

AT405-PD-01

DATA SHEET

REV. : 1.0

DATE : 20-Apr.-2005

FEATURES:

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

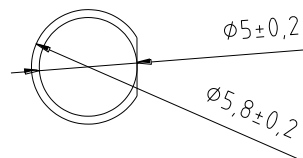
DESCRIPTIONS:

- AT405-PD-01 is a high speed and high sensitive silicon PIN photodiode with exceptionally stable characteristics and high illumination sensitivity.
- Mounted in 5mm diameter and black epoxy package.

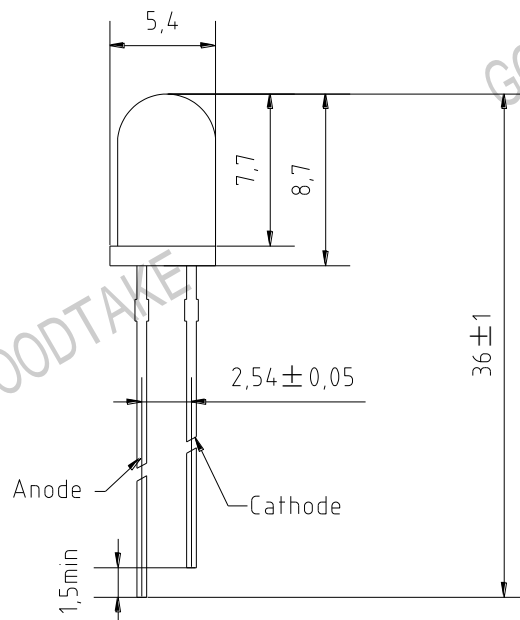
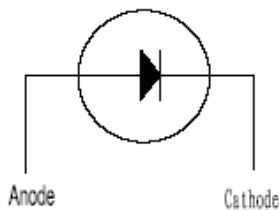
APPLICATIONS:

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

DIMENSIONS:



INTERNAL CIRCUIT:



NOTE: 1. All dimensions are in millimeter, tolerance is ± 0.5 unless otherwise noted.
 2. Epoxy meniscus extends ≤ 1 mm down to the lead is allowed.

■ ABSOLUTE MAXIMUM RATINGS AT Ta=25°C

Parameter	Symbol	Ratings	Unit
Power Dissipation	P _D	100	mW
Reverse Breakdown Voltage	V _(BR)	60	V
Operating Temperature	T _{opr}	-40~+85	°C
Storage Temperature	T _{stg}	-55~+100	°C
Soldering Temperature	T _{sol}	270°C for 6 sec Max (2mm from Body)	

■ TYPICAL ELECTRICAL & OPTICAL CHARACTERISTICS (Ta=25°C)

Parameter	Symbol	Min.	Type	Max.	Unit	Test Condition
Reverse Light Current	I _L		42		μA	V _R =5V E _e =1mW/cm ²
Reverse Dark Current	I _d			10	nA	V _R =10V E _e =0mW/cm ²
Reverse Breakdown Voltage	V _(BR)	33			V	I _R =100μA E _e =0mW/cm ²
Rise Time	T _r		40		nS	V _R =20V λ _p =850nm R _L =50Ω
Fall Time	T _f		40		nS	
Forward Voltage	V _F			1.2	V	I _F =1mA
Total Capacitance	C _T		21		pF	V _R =5V E _e =0mW/cm ² f=1.0MHz

■ RELIABILITY TEST ITEMS AND CONDITIONS:

NO	Item	Test Conditions	Test Hours/Cycle	Sample Quantity	Test Result
1	Solder Heat	TEMP: 270°C ± 3°C	10 SEC	11 pcs	0 DEFECT
2	Temperature Cycle	H: +85°C 60min \updownarrow 10min L: -25°C 60min	16 cycles	22 pcs	0 DEFECT
3	Thermal Shock	H: +85°C 30min \updownarrow 30sec L: -25°C 30min	10 cycles	11 pcs	0 DEFECT
4	High Temperature Storage	TEMP: +85°C	1000 HRS	22 pcs	0 DEFECT
5	Low Temperature Storage	TEMP: -25°C	1000 HRS	22 pcs	0 DEFECT
6	High Temperature High Humidity Storage	85°C / 93% RH	1000HRS	22 pcs	0 DEFECT

■ TYPICAL ELECTRO-OPTICAL CHARACTERISTICS CURVES:

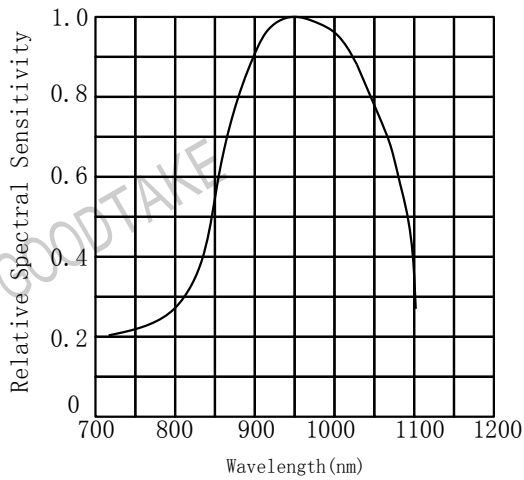


FIG. 1 Relative Spectral Sensitivity vs. Wavelength

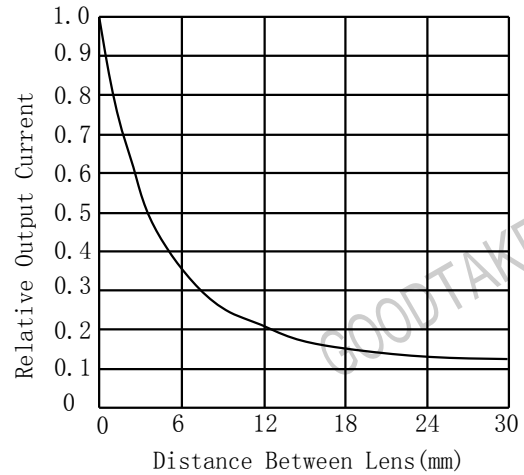


FIG. 2 Coupling Characteristics

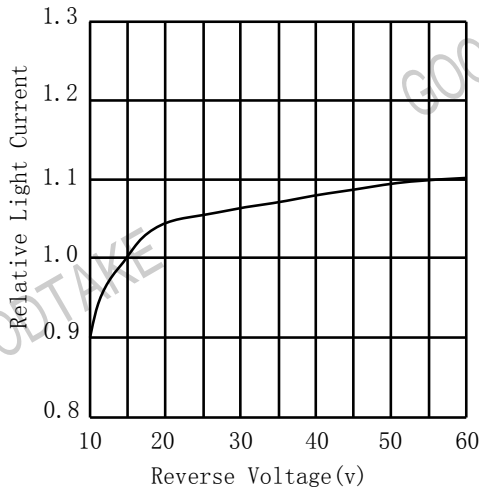


FIG. 3 Vr vs Relative IL

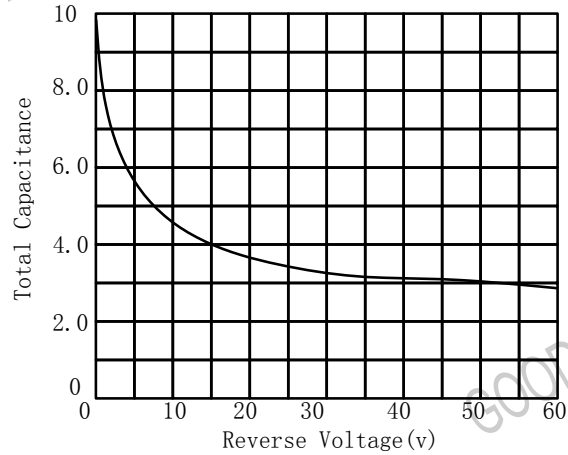


FIG. 4 Vr vs Cr

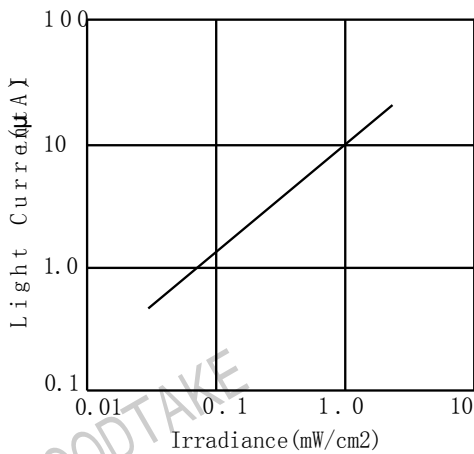


FIG. 5L IL vs VI

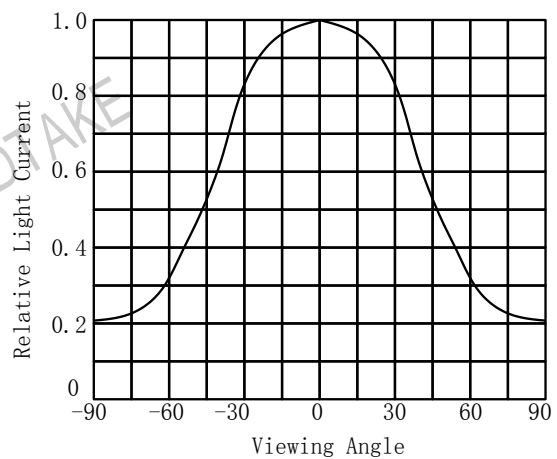


FIG. 6 Angle vs Relative IL