

Features

- Fast response time
- High sensitivity
- Small junction capacitance
- Pb Free
- This product itself will remain within RoHS compliant version
- Compliance with EU REACH
- Compliance Halogen Free(Br < 900ppm, Cl < 900ppm, Br+Cl < 1500ppm).

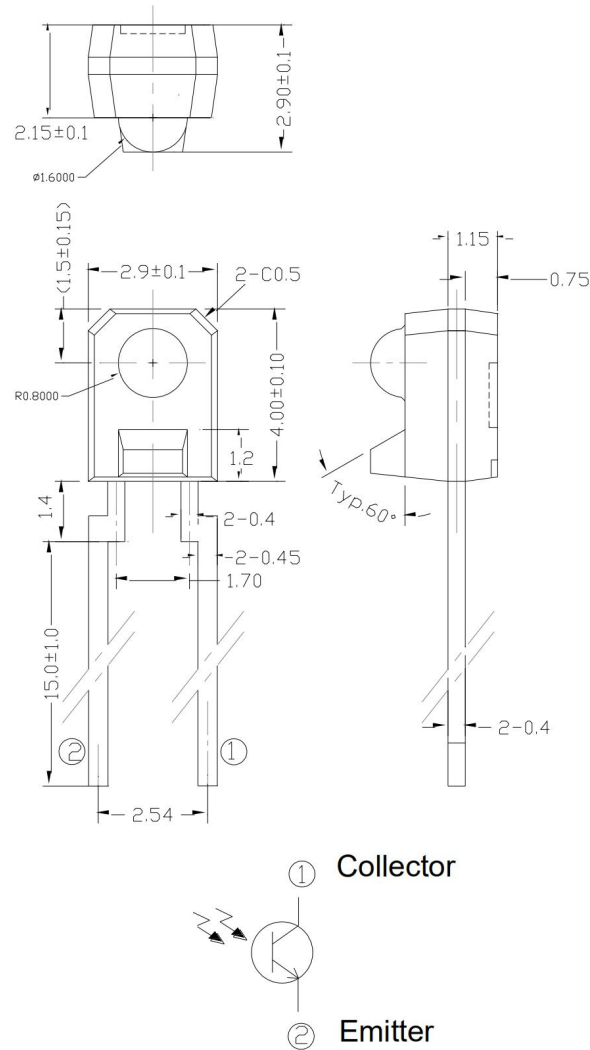
Application

- Optoelectronic switch
- VCR, Video Camera
- Floppy disk drive
- Infrared applied system

Description

ST-370B is a phototransistor in miniature package which is molded in a plastic with spherical top view lens. The device is spectrally matched to infrared emitting diode.

PACKAGE DIMENSIONS



NOTES:

1. All dimensions are in millimeters (inches).
2. Tolerance is $\pm 0.25\text{mm}(.010\text{'})$ unless otherwise noted.
3. Lead spacing is measured where the leads emerge from the package.

ABSOLUTE MAXIMUM RATINGS AT TA =25°C

Parameter	Symbol	Rating	Unit
Collector-Emitter Voltage	V_{CEO}	30	V
Emitter-Collector-Voltage	V_{ECO}	5	V
Collector Current	I_C	20	mA
Operating Temperature	T_{opr}	-25 ~ +85	°C
Storage Temperature	T_{stg}	-40 ~ +85	°C
Lead Soldering Temperature (*1)	T_{sol}	260	°C
Power Dissipation at (or below) 25°C Free Air Temperature	P_c	75	mW

Notes: *1 Soldering time \leq 5 seconds

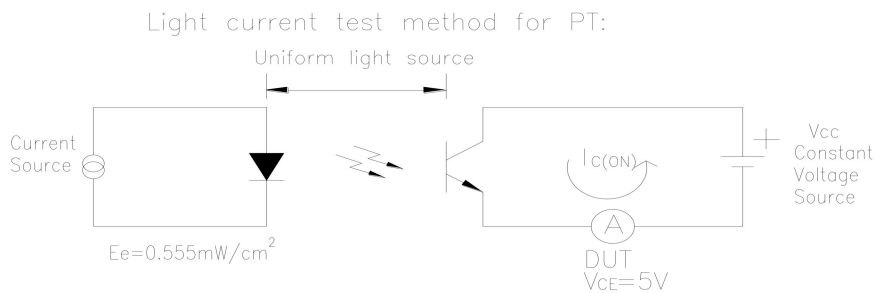
ELECTRICAL OPTICAL CHARACTERISTICS AT TA=25°C

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Rang of Spectral Bandwidth	$\lambda_{0.5}$	----	740	-----	1100	nm
Wavelength of Peak Sensitivity	λ_P	----	-----	940	----	nm
Collector-Emitter Breakdown Voltage	BV_{CEO}	$I_C=100\mu A$ $E_e=0mW/cm^2$	30	----	----	V
Emitter-Collector Breakdown Voltage	BV_{ECO}	$I_E=100\mu A$ $E_e=0mW/cm^2$	5	----	----	V
Collector Dark Current	I_{CEO}	$V_{CE}=20V$ $E_e=0mW/cm^2$	----	----	100	nA
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=2mA$ $E_e=1mW/cm^2$	----	----	0.4	V
On State Collector Current	$I_{C(on)}$	$V_{CE}=5V$ $E_e=0.555mW/cm^2$	1.59	----	3.41	mA

RanksCondition: $V_{CE}=5V$, $E_e=0.555mW/cm^2$

Symbol	Condition	Ranks	Min.	Max.	Unit
$I_{C(ON)}$	$V_{CE}=5V$ $E_e=0.555mW/cm^2$	B	1.59	2.98	mA
		A	1.77	3.41	

Notes: This bin table is only for reference, not for specific bin shipment.

Test Method For $I_{C(ON)}$:Condition: $V_{CE}=5V$, $E_e=0.555mW/cm^2$ 

Typical Electro-Optical Characteristics Curves

Fig.1 Spectral Sensitivity

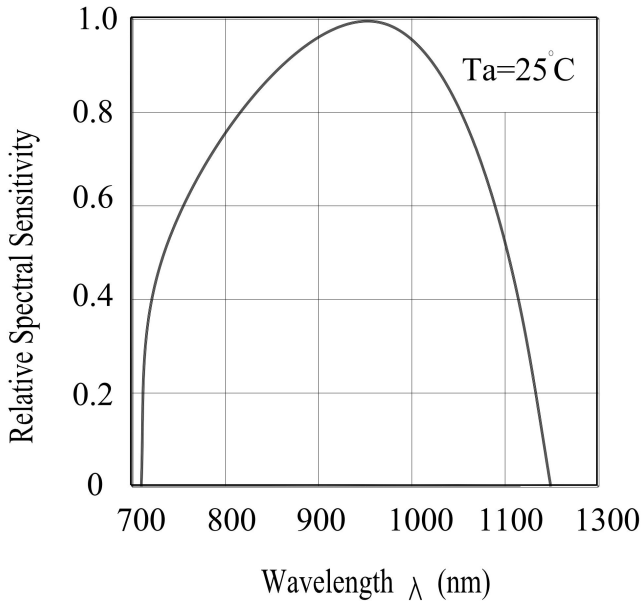


Fig.2 Collector Current vs. Irradiance

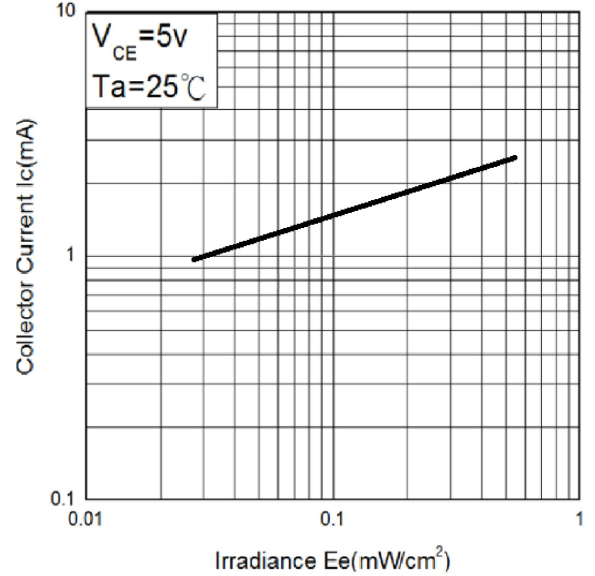
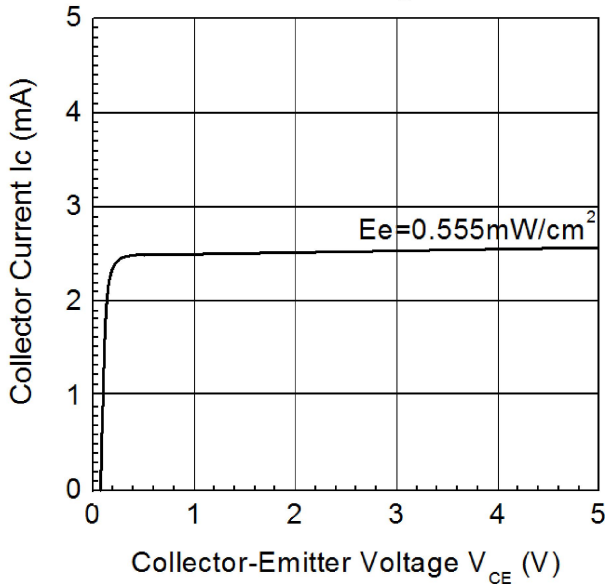


Fig.3 Collector Current vs. Collector-Emitter Voltage



Packing Quantity Specification

1. 1000Pcs/1Bag, 20 Bag/1Box
2. 4Boxes/1Carton

Label Form Specification

製品名 PRODUCT	
コードNo. CODE No.	
数量 Q'TY	
ロットNo. LOT No.	
備考 REMARKS	
SIVAGO [®] SEMICONDUCTOR	

- PRODUCT: Part Number
- CODE NO.: Product Serial Number
- QTY: Packing Quantity
- LOT No: Lot Number
- REMARKS:Remarks

Notes

Lead Forming

1. During lead frame bending, the lead frame should be bent at a distance more than 3mm from bottom of the epoxy.

Note: Must fix lead frame and do not touch epoxy before bending to avoid Phototransistors broken.

2. Lead forming should be done before soldering.

3. Avoid stressing the Phototransistor package during leads forming. The stress to the base may damage the Phototransistor's characteristics or it may break the Phototransistors.

4. Cut the Phototransistor lead frame at room temperature. Cutting the lead frame at high temperatures may cause failure of the Phototransistors.

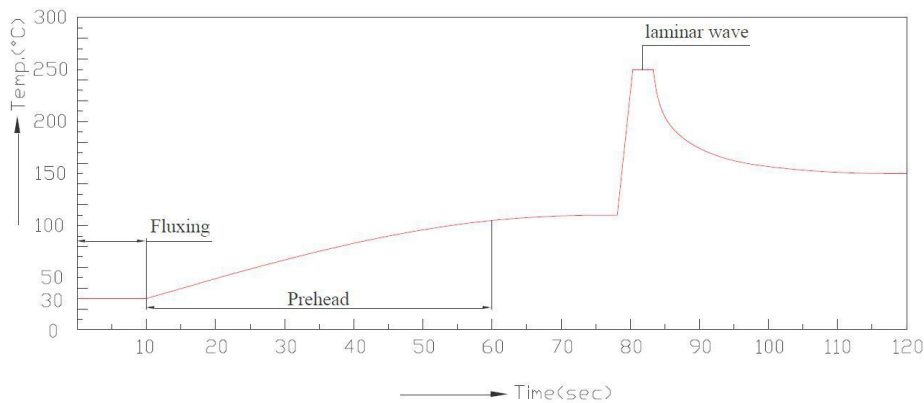
5. When mounting the Phototransistors onto a PCB, the PCB holes must be aligned exactly with the lead position of the Phototransistor. If the Phototransistors are mounted with stress at the leads, it causes deterioration of the epoxy resin and this will degrade the Phototransistors.

Soldering

- Careful attention should be paid during soldering. When soldering, leave more than 3mm from solder joint to epoxy bulb, and soldering beyond the base of the tie bar is recommended.
- Recommended soldering conditions:

Hand Soldering		DIP Soldering	
Temp. at tip of iron	300°C Max. (30W Max.)	Preheat temp.	100°C Max. (60 sec Max.)
Soldering time	3 sec Max.	Bath temp. & time	260 Max., 5 sec Max
Distance	3mm Min.(From solder joint to epoxy bulb)	Distance	3mm Min. (From solder joint to epoxy bulb)

3. Recommended soldering profile



- Avoiding applying any stress to the lead frame while the Phototransistors are at high temperature particularly when soldering.
- Dip and hand soldering should not be done more than one time
- After soldering the Phototransistors, the epoxy bulb should be protected from mechanical shock or vibration until the Phototransistors return to room temperature.
- A rapid-rate process is not recommended for cooling the Phototransistors down from the peak temperature.
- Although the recommended soldering conditions are specified in the above table, dip or hand soldering at the lowest possible temperature is desirable for the Phototransistors.
- Wave soldering parameter must be set and maintain according to recommended temperature and dwell time in the solder wave.

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