

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

($\lambda=1550\text{nm}$, $T_a = +25^\circ\text{C}$, $V_{CC}=+3.3\text{V}$, $V_{PD}=+5\text{V}$, unless otherwise specified)

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Wavelength	λ	--	1250	--	1620	nm
PIN-PD Responsivity	R_{PD}	$\lambda=1550\text{nm}$	0.75	0.9	--	A/W
		$\lambda=1310\text{nm}$	0.75	0.85	--	
Dark Current	ID	$V_{PD}=+5\text{V}$	--	--	1.0	nA
Transimpedance	Z_t	$R_L=100\Omega$, $P_{in}=-17\text{dBm}$, Differential	0.8	1.4	--	k Ω
Bandwidth	BW	f3dB, $R_L=50\Omega$, $P_{in}=-17\text{dBm}$	7	8.5	--	GHz
Sensitivity	P_{rmin}	10Gbps, NRZ, BER= 10^{-12} , PRBS2 ³¹ -1, $R_{ext}=12\text{dB}$	--	-19.5	-18.5	dBm
Overload	P_{rmax}	10Gbps, NRZ, BER= 10^{-12} , PRBS2 ³¹ -1, $R_{ext}=12\text{dB}$	+1	+2	--	dBm
Equivalent input Noise Current density	I_n	Average within BW $R_L=50\Omega$, $P_{in}=0\text{mW}$	--	10	--	pA/ $\sqrt{\text{Hz}}$
Maximum Output Voltage Swing	V_{out}	$R_L=50\Omega$	300	450	570	mVpp
Supply Current	I_{CC}	$P_{in}=0\text{mW}$	--	65	80	mA
Recommended Supply Voltage	V_{CC}	-	+3.1	+3.3	+3.5	V
	V_{PD}		+4.5	+5	+10	
Power Consumption	P	$P_{in}=0\text{mW}$	--	0.21	0.28	W
Electrical Return Loss	ERL	130MHz to 10GHz Differential S22	--	--	-8	dB
Optical Return Loss	ORL	$\lambda=1550\text{nm}$	--	--	-27	dB

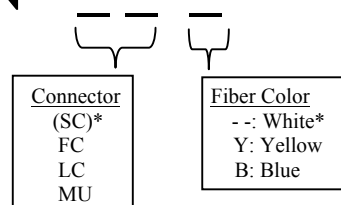
5. ABSOLUTE MAXIMUM RATING

(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 Temperature	Top	-10 to 85	°C
Storage Temperature	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 -**

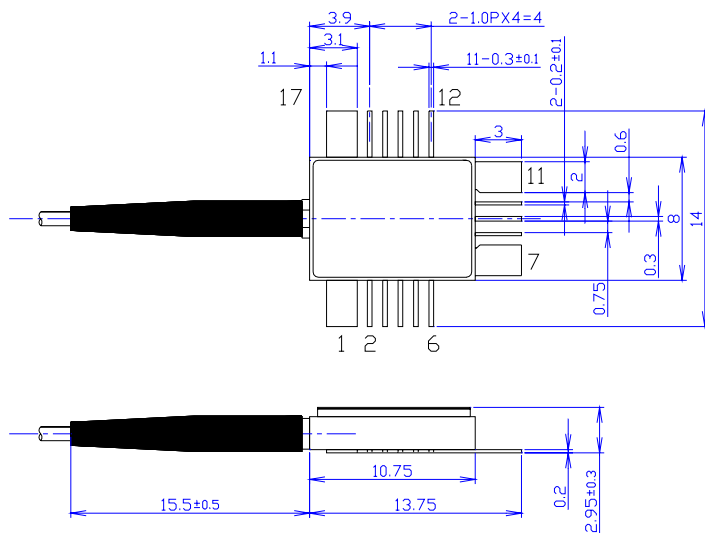
* : Standard. No need to indicate.

8.OUTLINE DRAWING

All dimensions in millimeters

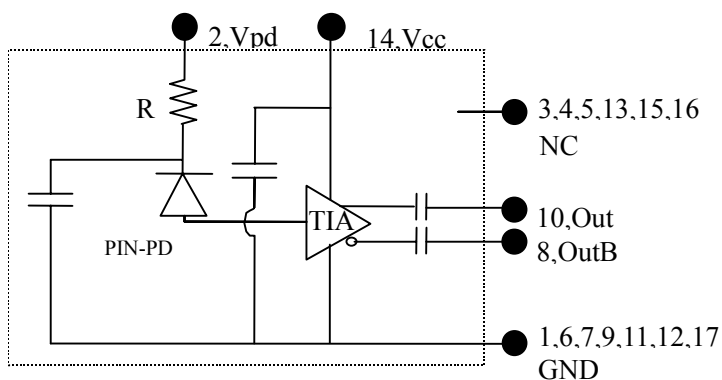
PACKAGE NO. OD9245N (UNIT:MM)

Note:Tolerances unless noted ±0.2




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	V _{CC} (TIA Power supply)
15	NC
16	NC
17	Case GND

9.BLOCK DIAGRAM



SAFETY INFORMATION ON THIS PRODUCT

TYPE :	_____
LOT NO:	_____
S/N :	_____
Q'TY :	_____ PCS.
MADE IN JAPAN	
	
OKI Electric Industry Co.,Ltd.	

<p>Caution</p> <p>GaAs Product</p>	<p>The product contains gallium arsenide, GaAs. GaAs vapor and powder are hazardous to human health if inhaled, ingested or swallowed.</p> <ul style="list-style-type: none"> Do not destroy or burn the product. Do not crush or chemically dissolve the product. Do not put the product in the mouth. <p>Observe related laws and company regulations when discarding this product. The product should be excluded from general industrial waste or household garbage.</p>
<p>Caution</p> <p>Optical Fiber</p>	<p>A glass-fiber is attached on the product. Handle with care.</p> <p>When the fiber is broken or damaged, handle carefully to avoid injury from the damaged part or fragments.</p>

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