OKI Electronics Components

Rev. 3 [11. 2005]

OD9245N

10Gbps PIN-Preamplifier surface mount receiver module

1. DESCRIPTION

The OD9245N is the 10Gbps receiver module which incorporates a high speed pin-photodiode and a High Gain trans-impedance amplifier (TIA). This receiver is specifically designed for OC-192 SONET/SDH STM-64,DWDM and 10-Gbps Ethernet applications. The outline is based on the MSA that defines small footprint coplanar OC-192 receivers.

2. FEATURES

- High Data Rate Capability up to 10.7Gb/s.
- High Responsivity InGaAs PIN-photodiode.
- +3.3V TIA and +5V PD Supply.
- Small Footprint Coplanar Output.

3. APPLICATION

- OC-192 SONET/SDH STM-64/DWDM
- 10Gbps Ethernet

4.OPTICAL AND ELECTRICAL CHARACTERISTICS

(λ=1550nm,Ta = +25°C, V_{CC}=+3.3V, V_{PD}=+5V, unless otherwise specified)

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Wavelength	λ	--	1250	--	1620	nm
PIN-PD Responsivity	R_{PD}	λ=1550nm	0.75	0.9	--	A/W
		λ=1310nm	0.75	0.85	--	
Dark Current	ID	V_{PD}=+5V	--	--	1.0	nA
Transimpedance	Zt	RL=100Ω,Pin=-17dBm, Differential	0.8	1.4	--	kΩ
Bandwidth	BW	f3dB,RL=50Ω, Pin=-17dBm	7	8.5	--	GHz
Sensitivity	Prmin	10Gbps,NRZ,BER=10^{-12}, PRBS2^{31}-1 ,Rext =12dB	--	-19.5	-18.5	dBm
Overload	Prmax	10Gbps,NRZ,BER=10^{-12}, PRBS2^{31}-1 ,Rext=12dB	+1	+2	--	dBm
Equivarent input Noise Current density	In	Average within BW RL=50Ω, Pin=0mW	--	10	--	pA/√Hz
Maximum Output Voltage Swing	Vout	RL=50Ω	300	450	570	mVpp
Supply Current	I_{CC}	Pin=0mW	--	65	80	mA
Recommended Supply Voltage	V_{CC}	-	+3.1	+3.3	+3.5	V
	V_{PD}		+4.5	+5	+10	
Power Consumption	P	Pin=0mW	--	0.21	0.28	W
Electrical Return Loss	ERL	130MHz to 10GHz Diffrential S22	--	--	-8	dB
Optical Return Loss	ORL	λ=1550nm	--	--	-27	dB

5.ABSOLUTE MAXIMUM RATING

(Ta = +25 °C, unless otherwise specified)

Parameter	Symbol	Rating	Unit
TIA Supply Voltage	V_{CC}	+4	V
PD Supply Voltage	V_{PD}	+15	V
Incident Optical Power	Pin	+5.0	dBm
Operating Temparature	Top	-10 to 85	°C
Stroage Temparature	Tstg	-40 to 85	°C

6. CONNECTOR AND FIBER SPECIFICATIONS

Parameter	Specifications	Unit
Type	SM	--
Mode Field Diameter	10	um
Cladding Diameter	125	um
Jaket Diameter	900	um
Length	1	m
Standard Connector	SC/SPC	--

7. ORDERING INFORMATION

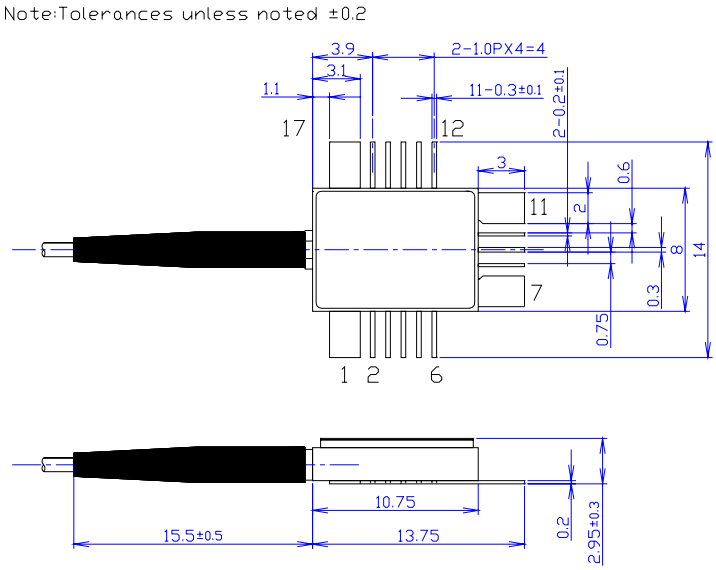
OD9245N - _ _ _

Connector
(SC)*
FC
LC
MU

Fiber Color
- -: White*
Y: Yellow
B: Blue

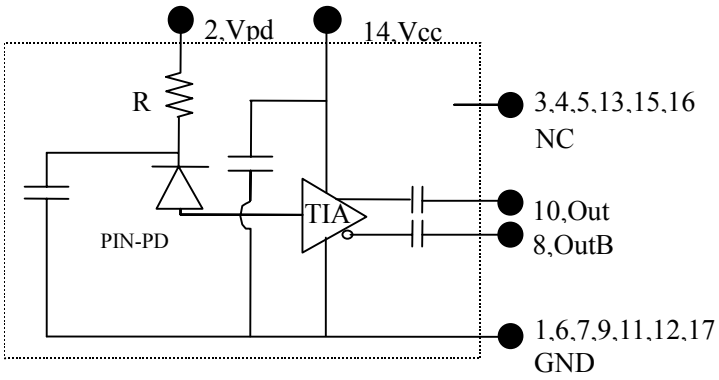
* : Standard. No need to indicate.

8.OUTLINE DRAWING
All dimensions in millimeters
PACKAGE NO. OD9245N (UNIT:MM)



Pin Connection	
1	Case GND
2	V_{PD} (PIN-PD Bias)
3	NC
4	NC
5	NC
6	Case GND
7	Case GND
8	OUTB (AC-coupled)
9	Case GND
10	OUT (AC-coupled)
11	Case GND
12	Case GND
13	NC
14	Vcc (TIA Power supply)
15	NC
16	NC
17	Case GND

9.BLOCK DIAGRAM



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Caution GaAs Product	The product contains gallium arsenide, GaAs. GaAs vapor and powder are hazardous to human health if inhaled, ingested or swallowed. Do not destory or burn the product. Do not crush or chemically dissolve the product. Do not put the product in the mouth. Observe related laws and company regulations when discarding this product. The product should be excluded from general industrial waste or household garbage.
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.

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