

MITSUBISHI PHOTO DIODES

PD839C4

InGaAs AVALANCHE PHOTO DIODES

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
Vpd	APD supply voltage	-	VBR	V
Vcc	TIA supply voltage	-	6	V
Pin	Photo input power	-	0.5	mW
Ipd	APD reverse current	-	0.5	mA
Tstg	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


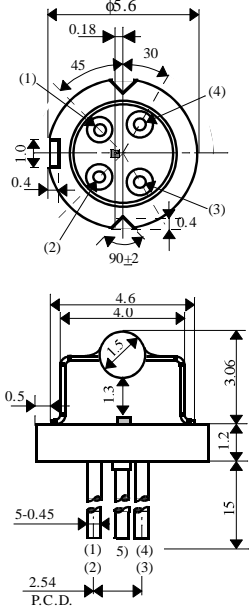
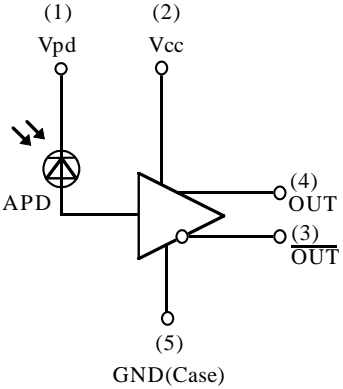
Symbol	Parameter	Test conditions	Limits			Unit
			Min.	Typ.	Max.	
Vcc	TIA supply voltage	-	3.0	3.3	5.5	V
Tc	Case temperature	-	-20	-	+85	°C

ELECTRICAL / OPTICAL CHARACTERISTICS (Tc=25°C, Vcc=3.3V, l=1550nm)

Symbol	Parameter	Test conditions	Limits			Unit
			Min	Typ	Max	
VBR	Break down voltage	Id=100mA	40	60	80	V
R	Responsivity	M=10, RL=50W, Single-ended	9.5	15	-	kV/W
Icc	TIA consumption current	Pin=0mW	-	35	70	mA
fc	Cut-off frequency	RL=50W, -3dB, M=10	1.5	2.0	-	GHz
in	Averaged equivalent input noise current density	Pin=0mW, f=10MHz-1.4GHz, RL=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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Outline drawing

<p>PD839C4</p> 	<p>Unit:mm</p> <p>The center of active diameter is 180um away from the center of stem.</p>  <p>Lead Connection</p> <ul style="list-style-type: none">1) Vpd2) Vcc3) $\overline{\text{Out}}$4) Out5) GND(Case)	
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