OKI SEMICONDUCTOR

Dear customers,

About the change in the name such as "Oki Electric Industry Co. Ltd." and "OKI" in documents to OKI Semiconductor Co., Ltd.

The semiconductor business of Oki Electric Industry Co., Ltd. was succeeded to OKI Semiconductor Co., Ltd. on October 1, 2008. Therefore, please accept that although the terms and marks of "Oki Electric Industry Co., Ltd.", “Oki Electric”, and "OKI" remain in the documents, they all have been changed to "OKI Semiconductor Co., Ltd.". It is a change of the company name, the company trademark, and the logo, etc. , and NOT a content change in documents.

October 1, 2008
OKI Semiconductor Co., Ltd.

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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

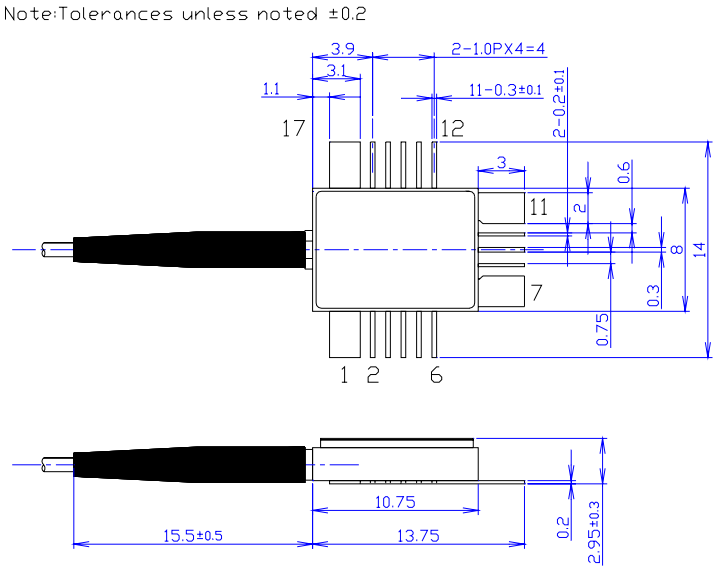
OD9245N - _ _ _

Connector
(SC)*
FC
LC
MU

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

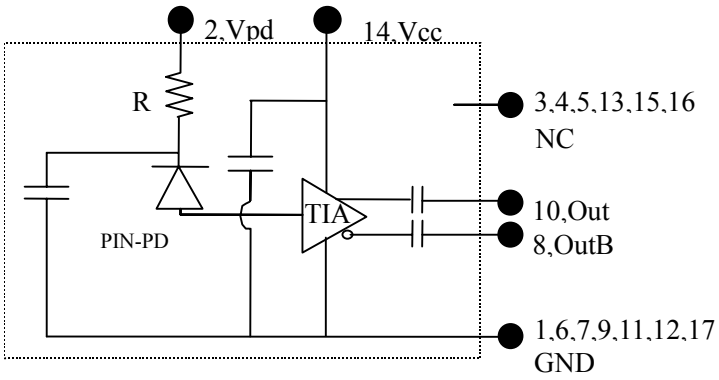
* : Standard. No need to indicate.

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



SAFETY INFORMATION ON THIS PRODUCT

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.

Notice

1. The information contained herein can change without notice owing to product and/or technical improvements. Before using the product, please make sure that the information being referred to is up-to-date.

2. The outline of action and examples for application circuits described herein have been chosen as an explanation for the standard action and performance of the product. When planning to use the product, please ensure that the external conditions are reflected in the actual circuit, assembly, and program designs.

3. When designing your product, please use our product below the specified maximum ratings and within the specified operating ranges including, but not limited to, operating voltage, power dissipation, and operating temperature.

4. Oki assumes no responsibility or liability whatsoever for any failure or unusual or unexpected operation resulting from misuse, neglect, improper installation, repair, alteration or accident, improper handling, or unusual physical or electrical stress including, but not limited to, exposure to parameters beyond the specified maximum ratings or operation outside the specified operating range.

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Sales Support

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