



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

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

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Wavelength	$\lambda$	--	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	--	$k\Omega$
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 <sup>31</sup> -1, $R_{ext}=12\text{dB}$	--	-19.5	-18.5	dBm
Overload	$P_{rmax}$	10Gbps, NRZ, BER= $10^{-12}$ , PRBS2 <sup>31</sup> -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	--	$\text{pA}/\sqrt{\text{Hz}}$
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

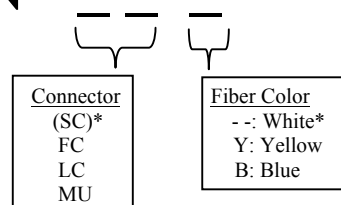
**5. ABSOLUTE MAXIMUM RATING**

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

Parameter	Symbol	Rating	Unit
TIA Supply Voltage	V <sub>CC</sub>	+4	V
PD Supply Voltage	V <sub>PD</sub>	+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 -**

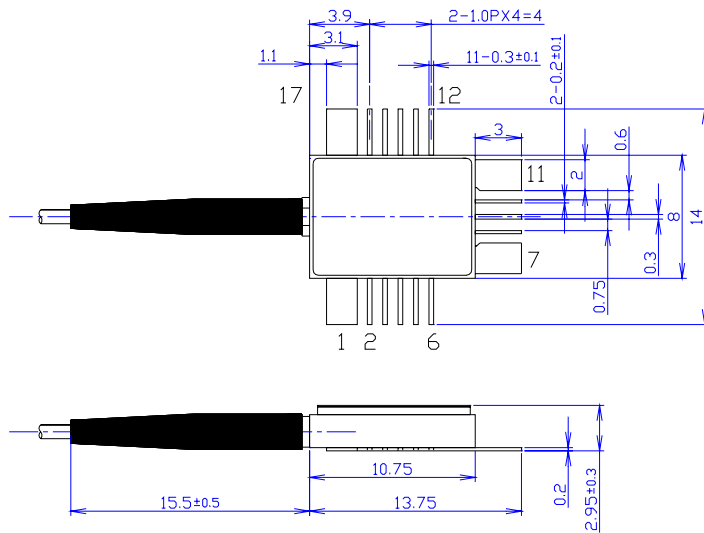
\*: Standard. No need to indicate.

**8.OUTLINE DRAWING**

All dimensions in millimeters

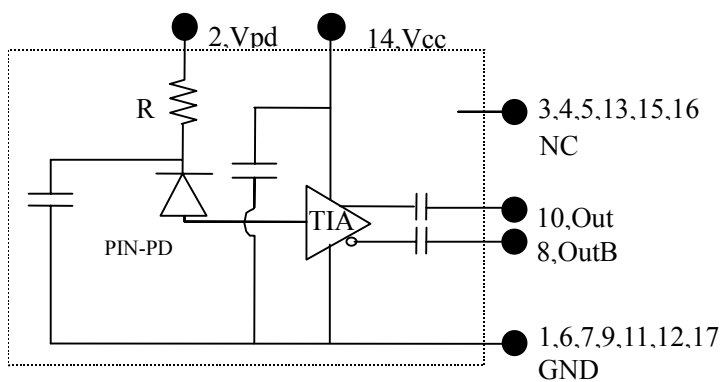
PACKAGE NO. OD9245N (UNIT:MM)

Note:Tolerances unless noted ±0.2




Pin Connection	
1	Case GND
2	V <sub>PD</sub> (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 <sub>CC</sub> (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><b>Caution</b></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"> <li>Do not destroy or burn the product.</li> <li>Do not crush or chemically dissolve the product.</li> <li>Do not put the product in the mouth.</li> </ul> <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><b>Caution</b></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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