

PD839C4

DESCRIPTION

PD839C4 is a f35mm InGaAs Avalanche Photodiodes (APD) with Trans Impedance Amplifier(TIA).

This APD with TIA features a high-speed response and low noise, and is suitable for 2.5Gb/s optical communication systems.

Feature

- Built in TIA
- Single 3.3V supply voltage for TIA
- Differential output
- Ball lens cap

APPLICATION

Receiver for optical communication system

ABSOLUTE MAXIMUM RATINGS Note 1)

| Symbol | Parameter | Conditions | Ratings | Unit |
|------------------|---------------------|------------|-----------|------|
| V _{pd} | APD supply voltage | - | VBR | V |
| V _{cc} | TIA supply voltage | - | 6 | V |
| P _{in} | Photo input power | - | 0.5 | mW |
| I _{pd} | APD reverse current | - | 0.5 | mA |
| T _{stg} | Storage temperature | - | -40 ~ +85 | °C |

Note 1: The maximum rating and limitation over which the device should not be operated instant time. And this does not mean the guarantee of its lifetime. As for the reliability, please refer to the reliability report from Mitsubishi Semiconductor Quality Assurance section.

RECOMMENDED OPERATING CONDITIONS

| Symbol | Parameter | Test conditions | Limits | | | Unit |
|-----------------|--------------------|-----------------|--------|------|------|------|
| | | | Min. | Typ. | Max. | |
| V _{cc} | TIA supply voltage | - | 3.0 | 3.3 | 5.5 | V |
| T _c | Case temperature | - | -20 | - | +85 | °C |

ELECTRICAL / OPTICAL CHARACTERISTICS (T_c=25°C, V_{cc}=3.3V, l=1550nm)

| Symbol | Parameter | Test conditions | Limits | | | Unit |
|-----------------|---|---|--------|-----|-----|-----------------------|
| | | | Min | Typ | Max | |
| VBR | Break down voltage | I _d =100mA | 40 | 60 | 80 | V |
| R | Responsivity | M=10, R _L =50W, Single-ended | 9.5 | 15 | - | kV/W |
| I _{cc} | TIA consumption current | P _{in} =0mW | - | 35 | 70 | mA |
| f _c | Cut-off frequency | R _L =50W, -3dB, M=10 | 1.5 | 2.0 | - | GHz |
| i _n | Averaged equivalent input noise current density | P _{in} =0mW, f=10MHz-1.4GHz, R _L =50W | - | 9.0 | - | pA/ Hz ^{1/2} |
| Pr | Minimum received sensitivity | NRZ, PBS=2 ²³ -1, BER=10 ⁻¹⁰ , 2.488G/s, at optimum M | - | -33 | - | dBm |

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InGaAs PIN PHOTO DIODES

Outline drawing

| | | |
|------------------|--|--|
| <h3>PD839C4</h3> | <p>Unit:mm</p> <p>The center of active diameter is 180um away from the center of stem.</p> <p>Lead Connection</p> <ol style="list-style-type: none"> 1) Vpd 2) Vcc 3) $\overline{\text{Out}}$ 4) Out 5) GND(Case) | |
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