
OF3600B-C2

Preliminary

156Mbps Avalanche Photodiode-Preamplifier Receiver Coaxial Module

GENERAL DESCRIPTION

OF3600B-C2 is an optical receiver module that use an InGaAs avalanche photodiode with a low noise Pre-Amplifier. Package style is a hermetically sealed coaxial package with single mode fiber pigtail. This receiver module was designed especially for 156Mbps SONET/SDH applications.

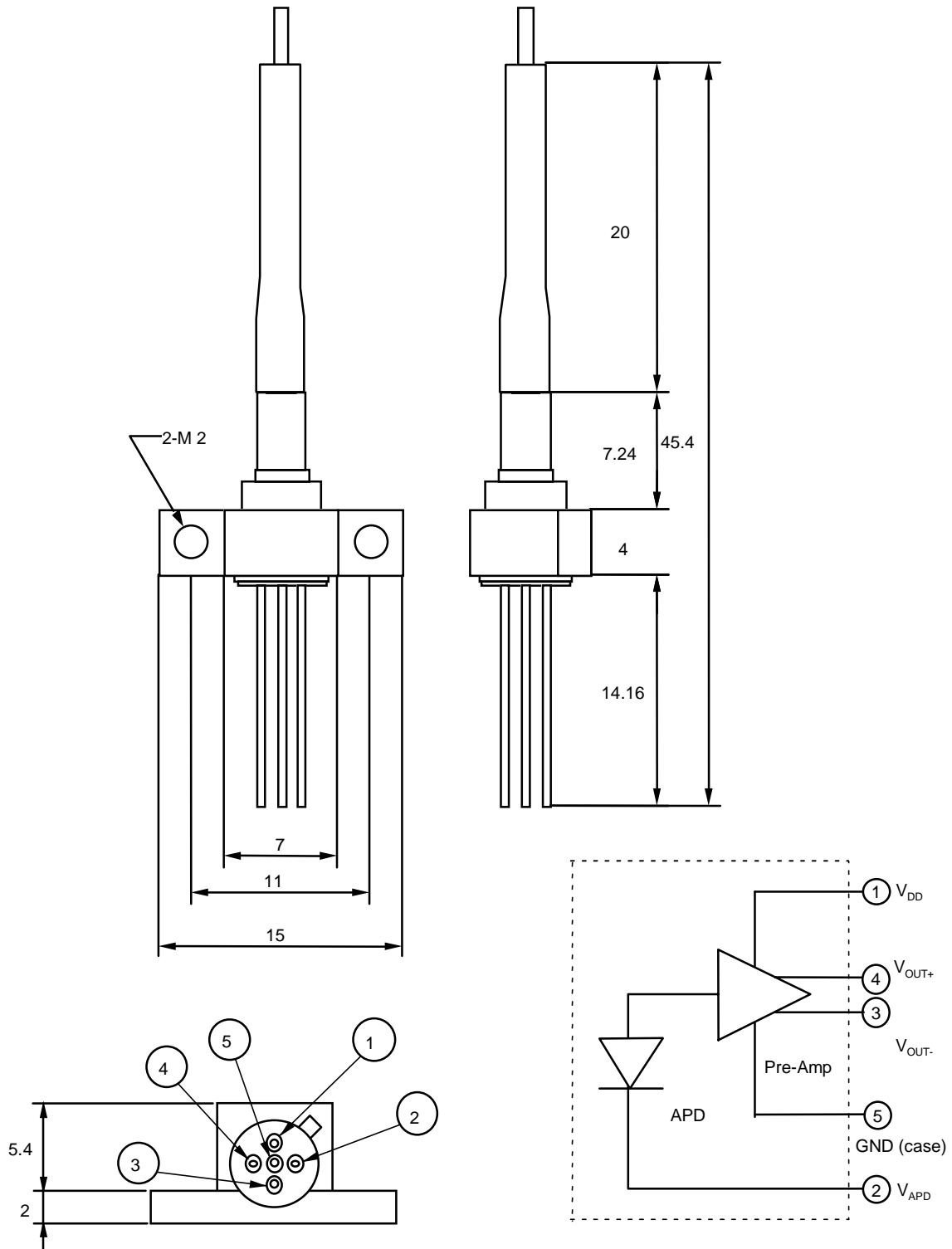
FEATURES

- Single 3.3 V supply with preamplifier bias terminal
- Automatic gain control
- Sensitivity: -49 dBm (Typ.)
- Differential output: Load > 500 Ω

APPLICATIONS

- Digital optical transmission receivers
- 156Mbps SONET/SDH receivers

PACKAGE DIMENSIONS



Note 1: Unit = mm
 Note 2: Fiber hood dimension is provisional.

ABSOLUTE MAXIMUM RATINGS

| Parameter | Symbol | Condition | Ratings | Unit |
|----------------------------|-----------|--------------------------|------------|------------------|
| TIA Supply Voltage | V_{DD} | $T_a = 25^\circ\text{C}$ | 4.5 | V |
| Forward Current | I_F | | 4 | mA |
| Reverse Current | I_R | | 0.5 | mA |
| Operating Case Temperature | T_{OP} | — | -20 to +85 | $^\circ\text{C}$ |
| Storage Temperature | T_{STG} | — | -40 to +85 | $^\circ\text{C}$ |

OPTICAL AND ELECTRICAL CHARACTERISTICS $(V_{DD} = 3.3\text{V}, T_a = 25^\circ\text{C}, \text{ unless otherwise noted})$

| Parameter | Symbol | Condition | Min. | Typ. | Max. | Unit |
|--|----------|--|------|------|-------|---------------------|
| APD Reverse Break over down Voltage | VBR | IDARK = 10 μA | 40 | 70 | 90 | V |
| Temperature Coefficient of VBR ^{*1} | γ | IDARK = 10 μA , -20 to 85 $^\circ\text{C}$ | — | 0.15 | 0.3 | %/ $^\circ\text{C}$ |
| APD Responsivity | R | $\lambda = 1.3 \mu\text{m}, M = 1$ | 0.75 | 0.84 | — | A/W |
| | | $\lambda = 1.5 \mu\text{m}, M = 1$ | 0.85 | 0.95 | — | |
| AC Transimpedance | Zt | RL > 500 Ω | — | 30 | — | k Ω |
| Bandwidth | BW | RL > 500 Ω , M = 10, | 120 | 150 | — | MHz |
| Minimum Sensitivity | PRL | RL > 500 Ω , 156Mb/s, NRZ PRBS2 ³¹ -1, Ber = 10 ⁻¹⁰ , VR ^{*2} is set at optimum, value (M = 7-11) | — | -49 | -47.0 | dBm |
| Recommended Supply Voltage | V_{DD} | — | — | 3.3 | — | V |
| Supply Current | I_{DD} | Pin = 0 mW | — | 19 | 24 | mA |

*1) Temperature Coefficient of Reverse Breakdown Voltage

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

*2) VR: Reverse Voltage

FIBER PIGTAIL SPECIFICATIONS

| Parameter | Specifications | Unit |
|---------------------|----------------|---------------|
| Type | SM | --- |
| Mode Field Diameter | 10 | μm |
| Cladding Diameter | 125 | μm |
| Jacket Diameter | 900 | μm |
| Length | 1 (Min.) | m |

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