ZPT-3528C-18-Z2

Technical Data Sheet

Top Phototransistor

Descriptions

ZPT-3528C-18-Z2 is a high speed silicon NPN epitaxial planar phototransistor in a compact surface-mountable package. It's compatible with automatic placement equipment and can withstand IR reflow, vapor phase reflow , and wave solder processes.
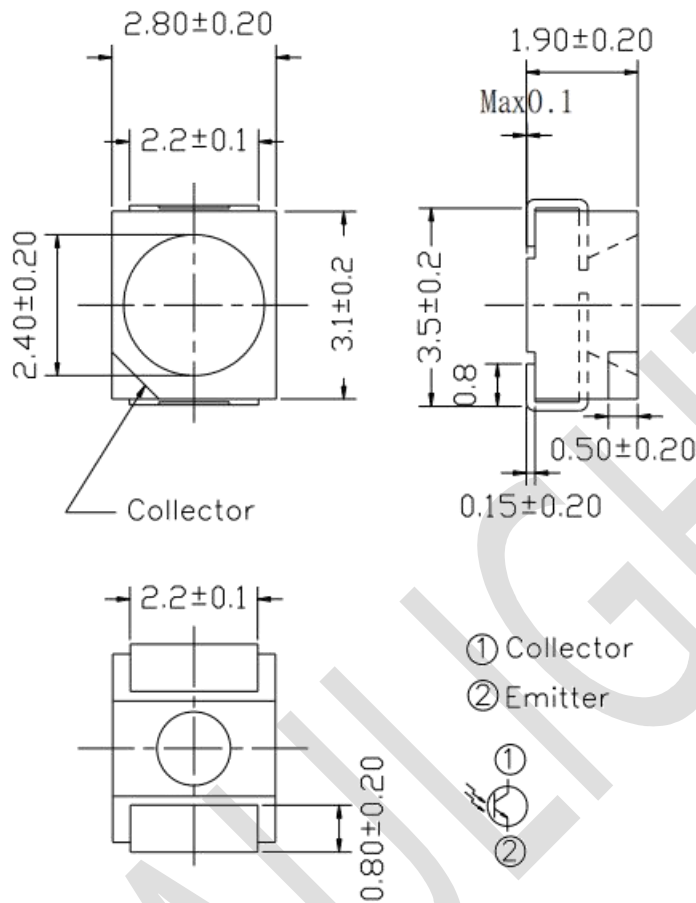
Features

- Fast response time
- High photo sensitivity
- Small junction capacitance
- Compatible with infrared and vapor phase reflow solder process.
- Pb free
- The product itself will remain within RoHS compliant version.

Applications

- Miniature switch
- Counters and sorter
- Position sensor
- Infrared applied system
- Encoder

Package Dimensions

Notes:1.All dimensions are in millimeters
2.Tolerances unless dimensions ±0.1mm

Absolute Maximum Ratings (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	℃
Storage Temperature *1	T_{stg}	-40 ~ +85	℃
Soldering Temperature	T_{sol}	260	℃
Power Dissipation at(or below) 25℃ Free Air Temperature	P_c	75	mW

3.Notes: *1:Soldering time ≦ 5 seconds.

Electro-Optical Characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Rang Of Spectral Bandwidth	$\lambda_{0.5}$	400	---	1100	nm	---
Wavelength Of Peak Sensitivity	λ_P	---	940	---	nm	---
Collector-Emitter Breakdown Voltage	BV_{CEO}	30	---	---	V	$I_C=100\mu$ A $Ee=0mW/cm^2$
Emitter-Collector Breakdown Voltage	BV_{ECO}	5	---	---	V	$I_E=100\mu$ A $Ee=0mW/cm^2$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	---	---	0.4	V	$I_C=1mA$ $Ee=1mW/cm^2$
Collector Dark Current	I_{CEO}	---	---	500	nA	$V_{CE}=20V$ $Ee=0mW/cm^2$
On State Collector Current	$I_{C(ON)}$	2.0	2.3	10.0	mA	$V_{CE}=5V$ $Ee=1mW/cm^2$
View Angle	$2\theta_{1/2}$	--	120	--	deg	$V_R = 5V$
Rise Time	t_r	---	15	---	μ S	$V_{CE}=5V$ $I_C=1mA$ $R_L=1000\Omega$
Fall Time	t_f	---	15	---		

Typical Electrical/Optical/Characteristics Curves

Collector Power Dissipation vs. Ambient Temperature	Spectral Sensitivity

Collector Current vs. Irradiance	Collector Current vs. Collector-Emitter Voltage

Relative Light Current vs. Angular Displacement
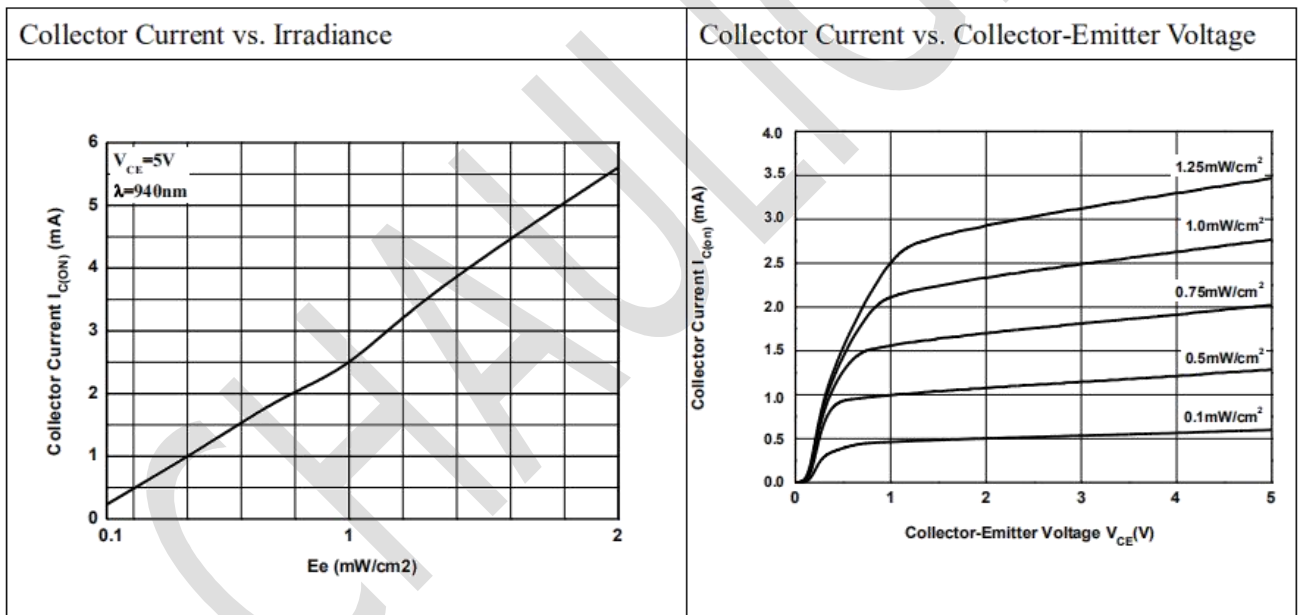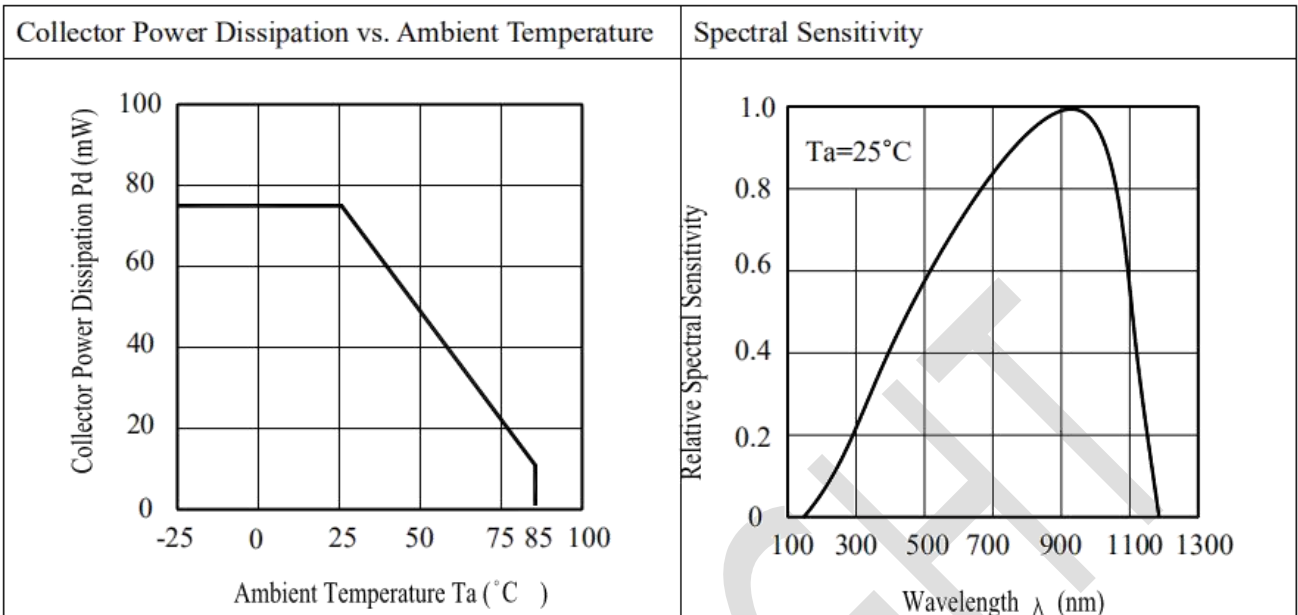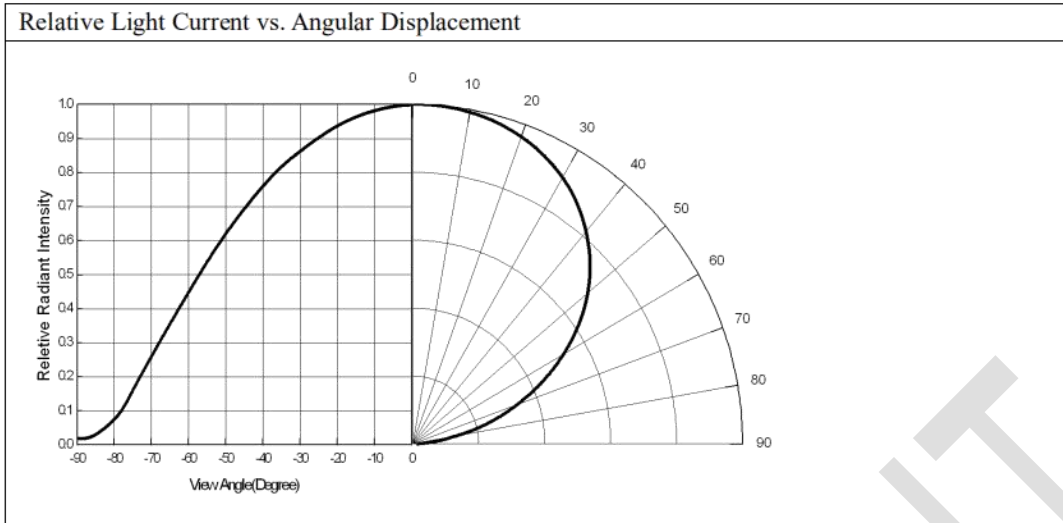
Precautions For Use

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 Phototransistor should be kept at 30℃ or less and 90%RH or less.

2.3 The Phototransistor should be used within a year.

2.4 After opening the package, the Phototransistor should be kept at 30℃ or less and 60%RH or less.

2.5 The Phototransistor should be used within 72 hours (3 days) after opening the package

2.6 If the moisture absorbent material (silica gel) has faded away or the Phototransistor have exceeded the storage time, baking treatment should be performed using the following conditions.Baking treatment : 60±5℃ for Min. Min. 24 hours.

3. Soldering Condition

3.1 Pb-free solder temperature profile

GuangDong Chau Light Infrared Semiconductor Co., Ltd.   www.zgy-led.com
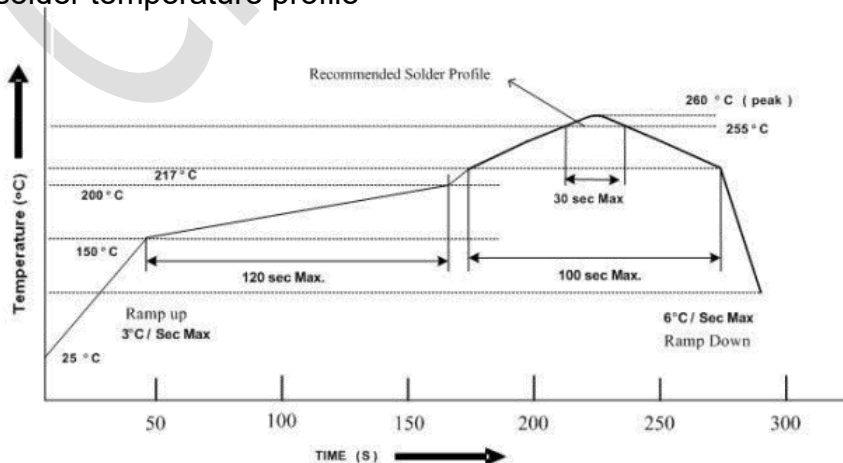
3.2 Reflow soldering should not be done more than two times.

3.3 When soldering, do not put stress on the Phototransistor 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 Phototransistor 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 Phototransistor will or will not be damaged by repairing.
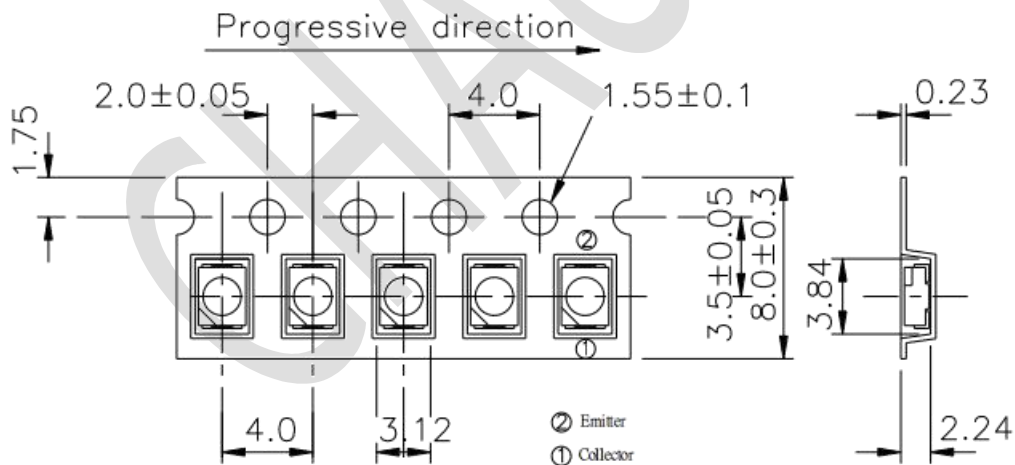
Package Dimensions

2.2±0.5

Ø178.0±1.0

Ø60.0±0.5

Ø13.0±0.5

9.0±0.5

12.0±0.15
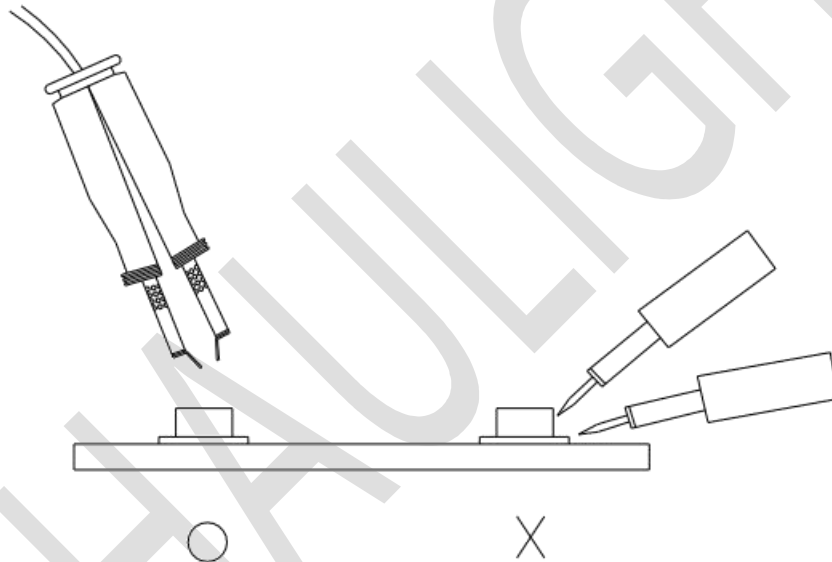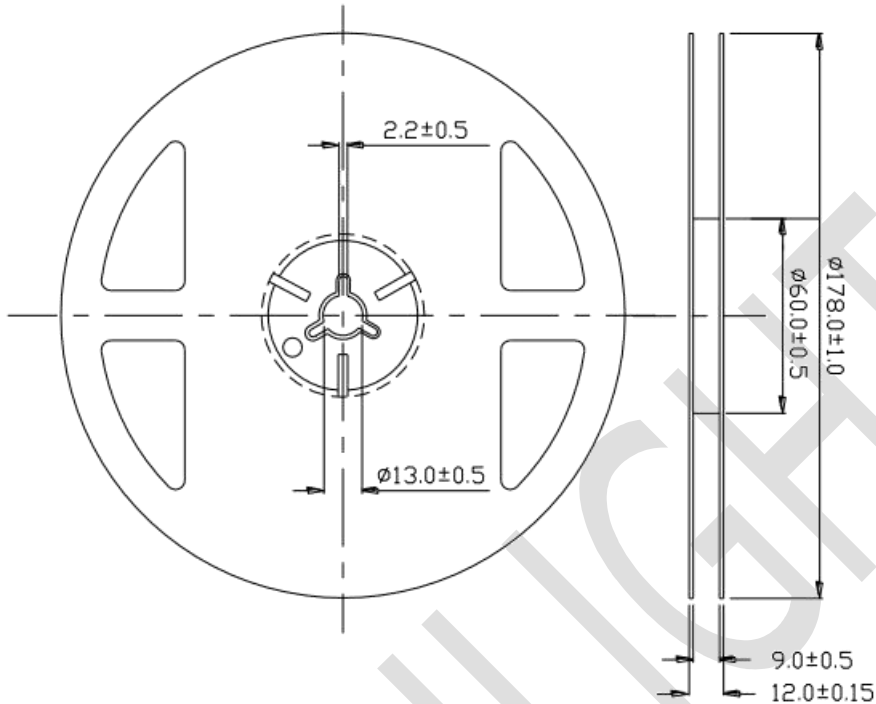
Note: The tolerances unless mentioned is ±0.1mm ,Unit = mm

Carrier Tape Dimensions:(Quantity: 2000pcs/reel)

Progressive direction

2.0±0.05

4.0

1.55±0.1

0.23

1.75

3.5±0.05

8.0±0.3

3.84

4.0

3.12

② Emitter

① Collector

2.24
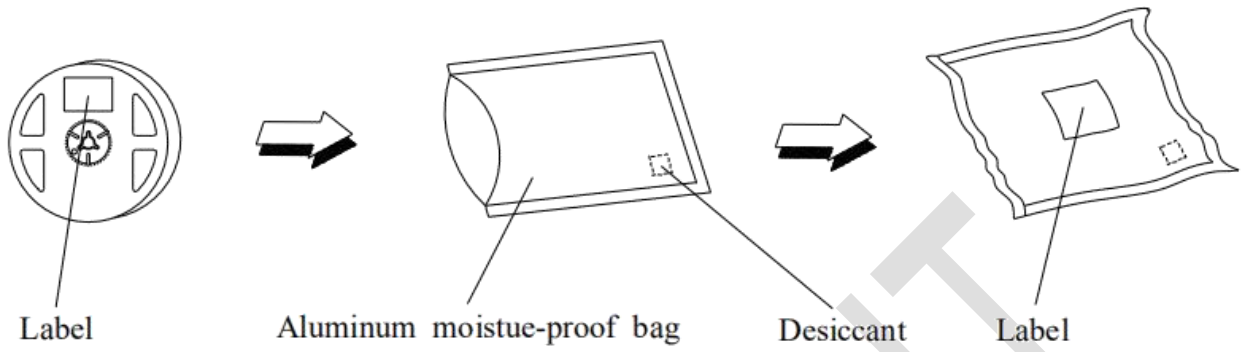
TOLERANCES UNLESS DIMENSION±0.1
ANGLE±0.5
UNIT:mm

Note: The tolerances unless mentioned is ±0.1mm ,Unit = mm

Packing Procedure

Label   Aluminum moistue-proof bag   Desiccant   Label