below. 1. Commission a disposal company able to (with a license to) collect, transport and dispose of materials that contain arsenic and other such industrial waste materials. 2. Exclude the product from general industrial waste and household garbage, and ensure that the product is controlled (as industrial waste subject to special control) up until final disposal. • Do not burn, destroy, cut, crush, or chemically dissolve the product. • Do not lick the product or in any way allow it to enter the mouth.
Caution	Optical Fiber	A glass-fiber is attached on the product. Handle with care. • When the fiber is broken or damaged, handle carefully to avoid injury from the damaged part or fragments.

Revision History	NR3316TM Data Sheet
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Rev.	Date	Description	
		Page	Summary
1.00	Aug 17, 2010	–	First edition issued

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