DATASHEET

Technical Data Sheet
1.9mm Round Subminiature“ Z-Bend” Lead Phototransistor
EAPSZ2520A0

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

- EAPSZ2520A0 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
EAPSZ2520A0	Silicon	Water clear

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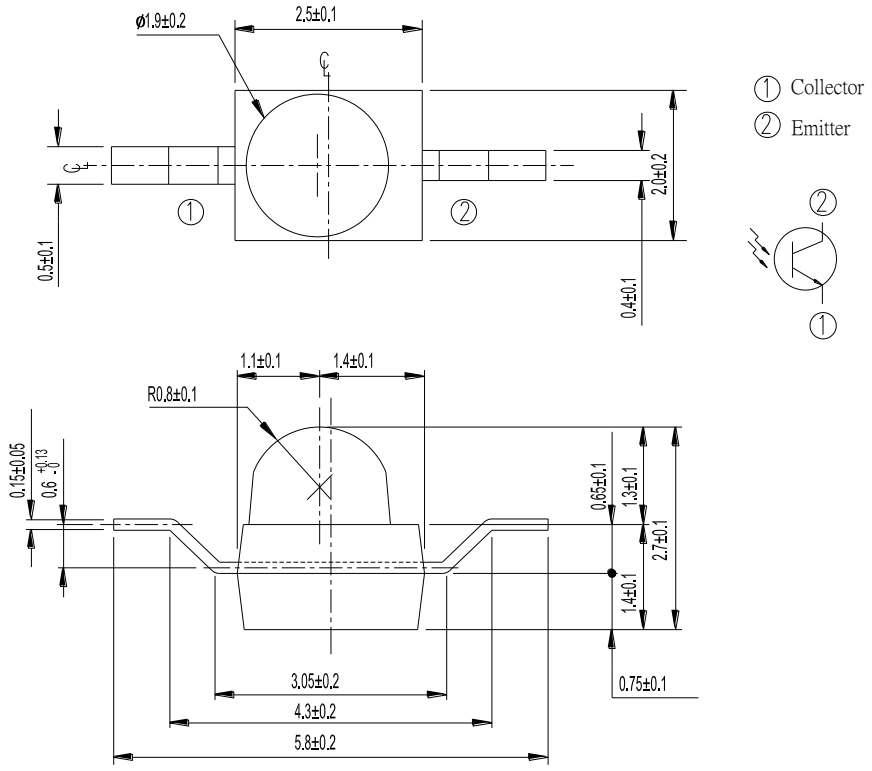
Issue No: XXXXXXXXX Rev.0.1

Package Dimensions



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

Absolute Maximum Ratings (Ta=25℃)

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	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.

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Electro-Optical Characteristics (Ta=25℃)

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=100μ A Ee=0mW/cm^2
Emitter-Collector Breakdown Voltage	BV_{ECO}	5	---	---	V	I_E=100μ A Ee=0mW/cm^2
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	---	---	0.4	V	I_C=2mA Ee=1m W/cm^2
Collector Dark Current	I_{CEO}	---	---	100	nA	V_{CE}=20V Ee=0mW/cm^2
On State Collector Current	$I_{C(ON)}$	1.0	1.5	---	mA	V_{CE}=5V Ee=1mW /cm^2
Rise Time	t_r	---	15	---	μ S	V_{CE}=5V I_C=1mA R_L=1000Ω
Fall Time	t_f	---	15	---		

Intensity Specifications for Bin Grading

Rank	Test Condition	Min	Max	Unit
Bin1	Ee=1mW/cm^2 V_{CE}=5V	1.0	2.0	mA
Bin2		1.5	3.0	
Bin3		2.0	4.0	
Bin4		2.5	5.0	
Bin5		3.0	6.0	

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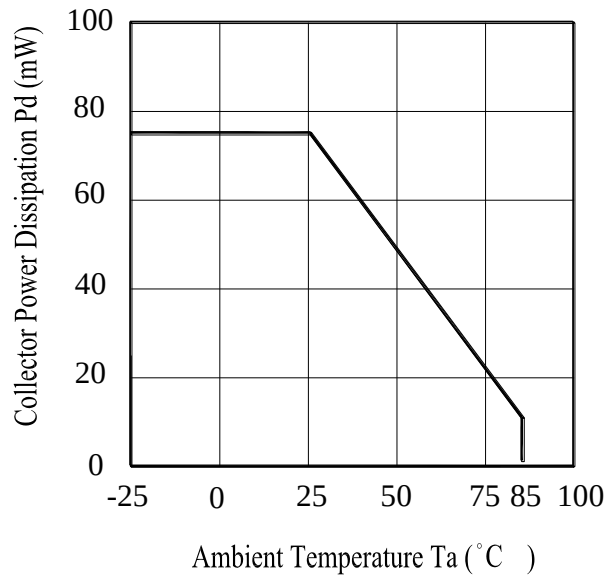
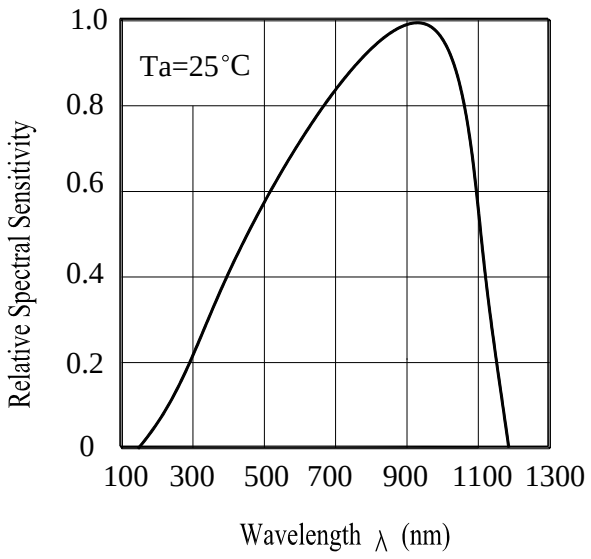
Typical Electrical/Optical/Characteristics Curves

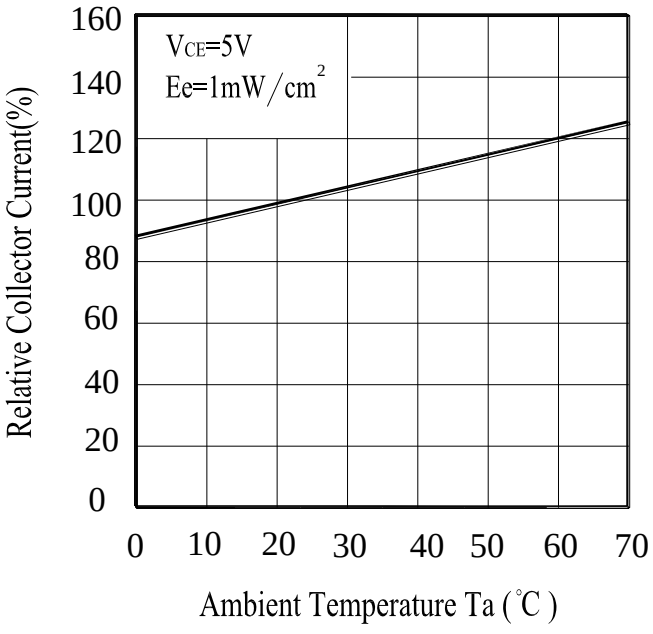
Collector Power Dissipation vs. Ambient Temperature



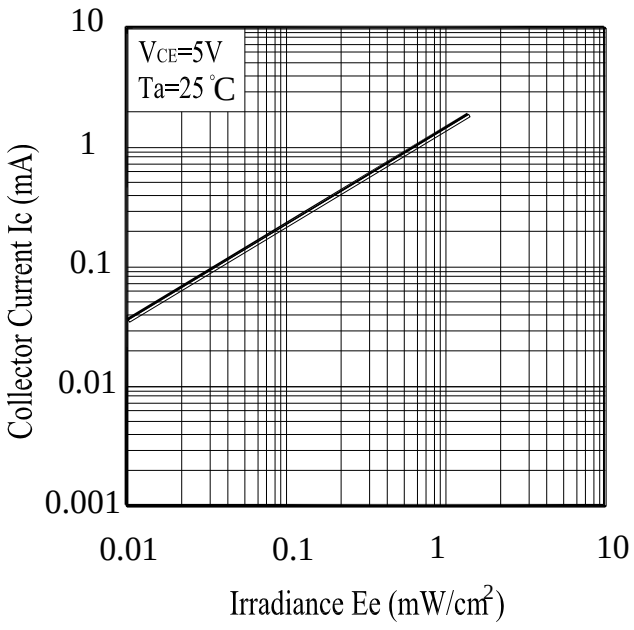
Spectral Sensitivity



Relative Collector Current vs. Ambient Temperature



Collector Current vs. Irradiance



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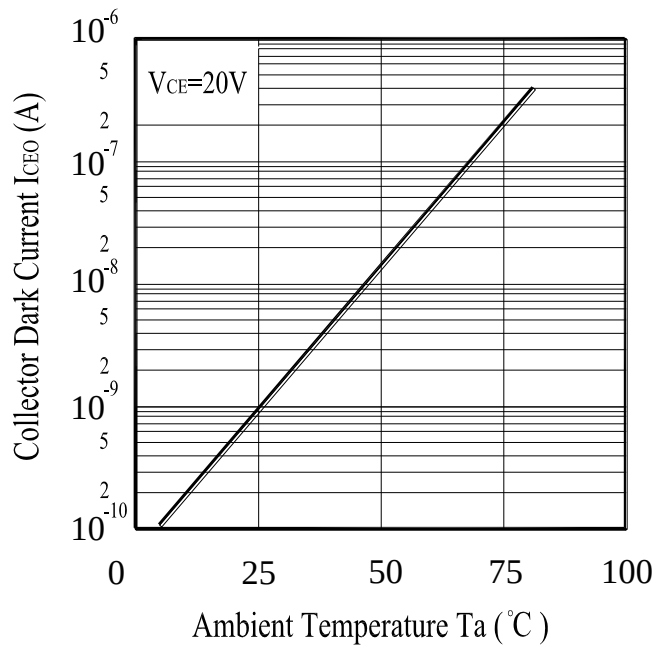
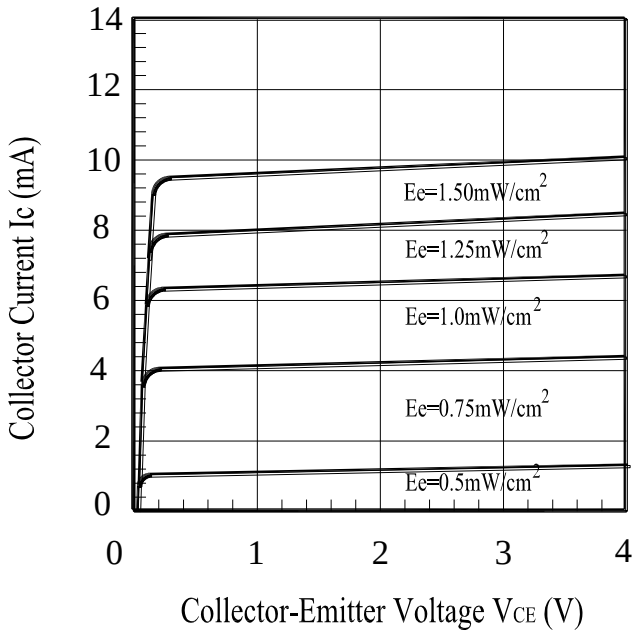
Collector Dark Current vs. Ambient Temperature	Collector Current vs. Collector-Emitter Voltage
	

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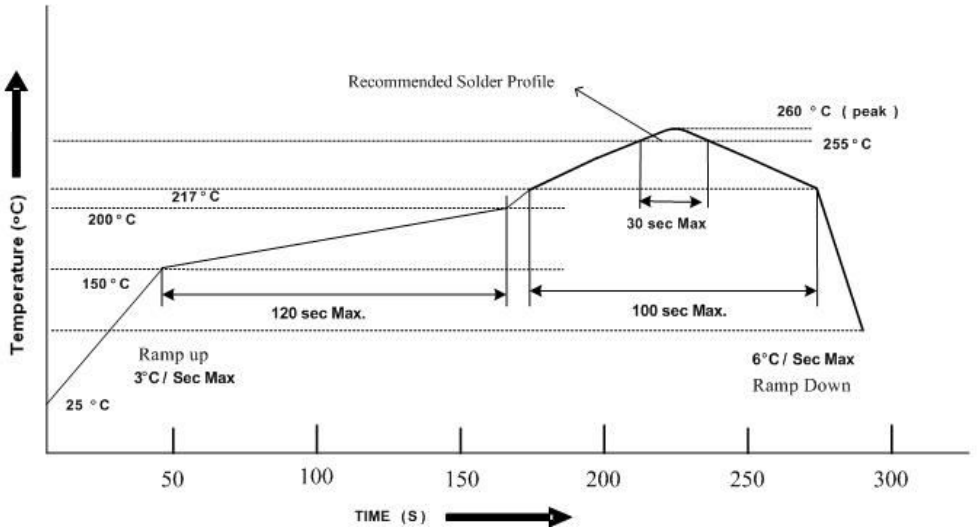
● Precautions For Use

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 30℃ or less and 90%RH or less.
   2.3 The LEDs should be used within a year.
   2.4 After opening the package, the LEDs should be kept at 30℃ or less and 60%RH or less.
   2.5 The LEDs should be used within 168 hours (7 days) after opening the package.
   2.6 If the moisture absorbent material (silica gel) has faded away or the LEDs have exceeded the storage time, baking treatment should be performed using the following conditions.
   Baking treatment : 60±5℃ for Min 24 hours.

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.

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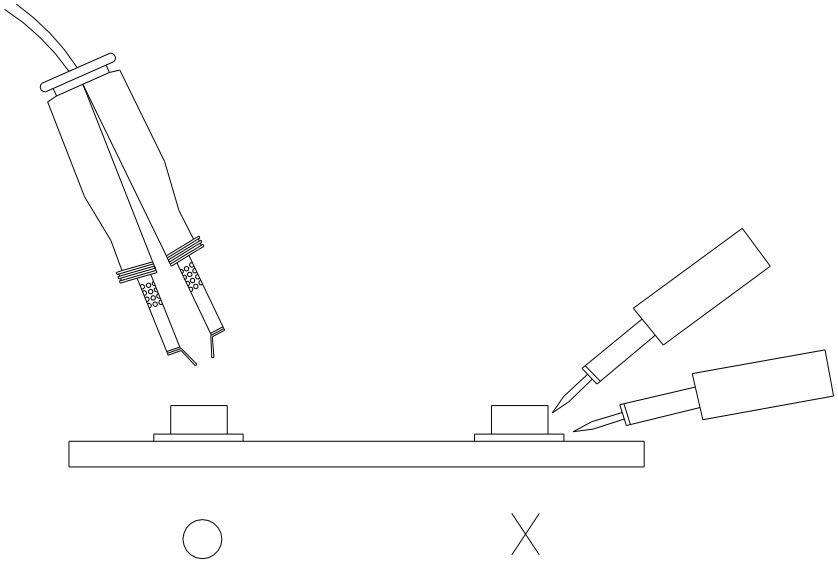
4. Soldering Iron

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.



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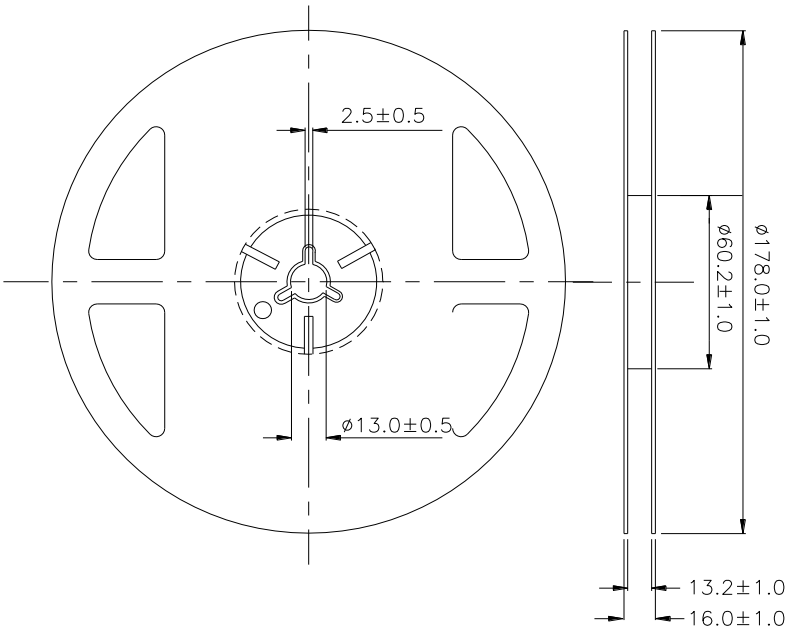
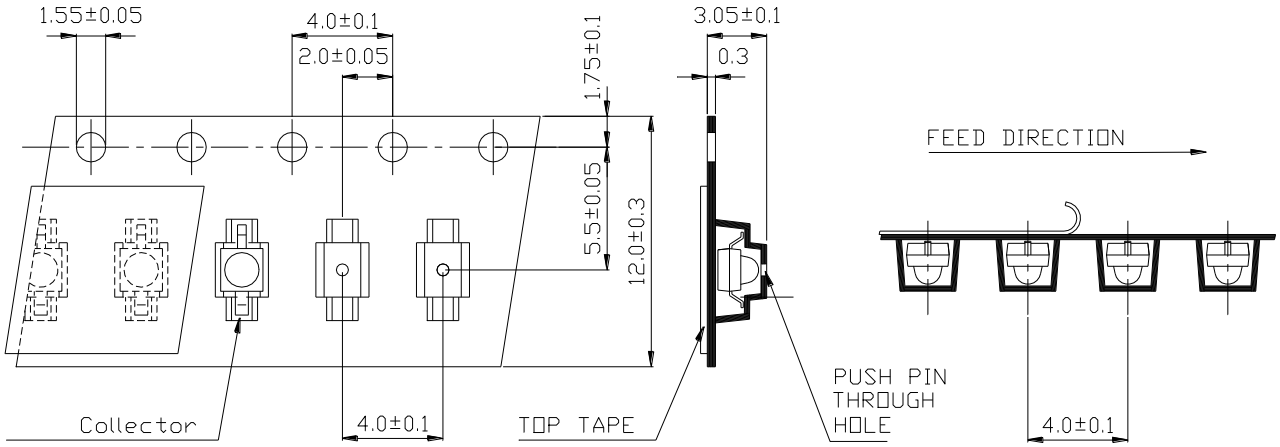
Package Dimensions



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

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



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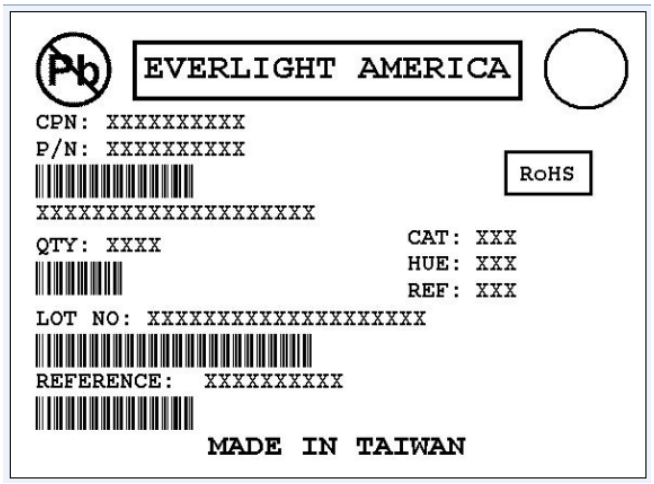
Label Form Specification



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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