OKI Electronics Components

Rev. 1 [1. 2002]

OD9657N Preliminary

Optical Receiver Module for OC-192/STM64 and 10Gigabit Ethernet

1. DESCRIPTION

The OD9651N receiver module incorporates a high speed PIN diode and integrated GaAs transimpedance limiting amplifiers (TIALA).This receiver is specifically designed for OC-192 SONET/SDH STM-64 and 10-Gigabit Ethernet applications. Also, the receiver is manufacutured in a small size, 17-pin surface mount type package (gull wing lead)

2. FEATURES

- High data rate capability, 10Gb/s,10.7Gb/s
- Low equivalent input noise current density
- Integrated InGaAs pin-photodiode and GaAs High Gain pre-amplifier (integrated TIA and LA)
- +3.3V single power supply (TIA and LA)
- Differential high trans-impedance Gain 14kΩ and 800mVpp output

3. APPLICATIONS

- OC-192 SONET/SDH STM-64 (~ 10.7Gb/s)
- 10-Gigabit Ethernet

4.OPTICAL AND ELECTRICAL CHARACTERISTICS

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

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Wavelength	λ		1260		1565	nm
PD Responsivity	R_{PD}	λ=1550nm	0.7	0.8		A/W
PD Dark Current	I_D	VR=+5V	--	--	10	nA
Sensitivity	Pmin	10.7Gbps,NRZ,BER=10^{-12} , PRBS2^{31}-1	--	-17	-15	dBm
Overload	Pmax	10.7Gbps,NRZ,BER=10^{-12} , PRBS2^{31}-1	0	+2	--	dBm
Optical Return Loss	ORL	λ=1550nm	--	-30	-27	dB
Transimpedance	Ztd	Pin<-15dBm, Dfferential Output	--	14000	--	Ω
	Zts	Pin<-15dBm, Single ended Output	--	7000	--	Ω
Output Swing	Vout	Pin>-15dBm, Dfferential Output	--	800	--	mVpp
	Vout	Pin>-15dBm, Single ended Output	--	400	--	mVpp
Bandwidth	BW	f3dB,RL=50Ω	8.5	9	--	GHz
Equivalent Input Noise Current Density	in	Average within 0.5GHz to BW RL=50Ω	--	10	--	pA√Hz
Group Delay	--		--	±20	--	ps
Electrical Return Loss	ERL	F=BW GHz	--	-10	--	dB
Power Supply Voltage	V_{DD}		+3.14	+3.3	+3.46	V
	V_{PD}		--	+5	+10	V
Supply Current	I_D	Pin=0mW	--	TBD	--	mA
Power Dissipation	--		--	0.5	--	W

5.ABSOLUTE MAXIMUM RATING

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

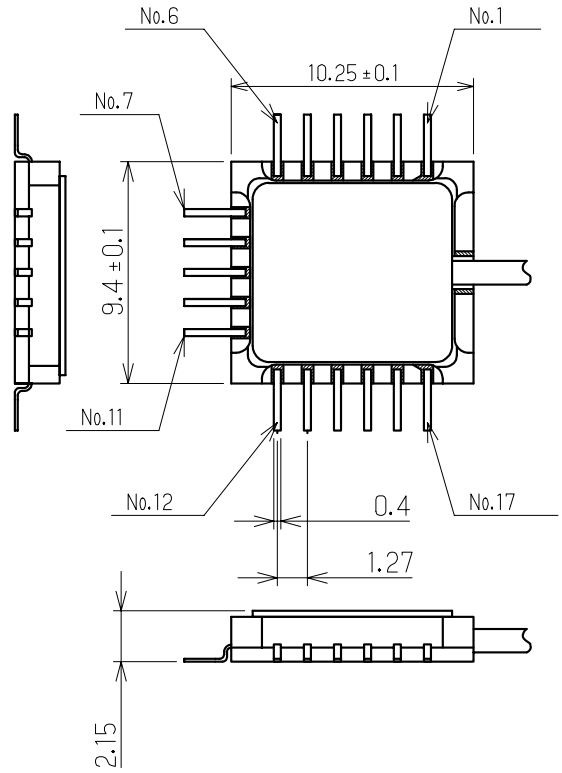
Parameter	Symbol	Rating	Unit
PD Supply Voltage	VR	+12	V
Supply Voltage	V_{DD}	0 to +6	V
PD Forward Current	IF	20	mA
PD Reverse Current	IR	2	mA
Operating Temparature	Top	0 to 70	°C
Stroage Temparature	Tstg	-40 to 85	°C
Lead Solderling Temperature (10s)	--	260	°C

6. CONNECTOR AND FIBER SPECIFICATIONS

Parameter	Specifications	Unit
Fiber	1.31μm Single Mode Fiber	--
	Code Diameter:0.9	mm
	Blue	--
	Bending Radius:20(min)	mm
	Length:1000+/-50	mm
Connector	SC-PC	--

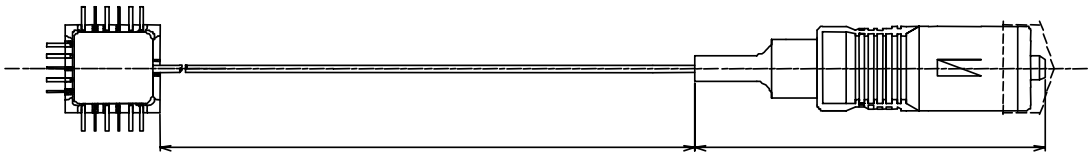
7.OUTLINE DRAWING

All dimensions in millimeters
Package No. (Unit: mm)



Pin Assignment

No.	function	Description
1	GND	
2	V_{PD}	
3	CAP1	This pin connected to ground through a capacitor 0.1uF.
4	CAP2	This pin connected to ground through a capacitor 0.1uF.
5	GND	
6	NC	
7	GND	
8	OUTPUT-	
9	GND	
10	OUTPUT+	
11	GND	
12	NC	
13	GND	
14	V_{DD}	
15	V_{DD}	
16	NC	
17	GND	



1000±50 (39)

Diagram