

Peak Sensitivity Wavelength: 800nm

The MTAPD-06-xxx is a circular ($\Phi 500\mu\text{m}$) .2 mm² active area Avalanche Photodiode with optimized sensitivity at 800 nm & housed in a hermetic TO-46 metal can package. It is well suited for applications requiring High Speed & Low Noise in visible-near IR applications.

FEATURES

- >Fast Rise Time
- >Ultra Low Noise
- >Low Capacitance
- >High Gain
- >Optimum Gain M100

- >Available in 3 operating Voltages:
80v - 120v
120v - 160v
160v - 200v

APPLICATIONS

- >Optical rangefinders
- >High speed optical communications
- >Medical Equipment
- >Bar Code Readers



Absolute Maximum Ratings



ITEMS	SYMBOL	RATINGS	UNIT
Storage Temperature	Tstg	-55 ~ +125	°C
Operating Temperature	Topr	-20 ~ +85	°C
Power Dissipation	Pd	1	mW
Forward Current	If	1	mA
Operating Voltage	Vop	0.95 x Vbr	V
Lead Soldering Temperature *1	Tls	260	°C

*1: Time 10 Sec max

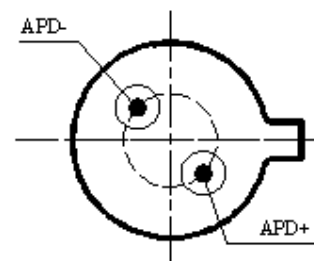
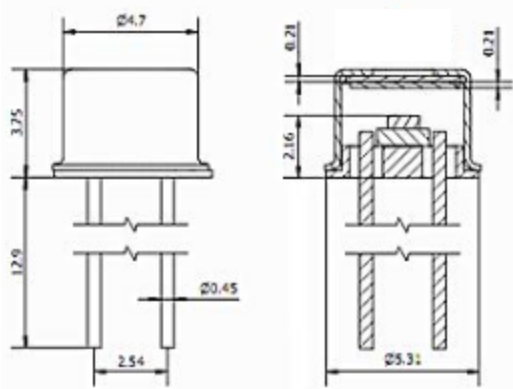
Electrical & Optical Characteristics (Ta=23°C)

ITEMS	SYMBOL	CONDITIONS	MIN.	TYP	MAX.	UNIT
Spectral Response	λ	--		400 - 1100		nm
Active Area		--		Diameter 500		μm
Responsivity	Re	$\lambda=800\text{nm}$, $\text{oe}=1\mu\text{W}$, $\text{M}=100$	35	50	--	A/W
Rise Time	t_R	$f=1\text{MHz}$, $\text{RL}=50\Omega$, $\lambda=800\text{nm}$	--	0.3	--	ns
Dark Current	I_D	$\text{M}=100$	0.05	0.1	0.5	nA
Capacitance	Cj	$\text{M}=100$, $f=1\text{MHz}$		3		pF
Optimal Gain	M	--		100		
Breakdown Voltage	Vbr	$\text{IR}=2\mu\text{A}$	80	--	200	V
Temperature Coefficient		$\text{Tc}=-40^\circ\text{C} - 85^\circ\text{C}$		0.6		V/°C

TO-46 Package Dimensions (2 Pin)

MTAPD-06-005 V_{br}=120-160V

MTAPD-06-006 V_{br}=160-200V

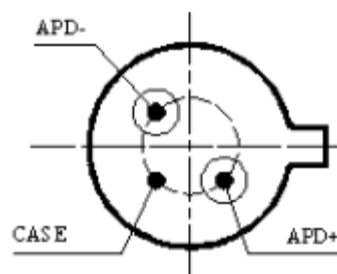
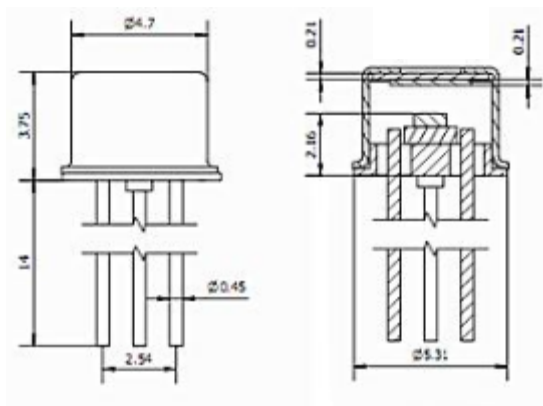


Unit: mm, Tolerance: ± 0.2

TO-46 Package Dimensions (3 Pin)

MTAPD-06-007 V_{br}=120-160V

MTAPD-06-008 V_{br}=160-200V



Unit: mm, Tolerance: ± 0.2

Fig 1 Responsivity, $V_r=0V$

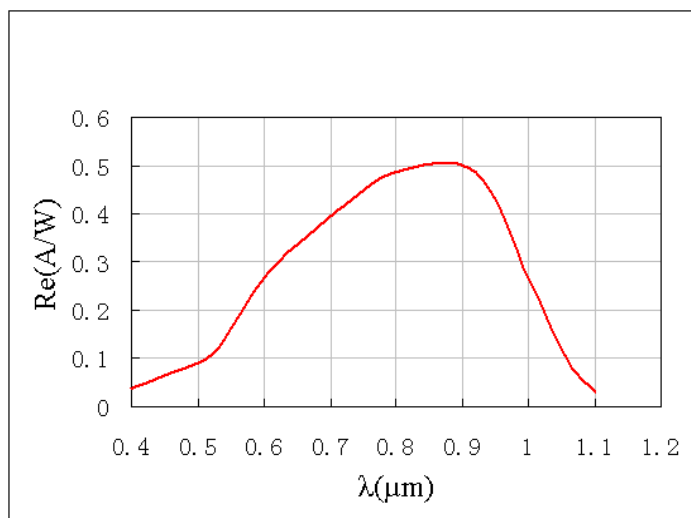


Fig 2 Dark Current

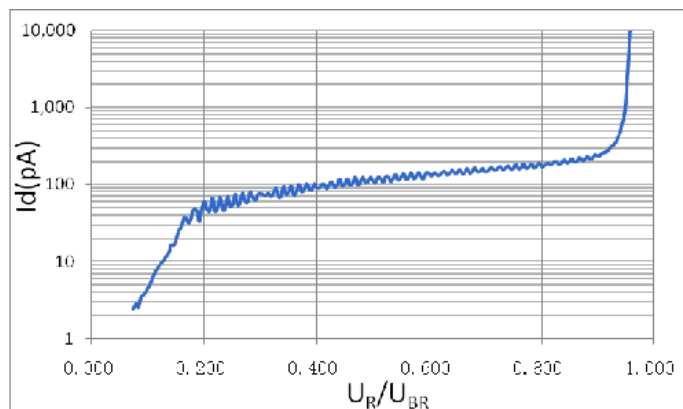


Fig 3 Multiplication

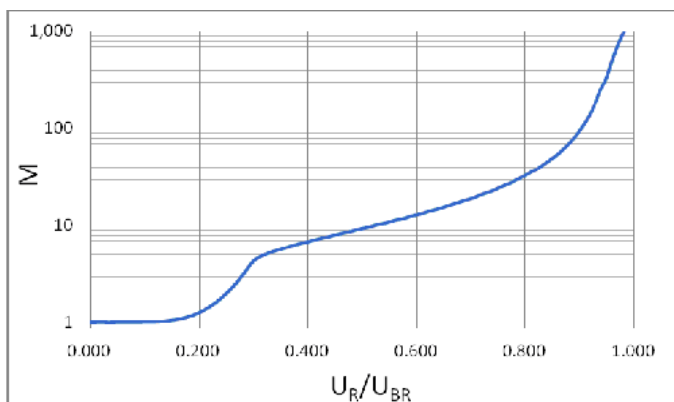
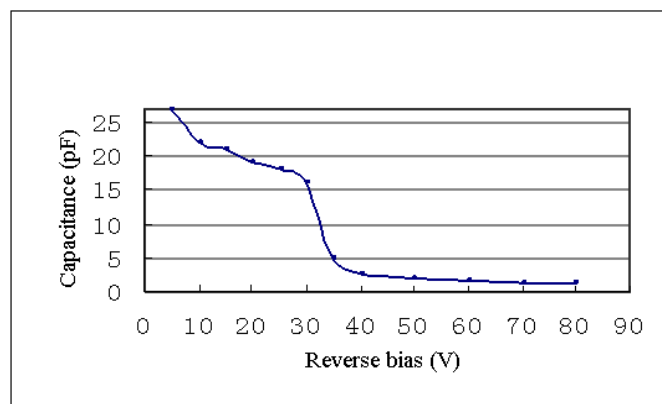
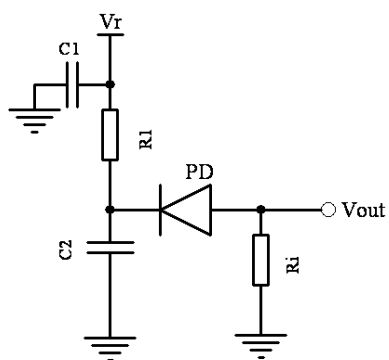


Fig 4 Capacitance

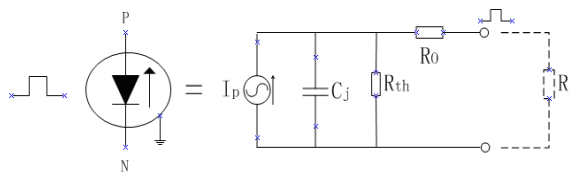


Applications Diagram



Notes: C1 - Filter capacitor, filter noise from Vr.
C2 - bypass capacitor, the loop to ground for AC signal.
R1 - current-limiting resistor, protect APD from higher voltage.
Ri - sampling resistor, convert the current signal into a voltage signal.

Equivalent Circuit Diagram



The information contained herein is subject to change without notice.



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