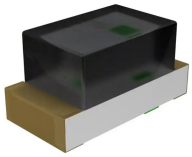
SMD Phototransistor

ST-1T036B

Features



Fast response time

High photo sensitivity

Small junction capacitance

Pb free

The product itself will remain within RoHS compliant version.

Compliance with EU REACH

Compliance Halogen Free .(Br <900 ppm ,Cl <900 ppm , Br+Cl < 1500 ppm).

Application

Miniature switch

Counters and sorter

Position sensor

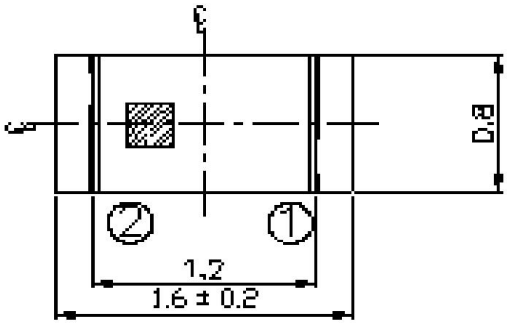
Infrared applied system

Encoder

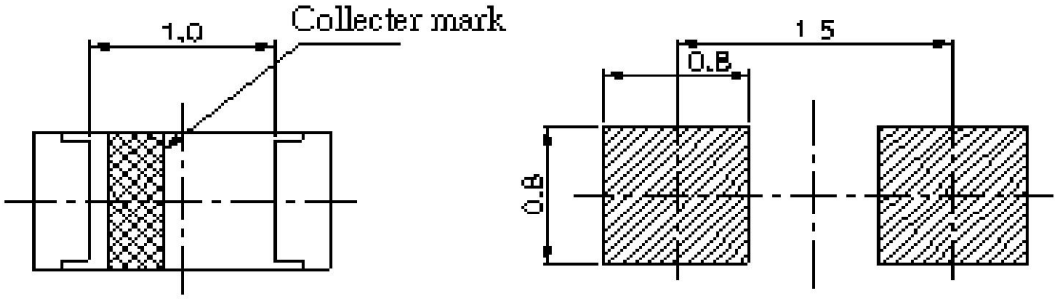
Description

ST-1T036B is a phototransistor in miniature SMD Package which is molded in a black epoxy with flat top view lens.The device is Spectrally matched to visible and infrared emitting diode.

PACKAGE DIMENSIONS



For reflow soldering (Propose)



NOTES:

1.All dimensions are in millimeters

2.Tolerances unless dimensions ±0.1mm

3.Suggested pad dimension is just for reference only

Please modify the pad dimension based on individual need

ABSOLUTE MAXIMUM RATINGS AT TA =25℃

Parameter	Symbol	Rating	Units
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	℃
Storage Temperature	T_{stg}	-40 ~ +85	℃
Soldering Temperature *1	T_{sol}	260	℃
Power Dissipation at(or below) 25℃Free Air Temperature	P_d	75	mW

Notes: *1:Soldering time≦5 seconds.

ELECTRICAL OPTICAL CHARACTERISTICS AT TA=25℃

Parameter	Symbol	Condition	Min.	Typ.	Max.	Units
Rang Of Spectral Bandwidth	$\lambda_{0.5}$	---	730	---	1100	nm
Wavelength Of Peak Sensitivity	λ_P	---	---	940	---	nm
Collector-Emitter Breakdown Voltage	BV_{CEO}	I_C=100μAEe=0 mW/cm²	30	---	---	V
Emitter-Collector Breakdown Voltage	BV_{ECO}	I_E=100μAEe=0 mW/cm²	5	---	---	V
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	I_C=2mAEe=1m W/cm²	---	---	0.4	V
Collector Dark Current	I_{CEO}	V_{CE}=20VEe=0m W/cm²	---	---	100	nA
On State Collector Current	$I_{C(ON)}$	V_{CE}=5VEe=1m W /cm²	0.3	0.6	---	mA

Typical Electro-Optical Characteristics Curves

Fig.1 Spectral Sensitivity

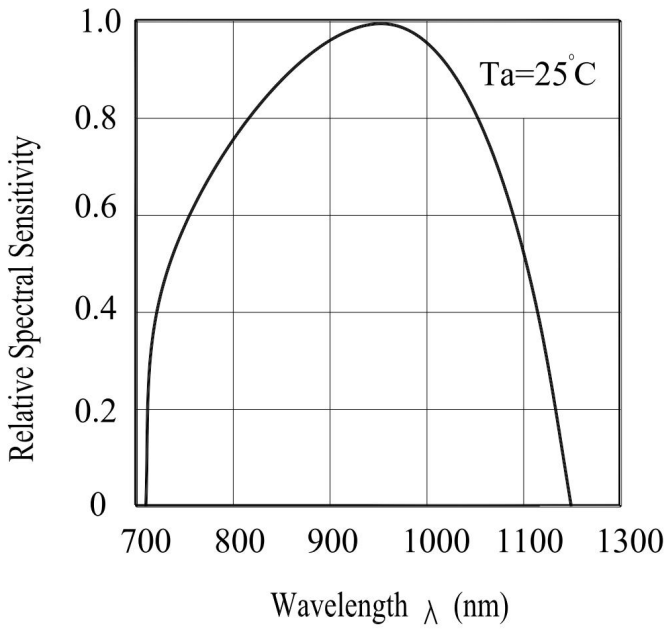


Fig.2 Collector Current vs rradiance

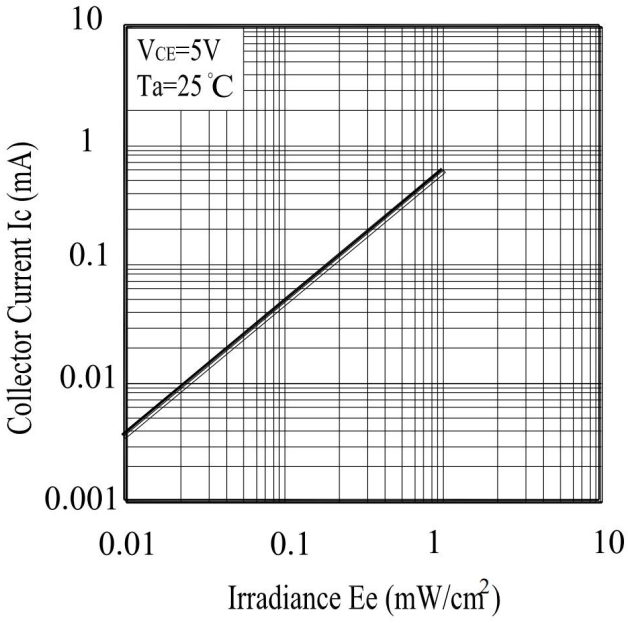
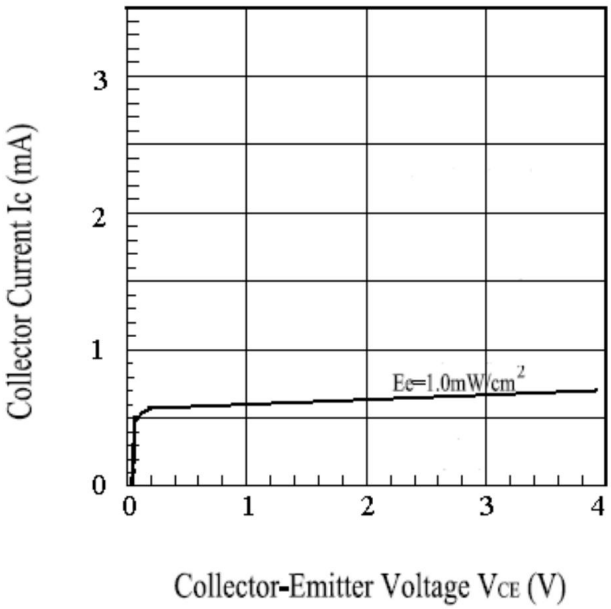


Fig.3 Collector Current vs Collector-Emitter Voltage



Precautions For Use

1. Over-current-proof

   Customer must apply resistors for protection, otherwise slight voltage shift will cause big current change (Burn out will happen).

2. Storage

   2.1 Do not open moisture proof bag before the products are ready to use.

   2.2 Before opening the package, the LEDs should be kept at 10℃~30℃ and 90%RH or less.

   2.3 The LEDs suggested be used within one year.

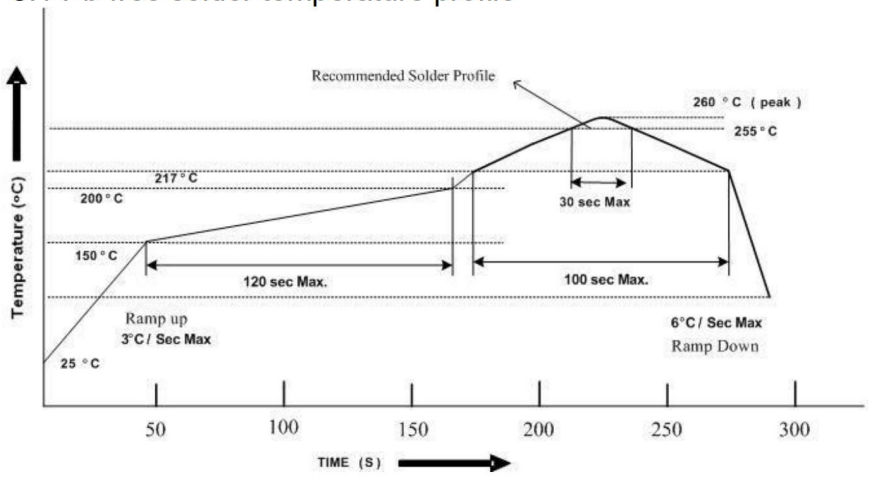
   2.4 After opening the package, the devices must be stored at 10°C~30°C and ≤ 60%RH, and used within 168 hours (floor life). If unused LEDs remain, it should be stored in moisture proof packages.

   2.5 If the moisture absorbent material (desiccant material) has faded or unopened bag has exceeded the shelf life or devices (out of bag) have exceeded the floor life, baking treatment is required.

   2.6 If baking is required, refer to IPC/JEDEC J-STD-033 for bake procedure or recommend the following conditions:
   96 hours at 60°C ± 5°C and < 5 % RH (reeled/tubed/loose units)

3. Soldering Condition

   3.1 Pb-free solder temperature profile



   3.2 Reflow soldering should not be done more than two times.

   3.3 When soldering, do not put stress on the LEDs during heating.

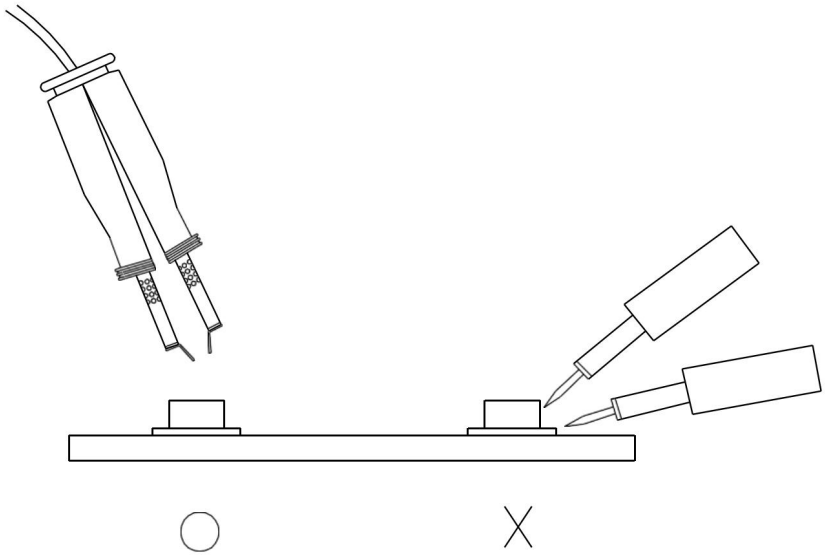
   3.4 After soldering, do not warp the circuit board.

4.Soldering Iron

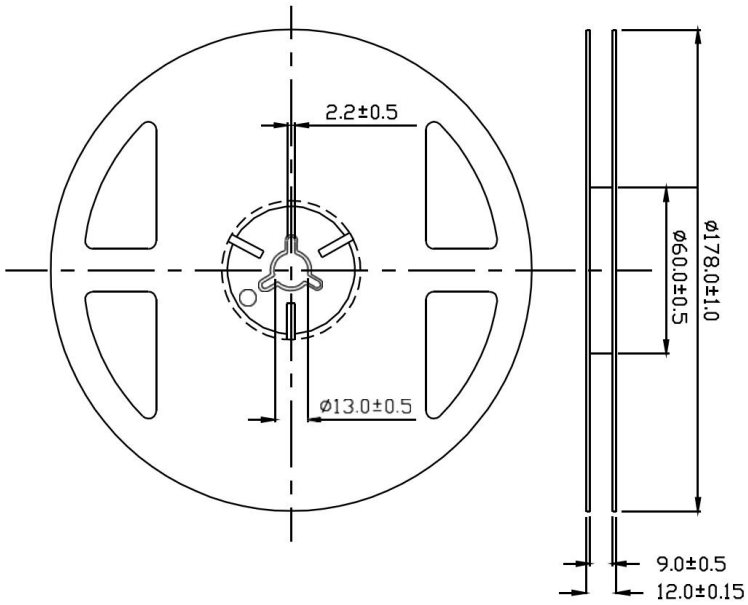
Each terminal is to go to the tip of soldering iron temperature less than 350℃ for 3 seconds within once in less than the soldering iron capacity 25W. Leave two seconds and more intervals, and do soldering of each terminal. Be careful because the damage of the product is often started at the time of the hand solder.

5.Repairing

Repair should not be done after the LEDs have been soldered. When repairing is unavoidable, a double-head soldering iron should be used (as below figure). It should be confirmed beforehand whether the characteristics of the LEDs will or will not be damaged by repairing.

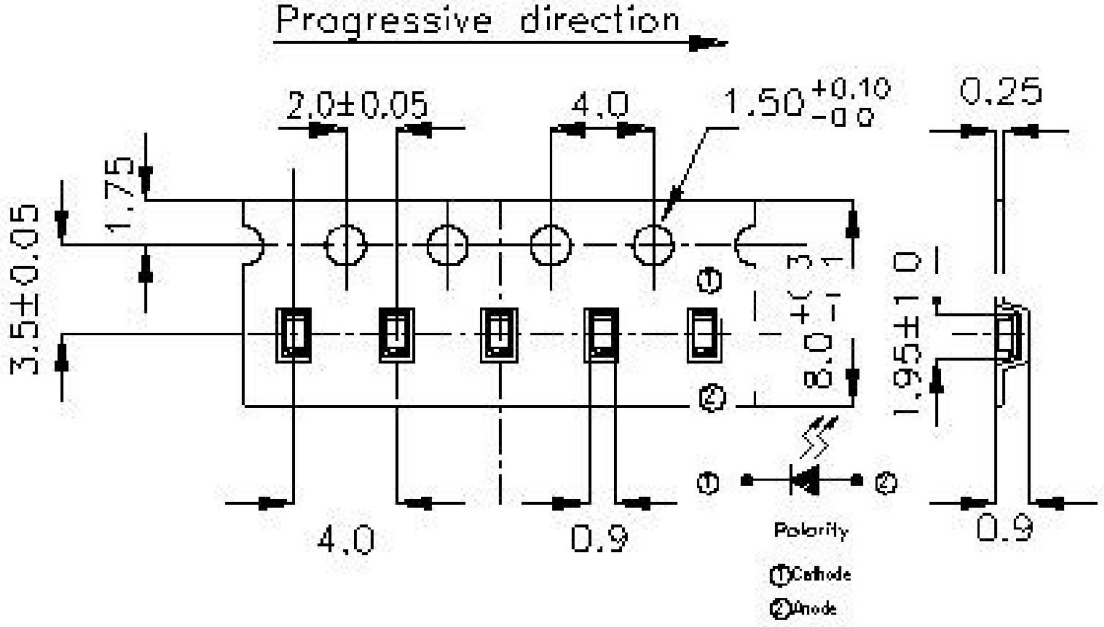


Package Dimensions



Note: The tolerances unless mentioned are ±0.1mm, Unit: mm

Carrier Taping Dimensions: (Quantity: 3000PCS/Reel)



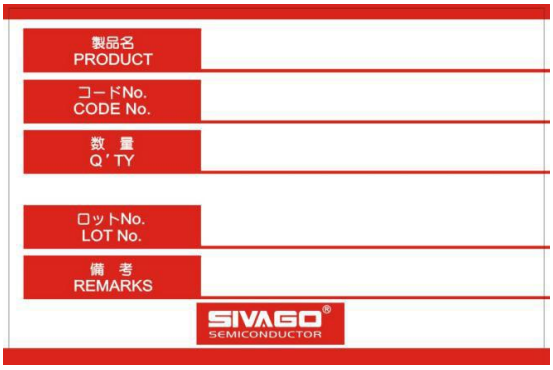
Note: The tolerances unless mentioned are ±0.1mm, Unit: mm

Packing Quantity Specification

1. 3000Pcs/1Reel,10 Reel/1Box

3. 4Boxes/1Carton

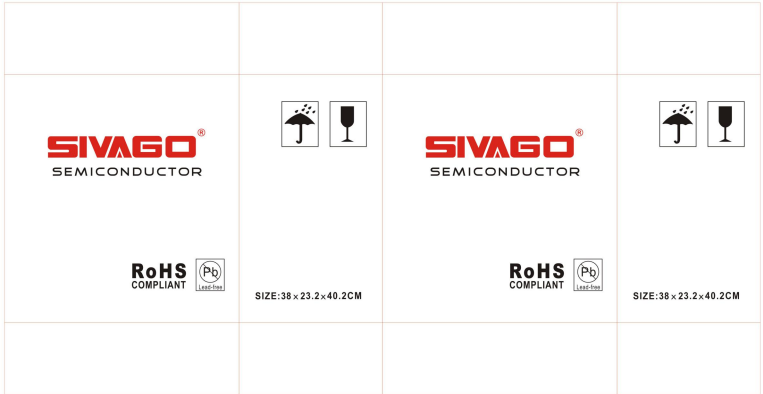
Label Form Specification



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

22x18x19cm

38x23.2x40.2cm



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