

AT403-PT-02

DATA SHEET

REV. : 1.0

DATE : 20-Apr.-2005

FEATURE:

- Fast Response Time.
- High Photo Sensitivity.
- Visible Light Cut-Off Type
- Lead Free Product, In Compliance With RoHS.

DESCRIPTIONS:

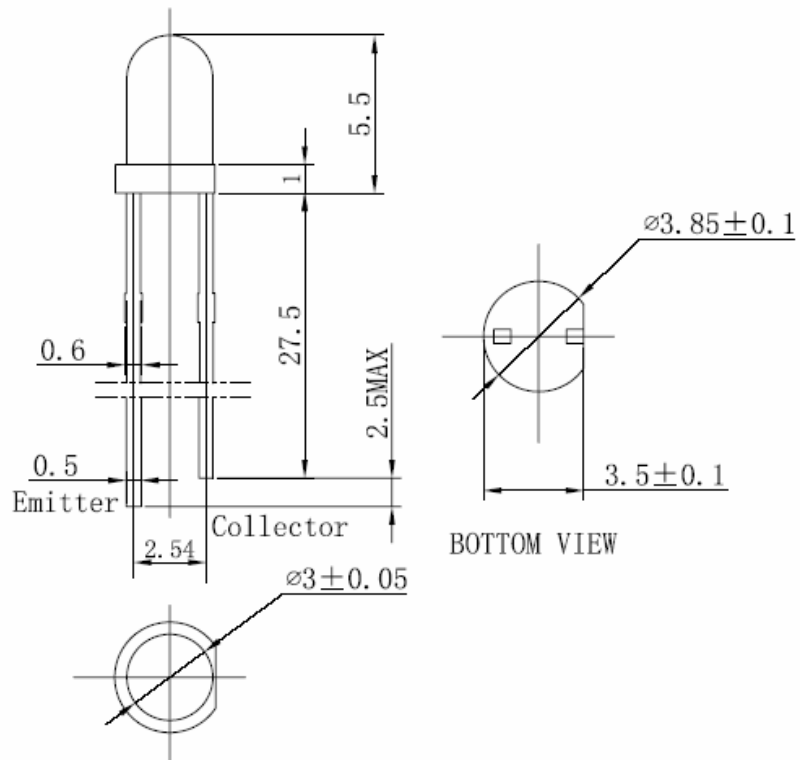
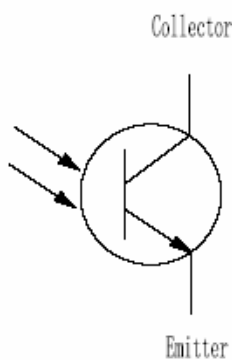
- AT403-PT-02 is a high speed and high sensitive silicon NPN phototransistor with exceptionally stable characteristics and high illumination sensitivity.
- Mounted in 3mm diameter black epoxy package.

APPLICATIONS:

- Optical Detectors.
- Floppy Disk Drivers.
- VCR, Camcorders.

DIMENSIONS:

INTERNAL CIRCUIT:



NOTE: 1. All dimensions are in millimeter, tolerance is ± 0.25 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	80	mW
Collector-Emitter Breakdown Voltage	V _{CEO}	33	V
Emitter-Collector Breakdown Voltage	V _{ECO}	5	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
Collector-Emitter Breakdown Voltage	V _{(BR)CEO}	33			V	I _C =100μA E _e =0mW/cm ²
Emitter-Collector Breakdown Voltage	V _{(BR)ECO}	5			V	I _E =100μA E _e =0mW/cm ²
Collector-Emitter Saturation Voltage	V _{CE(sat)}			0.2	V	I _C =2mA I _B =100μA
Rise Time	T _r		5		μS	V _{CE} =5V I _C =1mA R _L =1000Ω
Fall Time	T _f		5		μS	
Collector Dark Current	I _{CEO}			100	nA	V _{CE} =10V E _e =0mW/cm ²
On State Collector Current	I _{C(on)}	4			mA	5V E _e =1mW/cm ² λ _p =940nm
Peak Wavelength of Sensitive	λ _p		880		nm	

■ 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:+100°C 60min \updownarrow 10min L:-30°C 60min	16 cycles	22 pcs	0 DEFECT
3	Thermal Shock	H:+100°C 30min \updownarrow 30sec L:-30°C 30min	10 cycles	11 pcs	0 DEFECT
4	High Temperature Storage	TEMP: +100°C	1000 HRS	22 pcs	0 DEFECT
5	Low Temperature Storage	TEMP: -30°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:

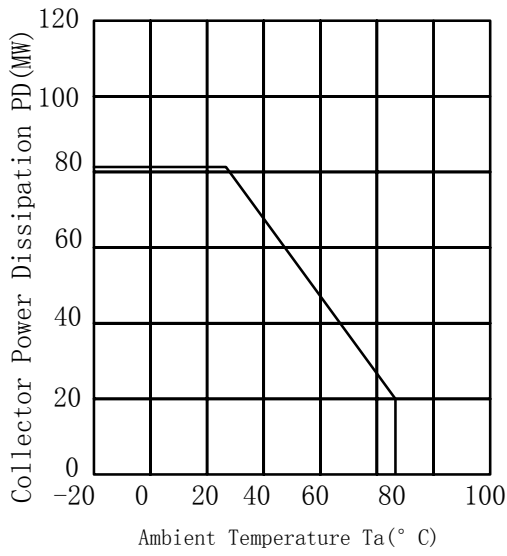


FIG. 1 Collector Pd vs Ta

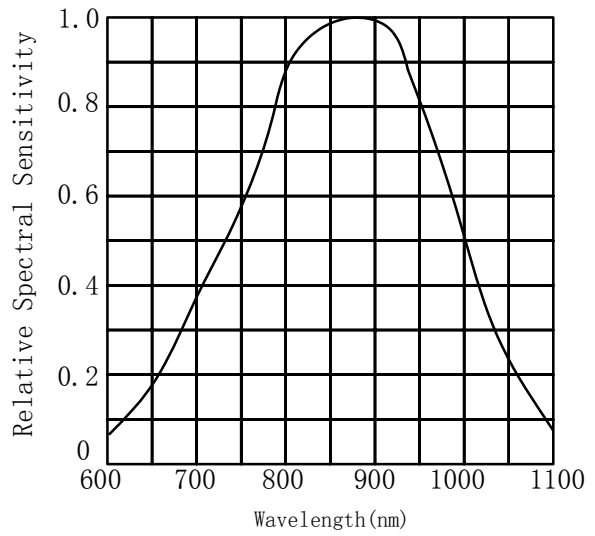


FIG. 2 Relative Spectral Sensitivity vs.

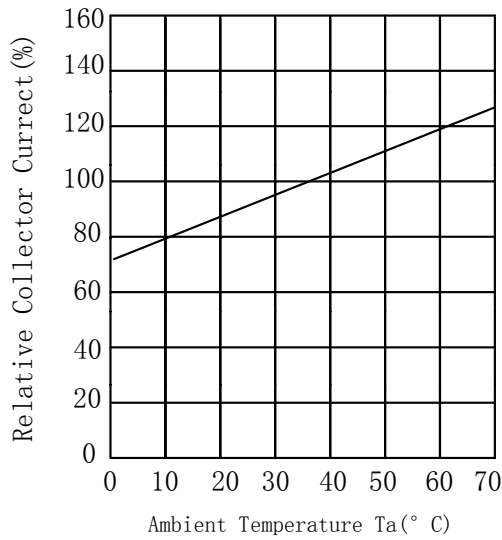


FIG. 3 Relative Ic vs. Ta

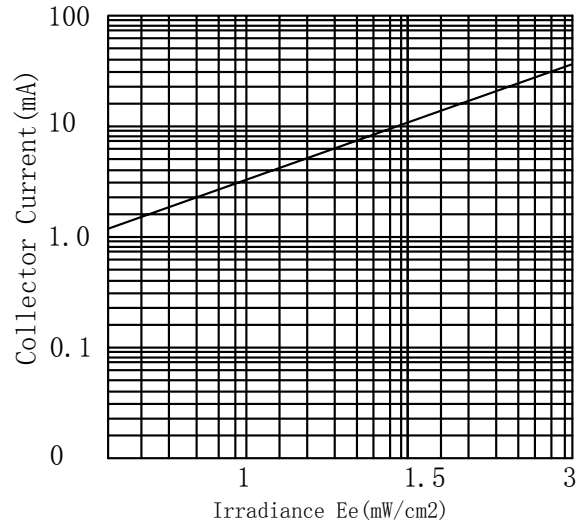


FIG. 4 Ic vs Iv

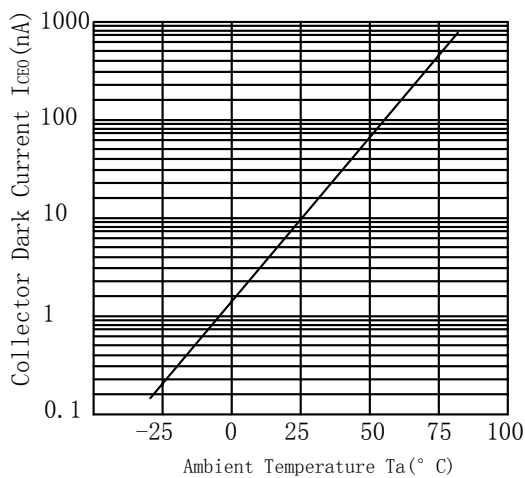


FIG. 5 Id vs Ta