PRELIMINARY DATA SHEET

CEL

RECEIVER
NR3313TQ

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

DESCRIPTION

The NR3313TQ products consist of InGaAs PIN ROSAs (Receiver Optical Sub-Assembly) with internal pre-amplifiers designed for 10 Gb/s optical transceivers such as the XFP/SFP+. These modules are ideal as receivers for IEEE 10G BASE and SONET OC-192 systems.

FEATURES

- XMD-MSA compliant ROSA
- 10 Gb/s high sensitivity InGaAs PIN-PD
- +3.3 V transimpedance pre-amplifier
- Minimum receiver sensitivity $\overline{P_r}$ = –20 dBm
- Operating case temperature T_C = –20 to +95°C
- Transimpedance Z_t = 6 000 Ω (Single-ended)
- Cut-off frequency fc = 8.5 GHz
- With flexible printed circuit

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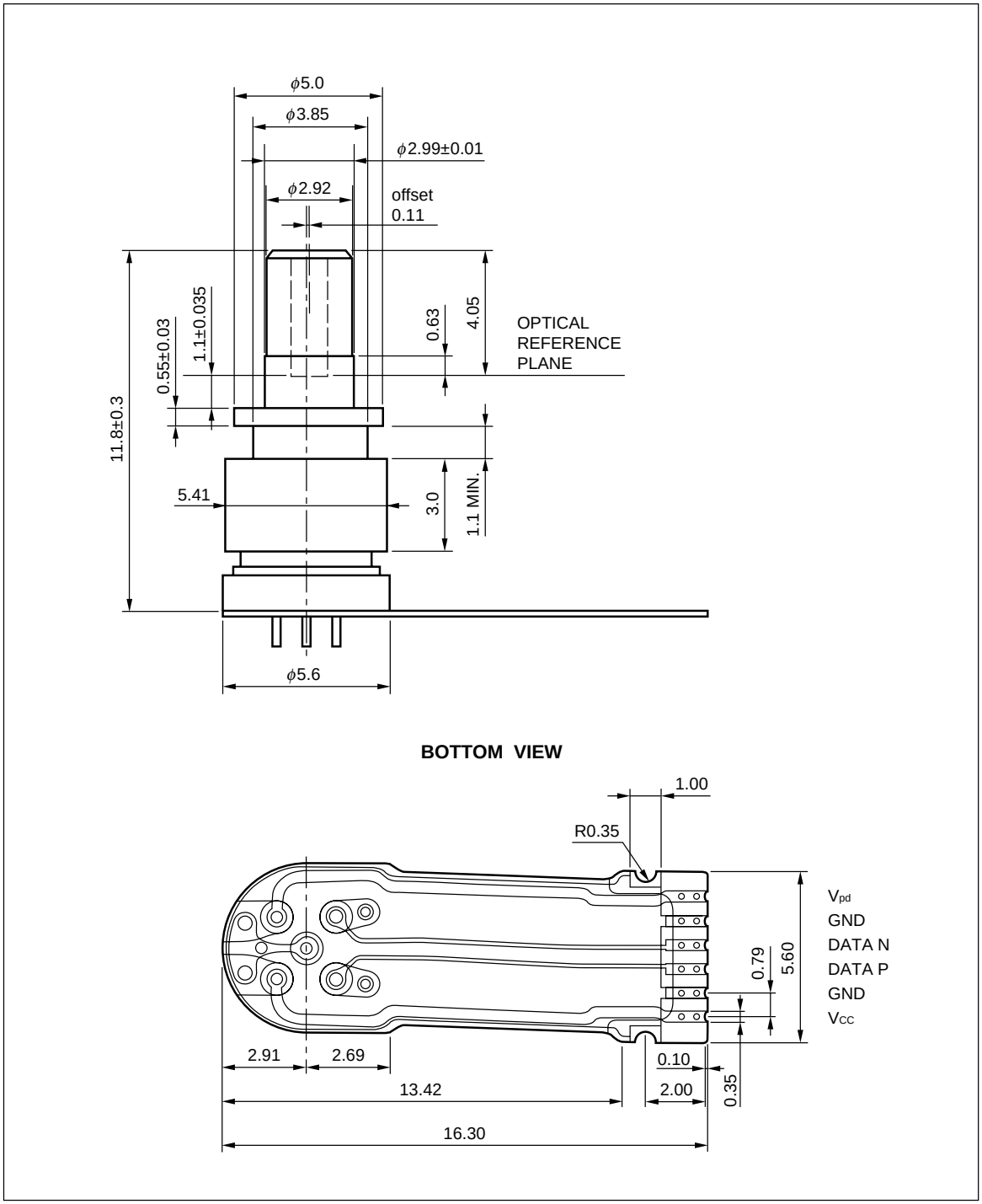
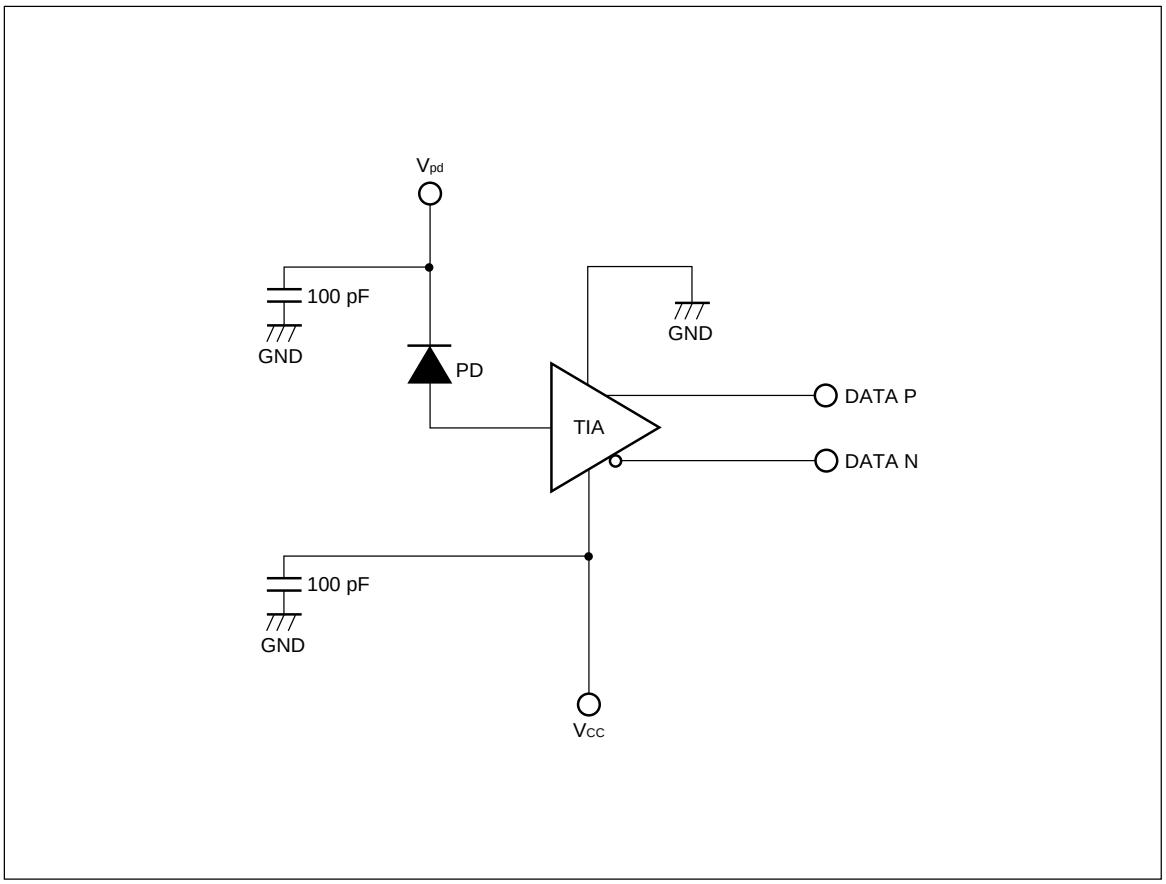
PACKAGE DIMENSIONS (UNIT: mm)



BLOCK DIAGRAM



ORDERING INFORMATION

Part Number	Receptacle Type	Note
NR3313TQ	LC, Isolated	Differential output with flexible PCB

ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Ratings	Unit
PIN-PD Reverse Voltage	V_R	10	V
PIN-PD Reverse Current	I_R	10	mA
IC Supply Voltage	V_{CC}	−0.3 to +4	V
Operating Case Temperature	T_C	−20 to +95	°C
Storage Temperature	T_{stg}	−40 to +85	°C
Maximum AOP Input (ER < 5.4 dB (1.1 A/W))	P_{in}	+5	dBm
Lead Soldering Temperature (Flexible Printed Circuit)	T_{sld}	260 (10 sec.)	°C

RECOMMENDED OPERATING CONDITION

Parameter	Symbol	MIN.	TYP.	MAX.	Unit
PIN-PD Reverse Voltage	V_R	2.8	3.3	3.5	V
IC Supply Voltage	V_{CC}	+2.97	+3.3	+3.5	V
Operating Case Temperature	T_C	−20	+25	+95	°C

ELECTRO-OPTICAL CHARACTERISTICS (λ = 1 310 nm/1 550 nm, unless otherwise specified)

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Sensitivity	S		0.75		1.2	A/W
Transimpedance	Z_t	R_L = 50 Ω, P_{in} = −20 dBm, Single-ended	3 000	6 000	10 000	Ω
Maximum Output Voltage Swing	V_{clip}	Single-ended			350	mV_{pp}
Cut-off Frequency	f_C	R_L = 50 Ω, P_{in} = −17 dBm, −3 dB from 1 GHz	6.5	8.5		GHz
Minimum Receiver Sensitivity	$\overline{P_r}$	9.95 Gb/s, BER = 10^{-12}, PRBS = 2^{31}−1, ER > 10 dB, NRZ, λ = 1 550 nm		−20	−17	dBm
Overload	P_O		+1	+3		dBm
IC Supply Current	I_{CC}	V_{CC} = 3.5 V			50	mA
Optical Return Loss	ORL				−27	dB

REFERENCE

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

***1** Published by the former NEC Compound Semiconductor Devices, Ltd.

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