

OKI Electronics Components

Rev. 2 [5. 2006]

OF3634B-C3

2.5Gbps APD-preamplifier coaxial module with a single mode fiber

1. DESCRIPTION

OF3634B-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. Package style is a hermetically sealed coaxial package with a single mode fiber pigtail.

2. FEATURES

Data rate up to 2.5Gbps
 High responsivity InGaAs-APD: 8.5A/W
 Wide dynamic range
 High sensitivity: -34dBm typ. at Rext=10dB*
 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=1550nm, Tc =25°C, VCC=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	λ =1550nm, VB=35 to 78V, M=10	8.0	8.5	--	A/W	
		λ =1310nm, VB=35 to 78V, M=10	7.5	8.5	--		
Responsivity	R	RL=100 Ω , M=10, Pin=-30dBm, Differential	16	23	--	kV/W	
Bandwidth	BW	f _{3dB} , RL=50 Ω , AC-coupled, M=10	1650	1950	--	MHz	
Sensitivity	Prmin	2.488Gbps, NRZ, BER=10 ⁻¹⁰ , PRBS2 ²³ -1, M=Mopt., Rext=10dB*	25°C	--	-34	-33	dBm
			-40°C to 85°C	--	-33	-31.5	
Overload	Prmax	2.488Gbps, NRZ, BER=10 ⁻¹⁰ , PRBS2 ²³ -1, M=3	-7	-3	--	dBm	
Supply Current	I _{CC}	Pin = 0mW	--	44	60	mA	
Recommended TIA Supply Voltage	V _{CC}	--	3.1	3.3	3.5	V	
Optical Return Loss	ORL	--	--	--	-27	dB	

*) Extinction ratio of LD source.

***) 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

(Tc = 25 °C, unless otherwise specified)

Parameter	Symbol	Rating	Unit
APD Bias Voltage	VB	0 to VBR	V
TIA Supply Voltage	VCC	5.0	V
APD Forward Current	IF	4	mA
APD Reverse Current	IR	2(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	--
Flame Rating	UL94 V-0	--
	UL1581 VW-1	--
Mode Field Diameter	10	μm
Cladding Diameter	125	μm
Jacket Diameter	900	μm
Length	1 (Min.)	m
Standard Connector	FC/PC or SC/PC	--

7. ORDERING INFORMATION

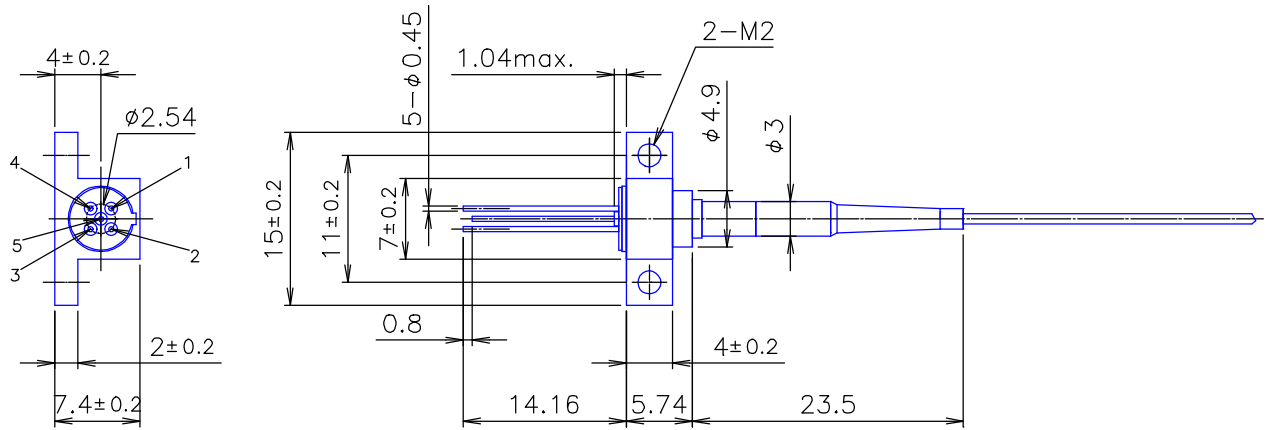
OF3634B - C3 -
 Flange Connector
 AF: Angled FC
 SF: Straight SC
 LC
 MU

ex.) OF3634B-C3-AFFC
 OF3634B-C3 with an angled flange and a FC connector.

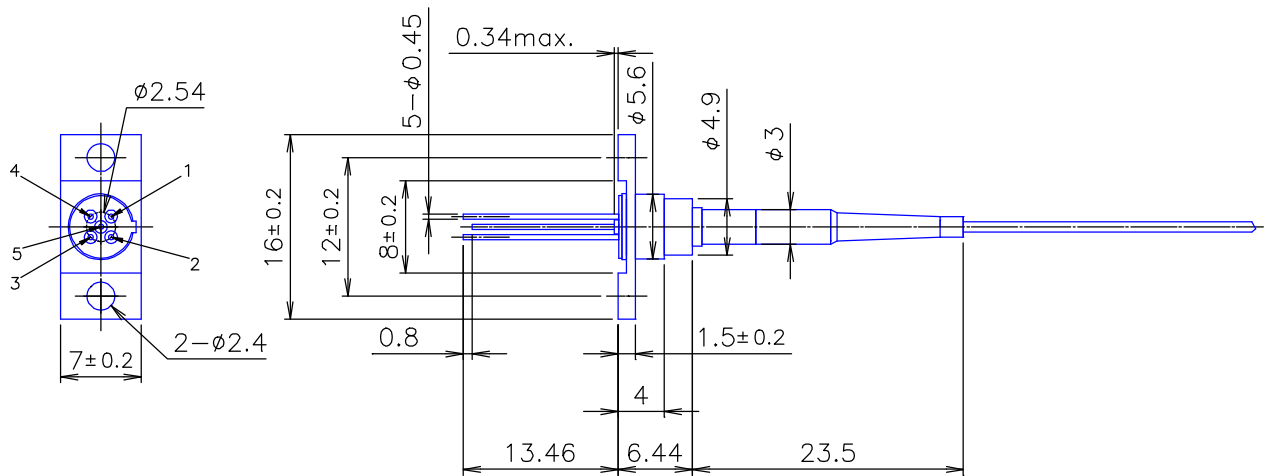
8. OUTLINE DRAWING

All dimensions in millimeters

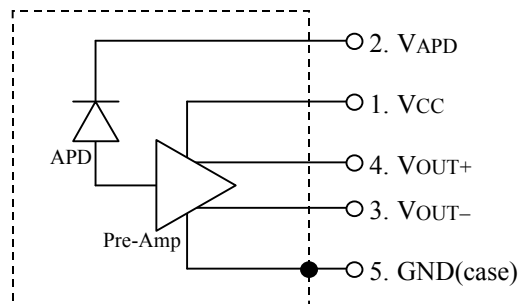
Package No. OF3634B-C3-AF



Package No. OF3634B-C3-SF



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



SAFETY INFORMATION ON THIS PRODUCT



<p>Caution GaAs Product</p>	<p>The product contains gallium arsenide, GaAs. GaAs vapor and powder are hazardous to human health if inhaled, ingested or swallowed. Do not destroy 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.</p>
<p>Caution Optical Fiber</p>	<p>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.</p>

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