

PD839A4

DESCRIPTION

PD839A4 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 5.0V 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 _{dd}	TIA supply voltage	-	7.5	V
P _{in}	Photo input power	-	0.5	mW
I _{pd}	APD reverse current	-	0.5	mA
T _{stg}	Storage temperature	-	-20 ~ +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 _{dd}	TIA supply voltage	-	4.75	5.0	5.46	V
T _c	Case temperature	-	-20	-	+85	°C

ELECTRICAL / OPTICAL CHARACTERISTICS (T_c=25°C, V_{dd}=5.0V, λ=1550nm)

Symbol	Parameter	Test conditions	Limits			Unit
			Min	Typ	Max	
VBR	Break down voltage	I _d =100mA	40	60	80	V
R	Responsivity	P _{in} =0.3mW, DC, M=1	0.8	0.95	-	A/W
I _{dd}	TIA consumption current	P _{in} =0mW	-	35	90	mA
Z _{t_off}	Trans impedance at AGC-off	f=200MHz, AGC off, R _L =50W	-	850	-	W
Z _{t_on}	Trans impedance at AGC-on	f=200MHz, AGC on, R _L =50W	-	265	-	W
f _c	Cut-off frequency	R _L =50W, -3dB, M=10	1.8	2.0	-	GHz
i _n	Averaged equivalent input noise current density	P _{in} =0mW, f=10MHz-1.8GHz, R _L =50W	-	6.5	-	pA/ Hz ^{1/2}
Pr	Minimum received sensitivity	NRZ, PBS=2 ⁻²³ -1, BER=10 ⁻¹⁰ , 2.488G/s, at optimum M	-	-33.5	-	dBm

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InGaAs PIN PHOTO DIODES

Outline drawing

