

OF3631B-C3

Preliminary

2.5Gbps APD-preamplifier coaxial module with single mode fiber

1. DESCRIPTION

OF3631B-C3 is an optical receiver module for digital transmission systems up to 2.5Gbps. It uses an InGaAs avalanche photodiode with a low noise preamplifier. It operates from +3.3V to +5.0V TIA supply voltage. Package style is a hermetically sealed coaxial package with single mode fiber pigtail.

2. FEATURES

Data rate up to 2.5Gbps
 High responsivity InGaAs-APD : 8.5A/W
 Wide dynamic range
 Typical sensitivity : -32dBm
 Low noise
 Small coaxial package

**3. APPLICATION**

SONET OC-48/SDH STM-16 applications
 Long-haul transmission systems up to 2.5Gbps

4. OPTICAL AND ELECTRICAL CHARACTERISTICS

(Wavelength=1310nm, Ta=25°C, VDD=3.3V, unless otherwise specified)

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit	
Wavelength	λ	-	1250	--	1620	nm	
APD Breakdown Voltage	VBR	ID=10 μ A	40	60	80	V	
Temperature Coefficient of VBR*	γ	-	0.10	0.15	0.25	%/°C	
APD Responsivity	RAPD	$\lambda=1.55\mu\text{m}, V_B=35\sim 78\text{V}, M=10$	8.0	8.5	--	A/W	
		$\lambda=1.31\mu\text{m}, V_B=35\sim 78\text{V}, M=10$	7.5	8.5	--		
Responsivity	R	RL=100 Ω , M=10, Pin=-30dBm, Differential	12	--	--	kV/W	
Bandwidth	BW	f3dB, RL=100 Ω , M=10	1550	1850	--	MHz	
Sensitivity	Prmin	2.488Gbps, NRZ, BER=10 ⁻¹⁰ , PRBS2 ²³ -1, M=Mopt.	--	-32	-30.5	dBm	
Overload	Prmax	2.488Gbps, NRZ, BER=10 ⁻¹⁰ , PRBS2 ²³ -1, M=3	-7	-5	--	dBm	
Supply Current	IDD	Pin = 0mW	VDD=3.3V	--	30	63	mA
			VDD=5.0V	--	40	73	mA
Recommended TIA Supply Voltage	VDD	-	3.0	--	5.5	V	
Optical Return Loss	ORL	-	--	--	-27	dB	

*) Temperature Coefficient of Breakdown Voltage.

$$\gamma = \frac{V_B(25^\circ\text{C} + \Delta T^\circ\text{C}) - V_B(25^\circ\text{C})}{V_B(25^\circ\text{C}) \cdot \Delta T^\circ\text{C}} \times 100 (\% / ^\circ\text{C})$$

5. ABSOLUTE MAXIMUM RATING

(Ta = 25 °C, unless otherwise specified)

Parameter	Symbol	Rating	Unit
APD Supply Voltage	VR	0 to VBR	V
TIA Supply Voltage	VDD	6.0	V
APD Forward Current	IF	4	mA
APD Reverse Current	IR	1(cw)	mA
Operating Temperature	Top	-40 to +85	°C
Storage Temperature	Tstg	-40 to +85	°C

6. CONNECTOR AND FIBER SPECIFICATIONS

Parameter	Specifications	Unit
Type	SM	--
Mode Field Diameter	10	μm
Cladding Diameter	125	μm
Jacket Diameter	900	μm
Length	1 (Min.)	m
Connector	FC/PC or SC/PC	--

7. ORDERING INFORMATION

OF3631 B - C3 - _ _ _ _

Fiber
B: SM

Flange
AF: Angled
SF: Straight

Connector
FC
SC

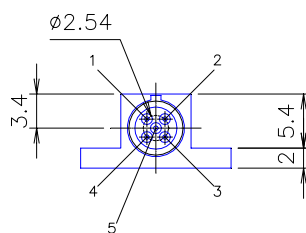
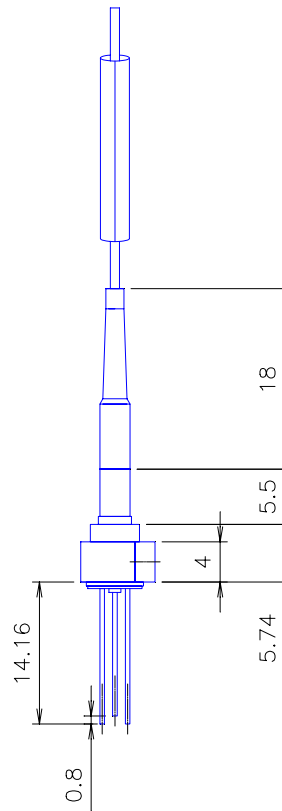
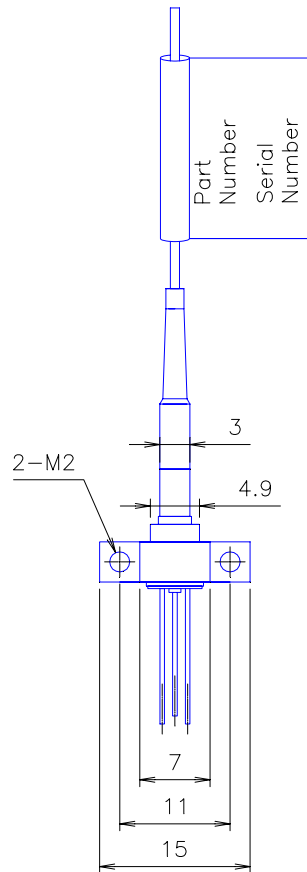
ex.) OF3631B-C3-AFFC

OF3631 with SM fiber, angled flange,
and FC connector.

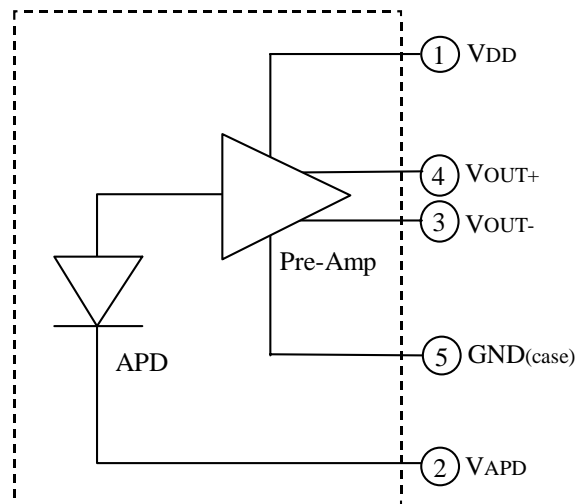
8.OUTLINE DRAWING

All dimensions in millimeters

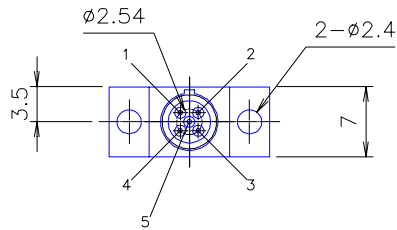
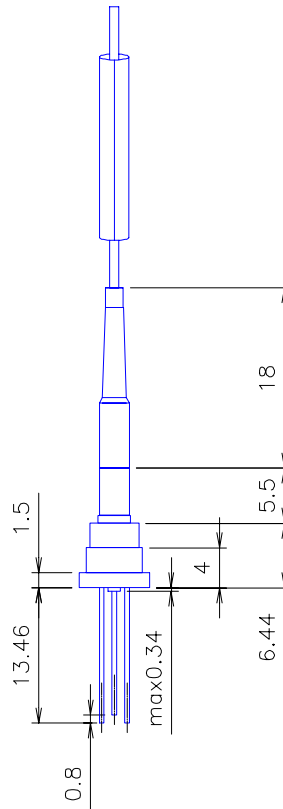
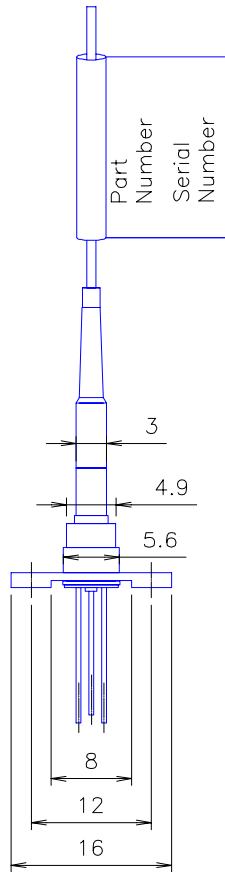
Package No. OF3631B-C3-AF__ (Unit: mm)



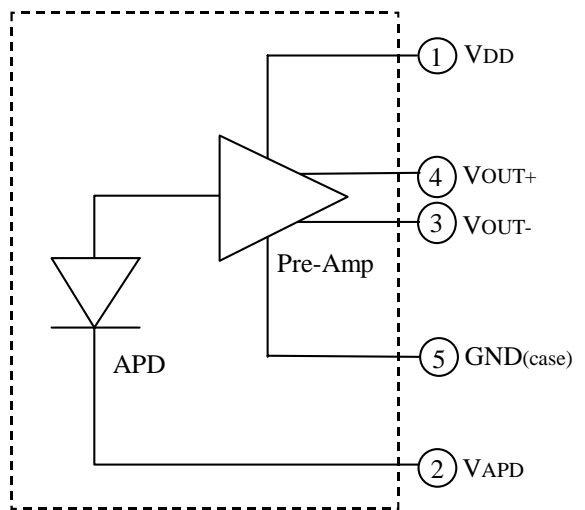
Pin Connection	
1	VDD
2	VAPD
3	VOUT-
4	VOUT+
5	GND(case)



All dimensions in millimeters
 Package No. OF3631B-C3-SF__ (Unit: mm)



Pin Connection	
1	VDD
2	VAPD
3	VOUT-
4	VOUT+
5	GND(case)



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