

**SILICON PIN PHOTO DIODE****1、 DESCRIPTIONS:**

AT405-PD-01 is a high speed and high sensitive silicon PIN photodiode with exceptionally stable characteristics and high illumination sensitivity. mounted in black epoxy package.

**2、 FEATURE:**

- Fast Response Time.
- High Photo Sensitivity.
- Fast Switching Time.
- Lead Free product, in compliance with RoHS.

**3、 APPLICATIONS:**

- High Speed Photo Detector.
- Security System.
- Camera.

**4、 ABSOLUTE MAXIMUM RATINGS AT Ta=25°C**

| Parameter                 | Symbol | Ratings                             | Unit |
|---------------------------|--------|-------------------------------------|------|
| Power Dissipation         | PD     | 150                                 | mW   |
| Reverse Breakdown Voltage | V(BR)  | 20                                  | V    |
| Operating Temperature     | Topr   | -40~+100                            | °C   |
| Storage Temperature       | Tstg   | -40~+100                            | °C   |
| Soldering Temperature     | Tsol   | 260°C for 5 sec Max (2mm from Body) |      |

## 5、 TYPICAL ELECTRICAL &amp; OPTICAL CHARACTERISTICS

(ta=25°C)

| Parameter                      | Symbol           | Min. | Type | Max. | Unit    | Test Condition                                  |
|--------------------------------|------------------|------|------|------|---------|---|
| Reverse Light Current          | $I_L$            | 30   | 42   |      | $\mu A$ | $V_R=5v$<br>$E_e=1mw/cm^2$<br>$\lambda_p=940nm$ |
| Reverse Dark Current           | $I_D$            |      | 5    | 30   | nA      | $V_R=20v$<br>$E_e=0mw/cm^2$                     |
| Reverse Breakdown Voltage      | $V(BR)$          | 32   |      |      | V       | $I_R=100\mu A$<br>$E_e=0mw/cm^2$                |
| Rise Time                      | $T_r$            |      | 5    |      | nS      | $V_R=20v$<br>$RL=50\Omega$                      |
| Fall Time                      | $T_f$            |      | 5    |      | ns      |   |
| Range Of Spectral Bandwidth    | $\lambda_{10\%}$ | 750  |      | 1100 | nm      |   |
| Wavelength Of Peak Sensitivity | $\lambda_p$      |      | 940  |      | nm      |   |
| Open-Circuit Voltage           | $V_{oc}$         |      | 0.38 |      | V       | $E_e=1mw/cm^2$<br>$\lambda_p=940nm$             |
| Short-Circuit Current          | $I_{sc}$         |      | 35   |      | $\mu A$ | $E_e=1mw/cm^2$<br>$\lambda_p=940nm$             |
| Total Capacitance              | $C_t$            |      | 11   |      | pF      | $V_R=0v$<br>$E_e=0mw/cm^2$<br>$f=1.0MHZ$        |
| Forward Voltage                | $V_F$            |      | 1.3  |      | V       | $I_F=100mA, E=0$                                |

6、 TYPICAL ELECTRO-OPTICAL CHARACTERISTICS CURVES:

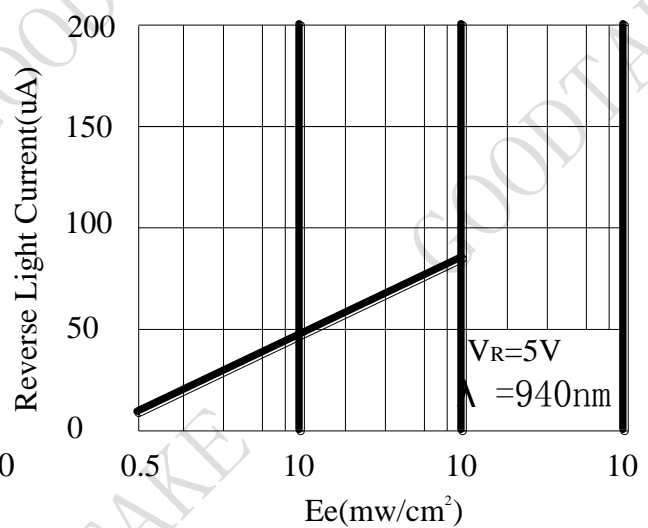
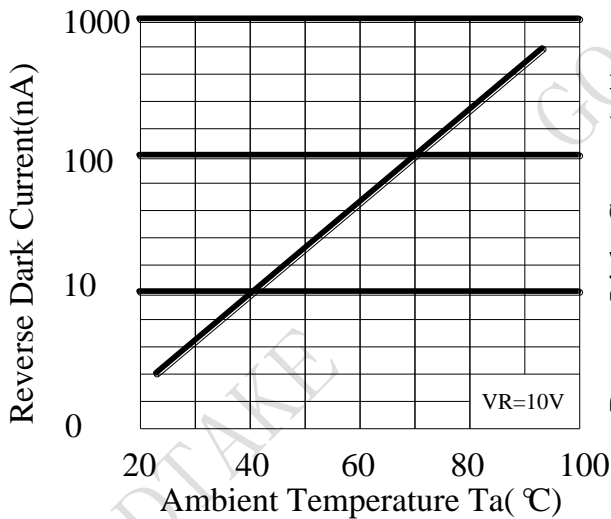
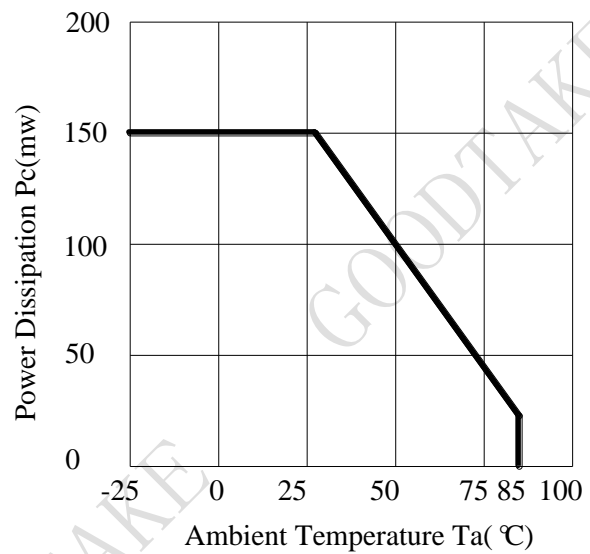
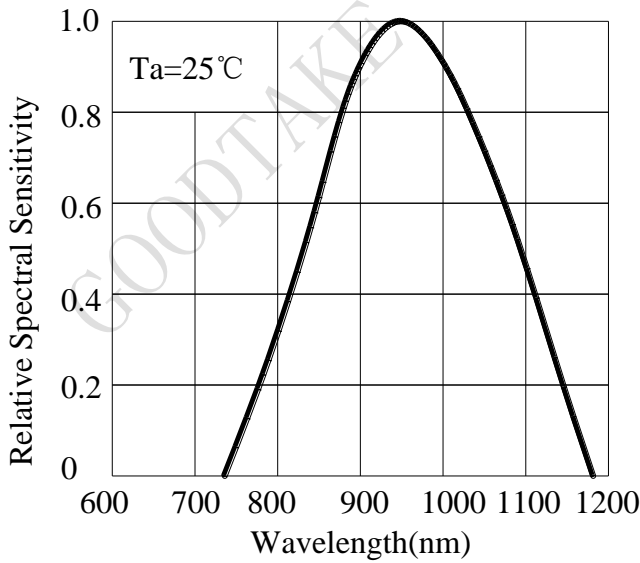


Fig.3 Reverse Dark Current (nA) Vs Ambient Temperature Ta (°C)

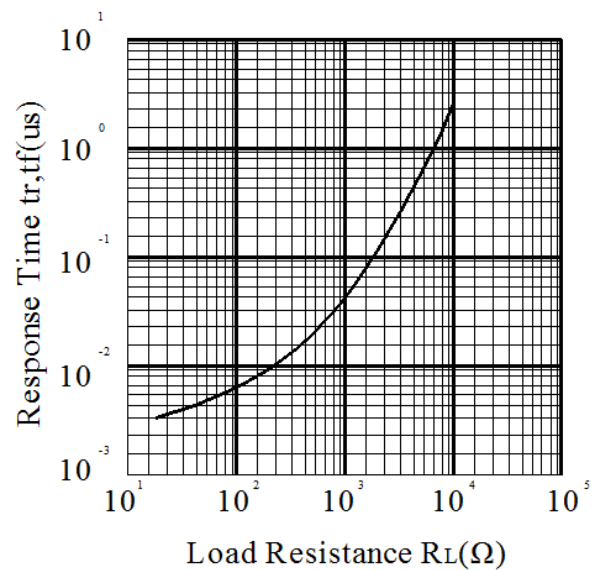
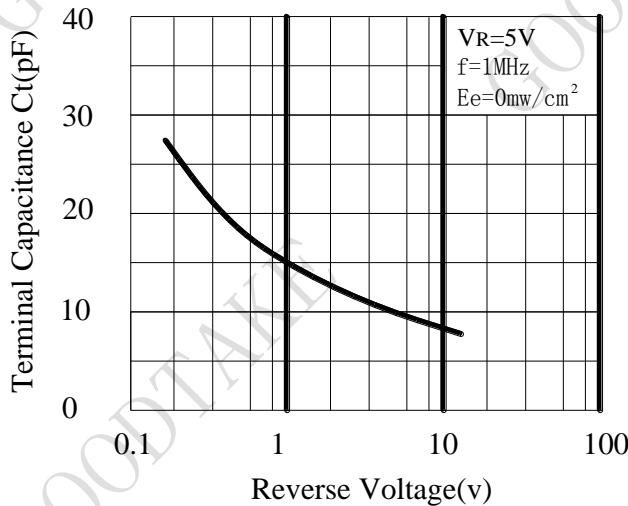
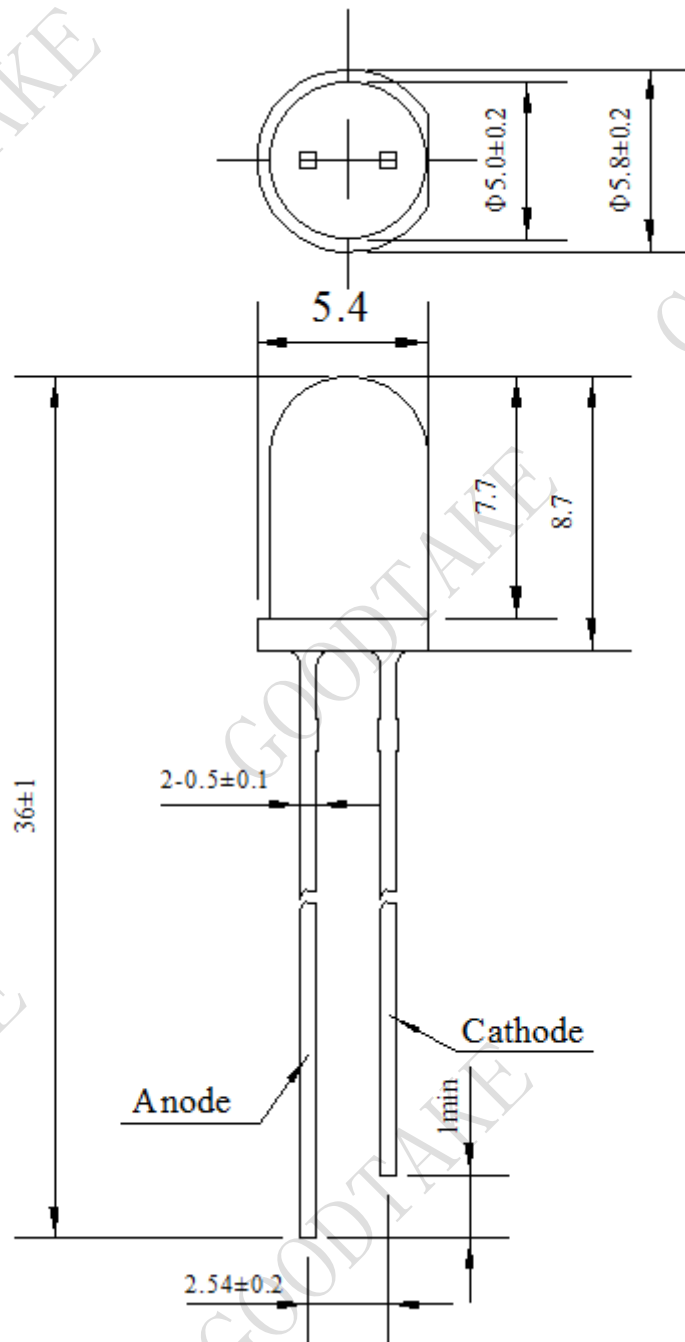


Fig.5 Terminal Capacitance Vs Reverse Voltage

Fig.6 Response Time Vs Load Resistance

**7. PACKAGE DIMENSIONS:**



1. All dimensions are in millimeters
2. Tolerance is  $\pm 0.25$  unless otherwise noted