EVERLIGHT
AMERICAS

DATASHEET

1.9mm Round Subminiature “Gull Wing” Lead Phototransistor
EAPSG2520A1

Features

- Fast response time
- High photo sensitivity
- Small junction capacitance
- Compatible with infrared and vapor phase reflow solder process.
- Pb free
- RoHS Compliance
- 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)

Description

- EAPSG2025A0 is a phototransistor in miniature SMD package which is molded in water clear plastic with spherical top view lens. The device is spectrally matched to infrared emitting diode.

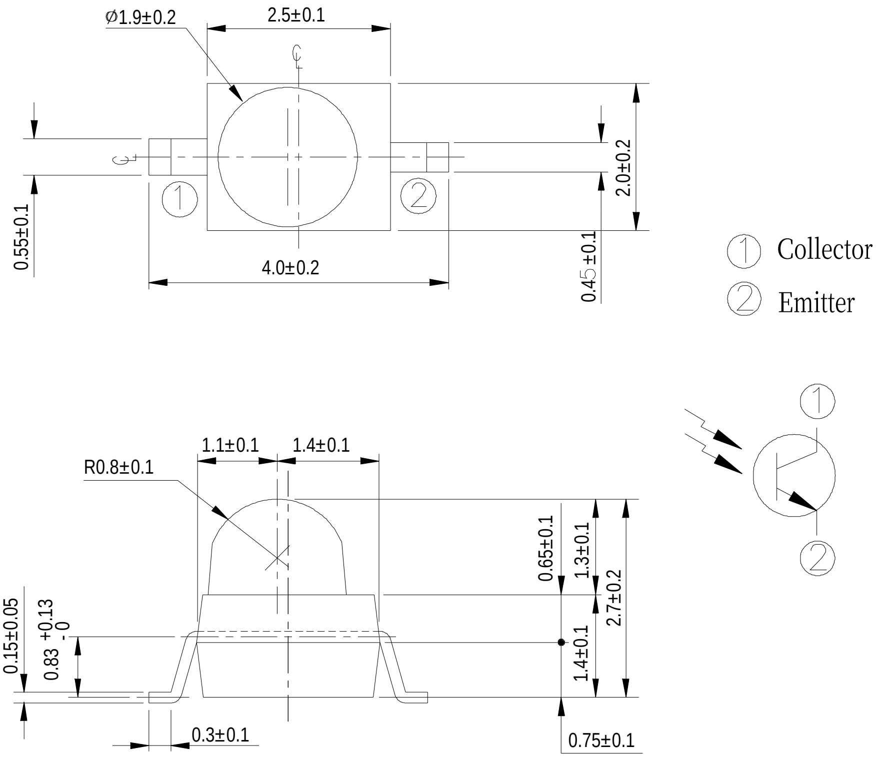
Applications

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

Device Selection Guide

Device No.	Chip Material	Lens Color
EAPSG2520A1	Silicon	Black

Package Dimensions



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

Absolute Maximum Ratings (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 ~ +100	℃
Soldering Temperature *1	T_{sol}	260	℃
Power Dissipation at (or below) 25℃ Free Air Temperature	P_c	75	mW

Notes: *1: Soldering time≦5 seconds.

Electro-Optical Characteristics (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=100μA Ee=0mW/cm^2	30	---	---	V
Emitter Collector Breakdown Voltage	BV_{ECO}	I_E=100μA Ee=0mW/cm^2	5	---	---	V
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	I_C=2mA Ee=1m W/cm^2	---	---	0.4	V
Collector Dark Current	I_{CEO}	V_{CE}=20V Ee=0mW/cm^2	---	---	100	nA
On State Collector Current	$I_{C(ON)}$	V_{CE}=5V Ee=1mW /cm^2	1.0	3.0	---	mA

Typical Electrical/Optical/Characteristics Curves

Fig.1Spectral Sensitivity

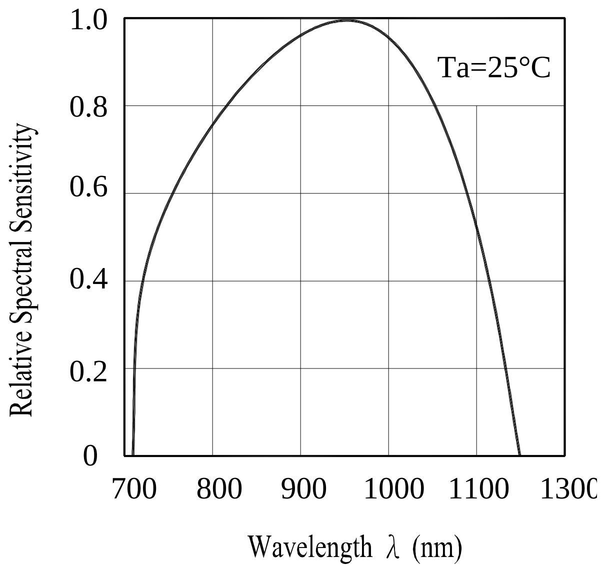


Fig.2Collector Current vs. Irradiance

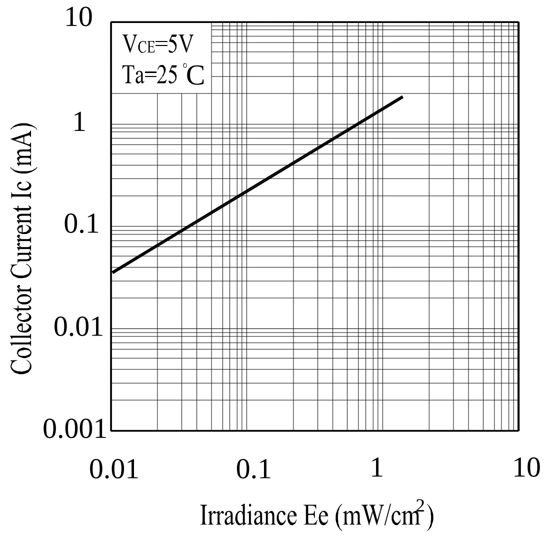
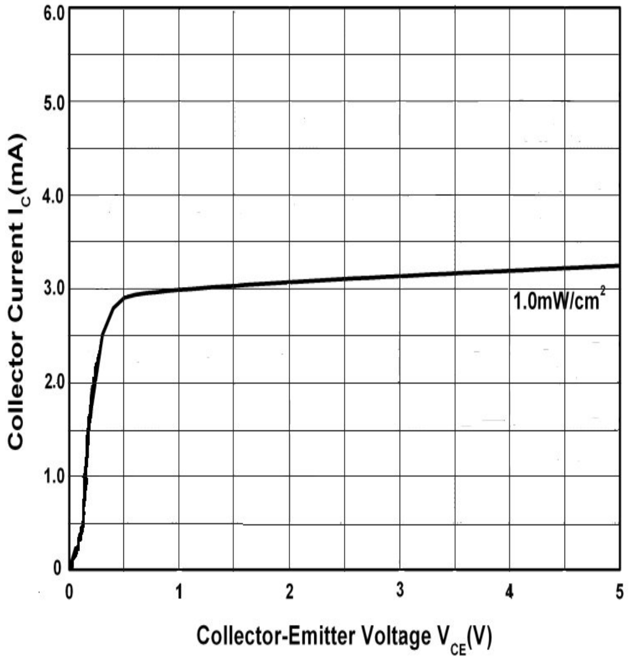


Fig.3 Collector Current vs. Collector Emitter Voltage



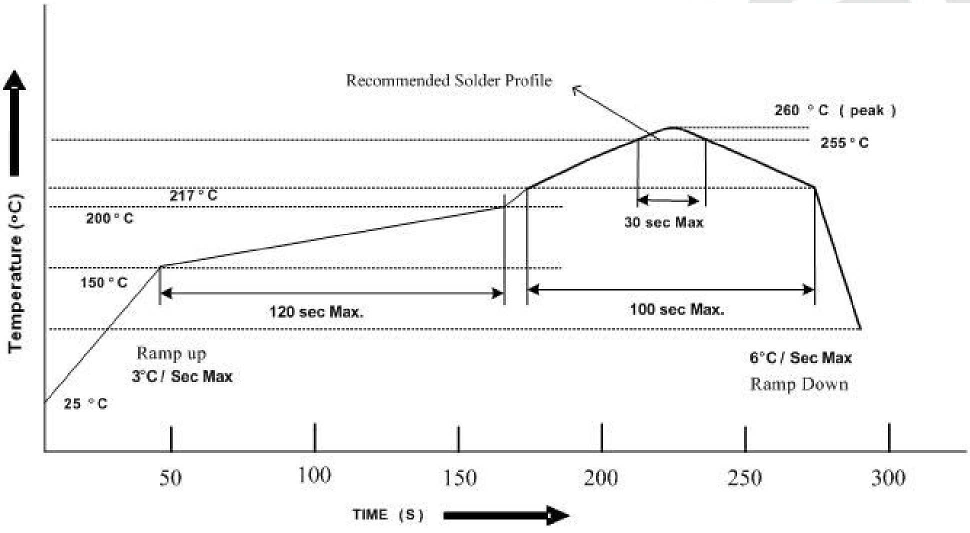
Precautions For Use

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 Phototransistor should be kept at 10°C~30°C and 90%RH or less.
   2.3 The Phototransistor 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 Phototransistor 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).

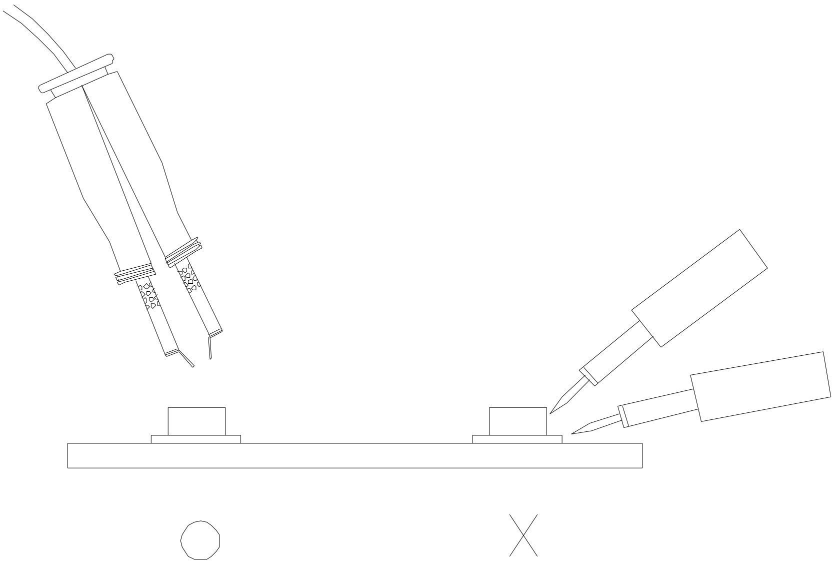
3. Soldering Condition
   3.1 Pb-free solder temperature profile



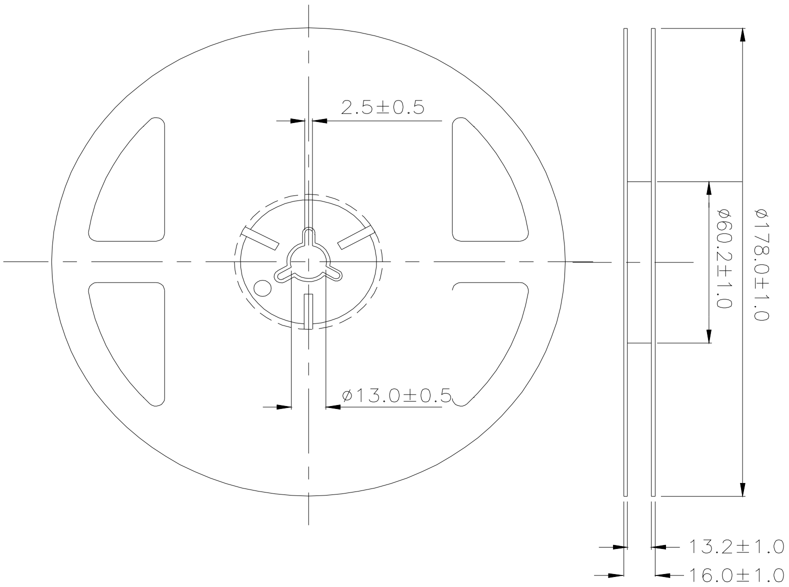
   3.2 Reflow soldering should not be done more than two times.
   3.3 When soldering, do not put stress on the Phototransistor during heating.
   3.4 After soldering, do not warp the circuit board.

4. Soldering Iron
   Each terminal is to go to the tip of soldering iron temperature less than 350°C 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.

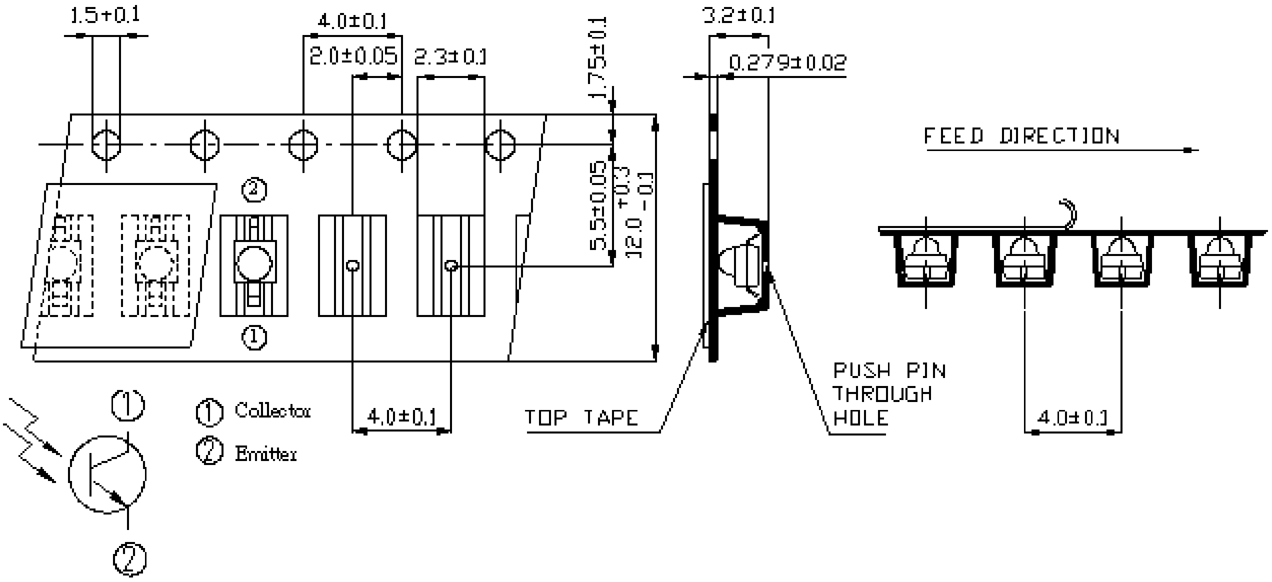


Package Dimensions



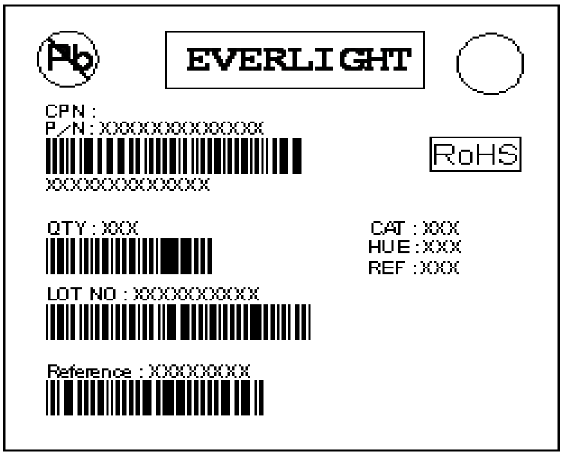
Note: The tolerances unless mentioned are ±0.1 mm, unit=mm.

Carrier Taping Dimensions: (Quantity: 1000PCS/Reel)



Note: The tolerances unless mentioned are ±0.1 mm, unit=mm

Label Form Specification



CPN: Customer’s Production Number
P/N : Production Number
QTY: Packing Quantity
CAT: Ranks
HUE: Peak Wavelength
REF: Reference
LOT No: Lot Number
MADE IN TAIWAN: Production Place

Notes

1. Above specification may be changed without notice. Everlight Americas will reserve authority on material change for above specification.
2. When using this product, please observe the absolute maximum ratings and the instructions for using outlined in these specification sheets. Everlight Americas assumes no responsibility for any damage resulting from use of the product which does not comply with the absolute maximum ratings and the instructions included in these specification sheets.
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