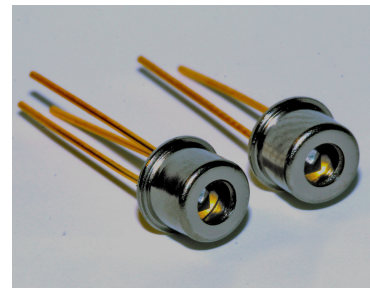


Peak Sensitivity Wavelength: 800nm

The MTAPD-06-xxx is a circular ($\Phi 230\mu\text{m}$) 0.04 mm^2 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
- >Operating Voltages: 120v - 160v
160v - 200v
Other Voltages Available
- >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 |

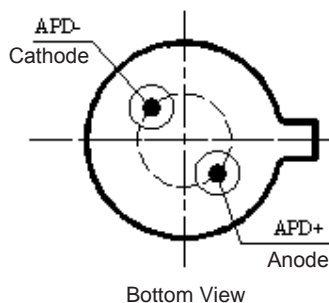
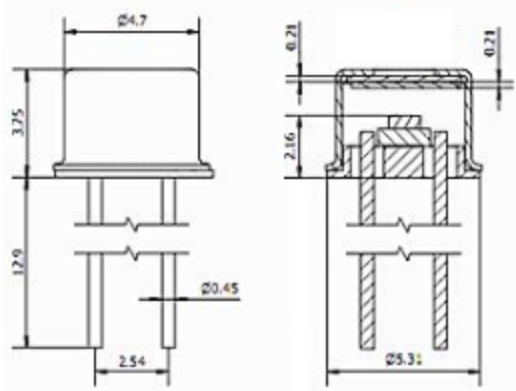
*1: Time 10 Sec max

Electrical & Optical Characteristics (Ta=23°C)

| ITEMS | SYMBOL | CONDITIONS | MIN. | TYP | MAX. | UNIT |
|-------------------------|-----------|---|------|--------------|------|---------------|
| Spectral Response | λ | -- | | 400 - 1100 | | nm |
| Active Area | | -- | | Diameter 230 | | μm |
| Responsivity | Re | $\lambda=800\text{nm}$, $oe=1\mu\text{W}$, $M=100$ | 35 | 50 | -- | A/W |
| Rise Time | t_R | $f=1\text{MHz}$, $R_L=50\Omega$, $\lambda=800\text{nm}$ | -- | 0.3 | -- | ns |
| Dark Current | I_D | $M=100$ | 0.02 | 0.05 | 0.4 | nA |
| Capacitance | Cj | $M=100$, $f=1\text{MHz}$ | | 1.5 | | pF |
| Optimal Gain | M | -- | | 100 | | |
| Breakdown Voltage | Vbr | $I_R=2\mu\text{A}$ | 80 | -- | 200 | V |
| Temperature Coefficient | | $T_c=-40^\circ\text{C} - 85^\circ\text{C}$ | | 0.6 | | V/°C |

TO-46 Package Dimensions (2 Pin)

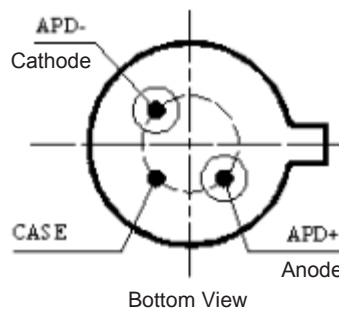
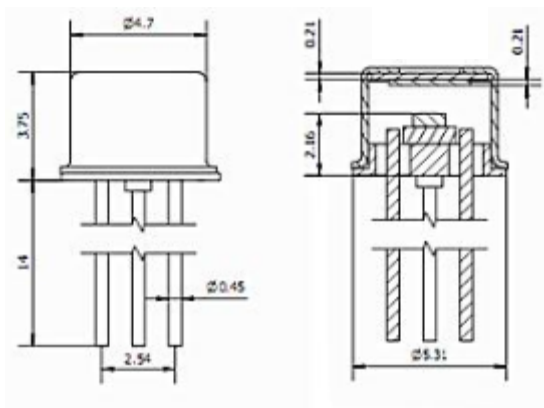
MTAPD-06-001 Vbr=120-160V
MTAPD-06-002 Vbr=160-200V



Unit: mm, Tolerance: ±0.2

TO-46 Package Dimensions (3 Pin)

MTAPD-06-003 Vbr=120-160V
MTAPD-06-004 Vbr=160-200V



Unit: mm, Tolerance: ±0.2

Fig 1 Responsivity, Vr=0V

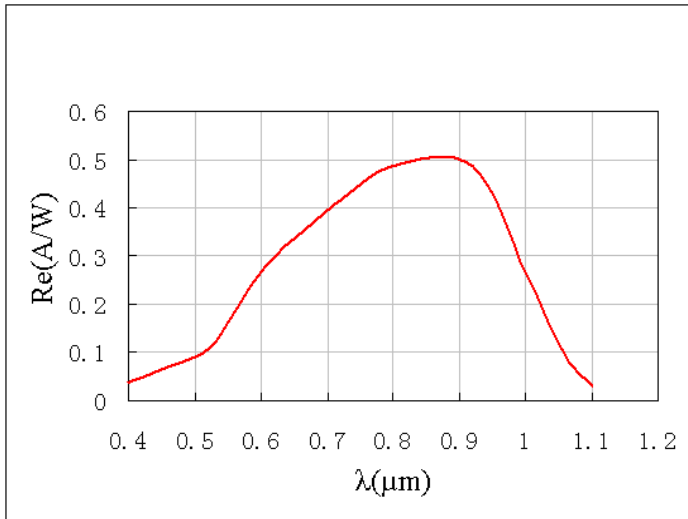


Fig 2 Dark Current

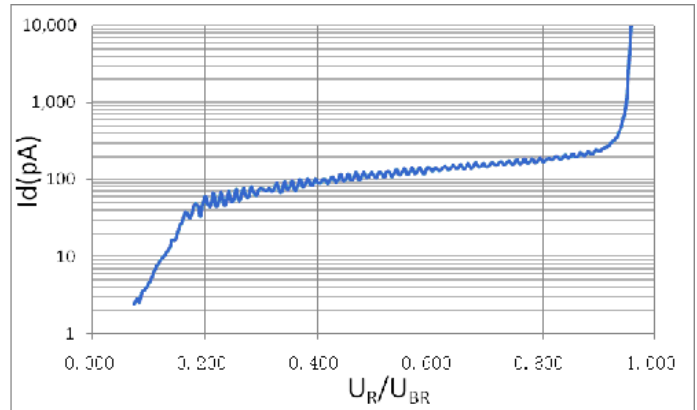


Fig 3 Multiplication

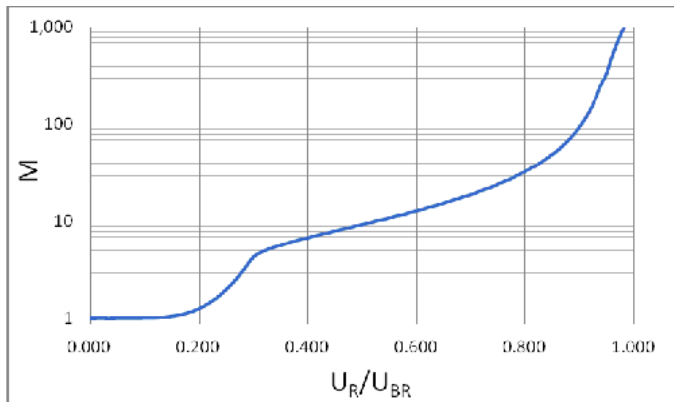
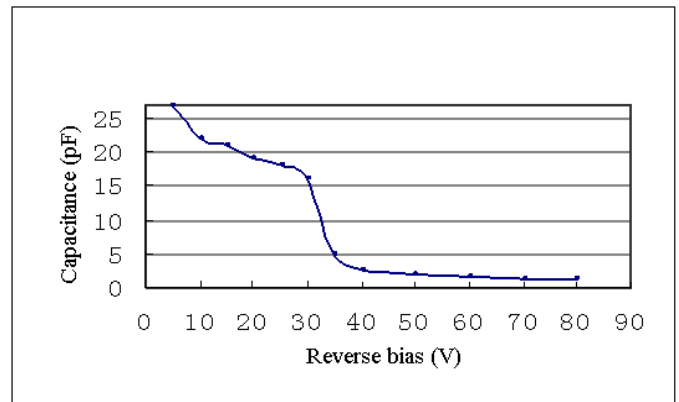
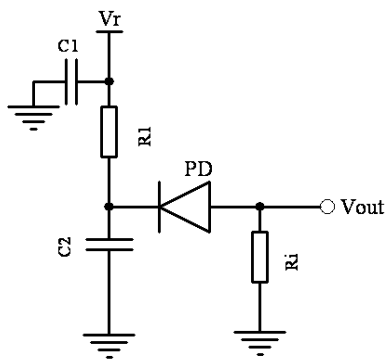


Fig 4 Capacitance

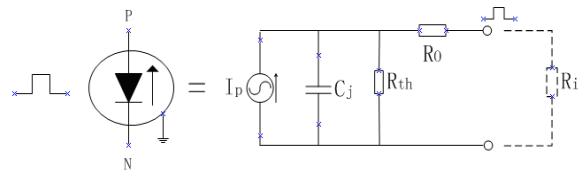


Applications Diagram



- 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.



2016-11-04