



155Mbps InGaAs APD with AGC Pre-Amplifier APD-A13P5-1MC3



Description

The APD-A13P5-1MC3 is a high-performance InGaAs avalanche photodiode (APD) with integrated automatic gain control (AGC) pre-amplifier, packaged in a compact TO-46 can with short cap lens. Optimized for long-wavelength 155Mbps fiber optic communication, the device combines high sensitivity, stable performance, and ease of use with a single +3.3V power supply.

Features

- InGaAs avalanche photodiode with AGC pre-amplifier
- Industry-standard TO-46 package with short cap lens and tab-less design
- Optimized for 155Mbps long-wavelength fiber optic applications
- High sensitivity and low noise
- Operates from single +3.3V power supply

Applications

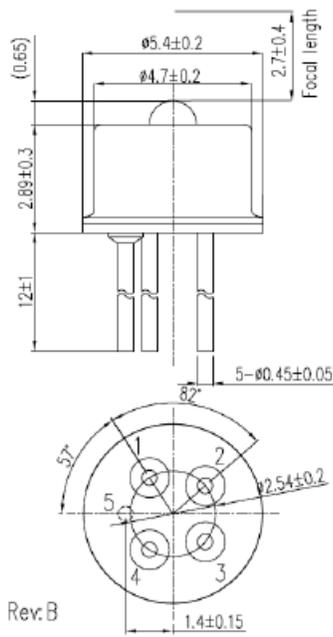
- Fiber optic communication systems (155Mbps)

Specifications

| Absolute Maximum Ratings | | | | |
|--------------------------|------|------|------|------------|
| Parameters | Min. | Max. | Unit | Conditions |
| Storage temperature | -40 | 100 | °C | |
| Operating temperature | -40 | 85 | °C | |
| Lead solder temperature | | 260 | °C | 10 seconds |

| Electro-Optical Characteristics (Typical values are at + 3.3V@25°C) | | | | | | |
|---|------------------|-------|--------------------|-------|------|--|
| Parameters | Symbol | Min. | Typ. | Max. | Unit | Conditions |
| Power supply | V _{CC} | 3.0 | 3.3 | 3.6 | V | |
| Supply current | I _{CC} | | | 32 | mA | No loads |
| APDTIA breakdown voltage | V _{BR} | 34 | | 55 | V | I _d = 10uA, V _{CC} =3.3V |
| Operating voltage | V _{OP} | | V _{BR} -3 | | V | V _{CC} =3.3V |
| V _{BR} temperature coefficient | γ | 0.081 | 0.11 | 0.120 | V/°C | T=-40 to 25°C |
| | | 0.060 | 0.08 | 0.099 | | T=25 to 85°C |
| Small-signal bandwidth | BW | 110 | | | MHz | |
| Rise/Fall time | tr/tf | | | 4.5 | ns | P=-30dBm, V _{apd} =V _{op} |
| Saturation power | P _{sat} | -7 | | | dBm | λ=1310nm, @155.520Mbps |
| Single ended output impedance | R _O | | 50 | | ohm | |
| Wavelength | λ | 1260 | | 1620 | nm | |
| Sensitivity | | | | -43 | dBm | λ=1310nm, @155.520Mbps, PRBS23, ER=10dB, BER=10 ⁻¹⁰ |

Outline Dimensions (unit: mm)



Pin Configuration

| Pin Number | Function |
|------------|----------|
| 1 | Dout(+) |
| 2 | Vcc |
| 3 | Vapd |
| 4 | Dout(-) |
| 5 | Gnd |

Note: Specifications are subject to change without notice.