EVERLIGHT
AMERICAS

DATASHEET

Technical Data Sheet
Top Phototransistor
EAPPL3527A2

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.
- Compliance with EU REACH.
- Compliance Halogen Free .(Br <900 ppm ,Cl <900 ppm , Br+Cl < 1500 ppm)

Description

- EAPPL3527A2 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.

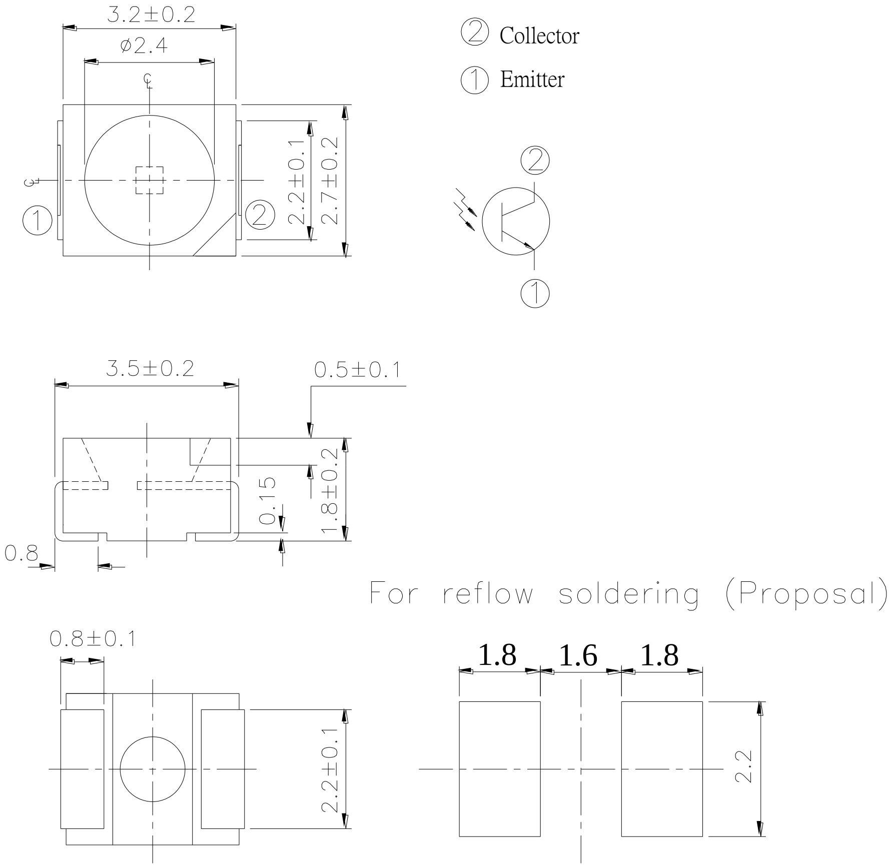
Applications

- Infrared applied system

Device Selection Guide

Device No.	Chip Material	Lens Color
EAPPL3527A2	Silicon	Black

Package Dimensions



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}	-40~ +85	℃
Storage Temperature	T_{stg}	-40 ~ +100	℃
Soldering Temperature	T_{sol}	260	℃
Power Dissipation at(or below) 25℃Free Air Temperature	P_c	75	mW

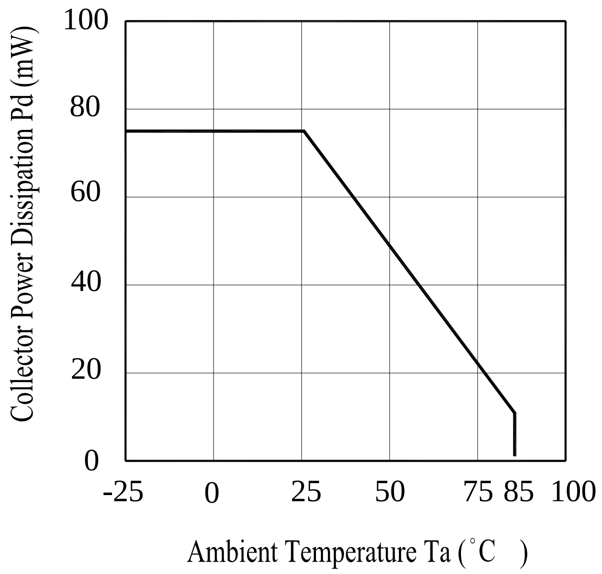
Notes: *1:Soldering time≦5 seconds.

Electro-Optical Characteristics (Ta=25℃)

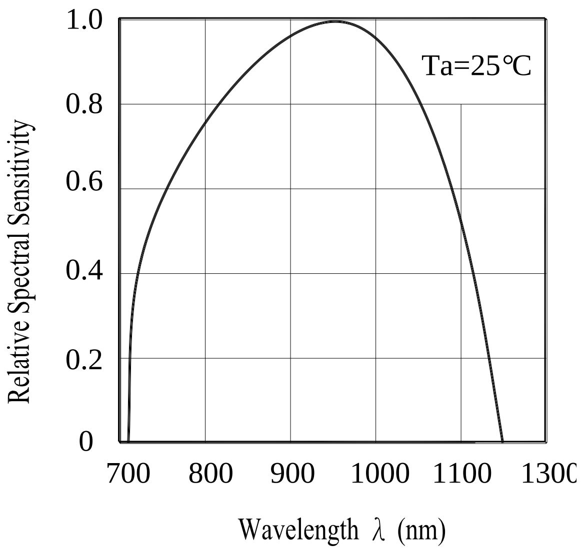
Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Rang Of Spectral Bandwidth	$\lambda_{0.5}$	700	---	1100	nm	---
Wavelength Of Peak Sensitivity	λ_P	---	940	---	nm	---
Collector-Emitter Breakdown Voltage	BV_{CEO}	30	---	---	V	I_C=100μA Ee=0mW/cm^2
Emitter-Collector Breakdown Voltage	BV_{ECO}	5	---	---	V	I_E=100μA 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}	---	---	100	nA	V_{CE}=20V Ee=0mW/cm^2
On State Collector Current	$I_{C(ON)}$	0.3	0.6	---	mA	V_{CE}=5V Ee=1mW /cm^2
Rise Time	t_r	---	15	---	μS	V_{CE}=5V I_C=1mA R_L=1000Ω
Fall Time	t_f	---	15	---		

Typical Electrical/Optical/Characteristics Curves

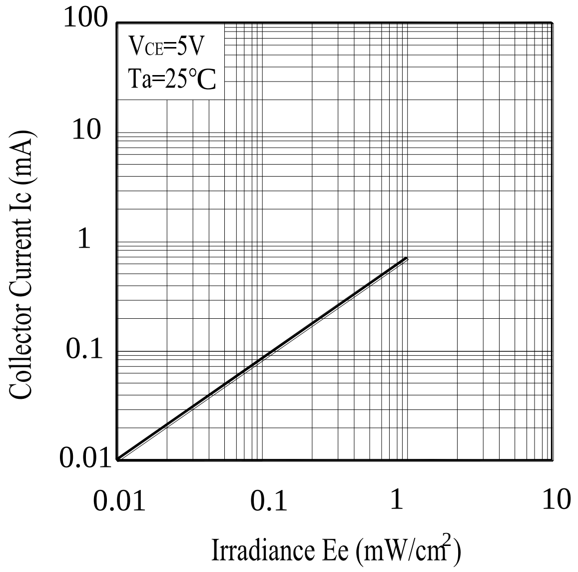
Collector Power Dissipation vs. Ambient Temperature



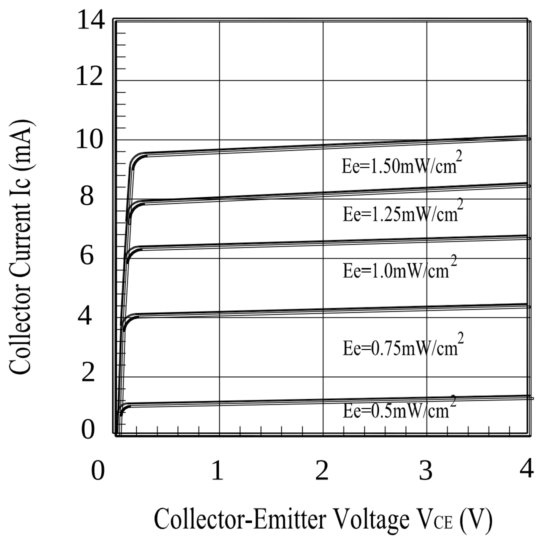
Spectral Sensitivity



Collector Current vs. Irradiance



Collector Current vs. Collector-Emitter Voltage



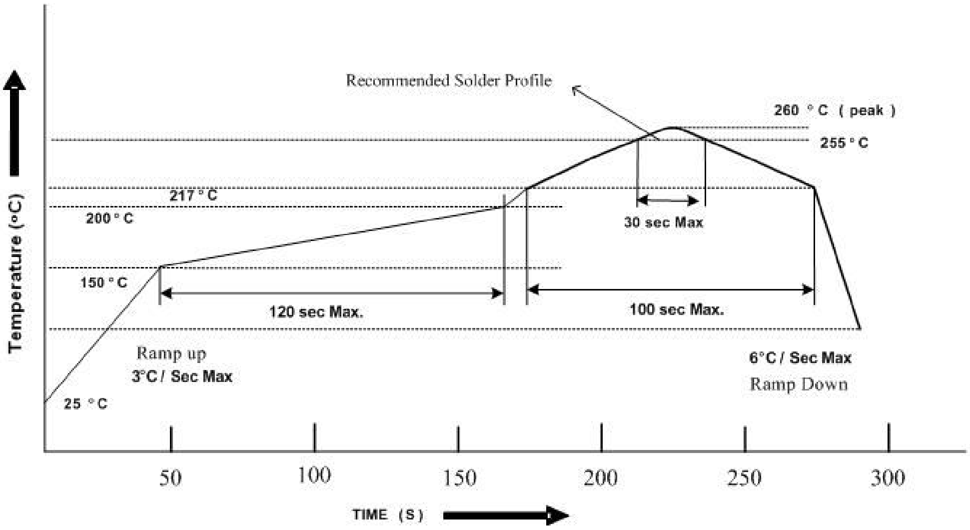
Precautions For Use

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 70%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 24 hours.

3. Soldering Condition
   3.1 Pb-free solder temperature profile



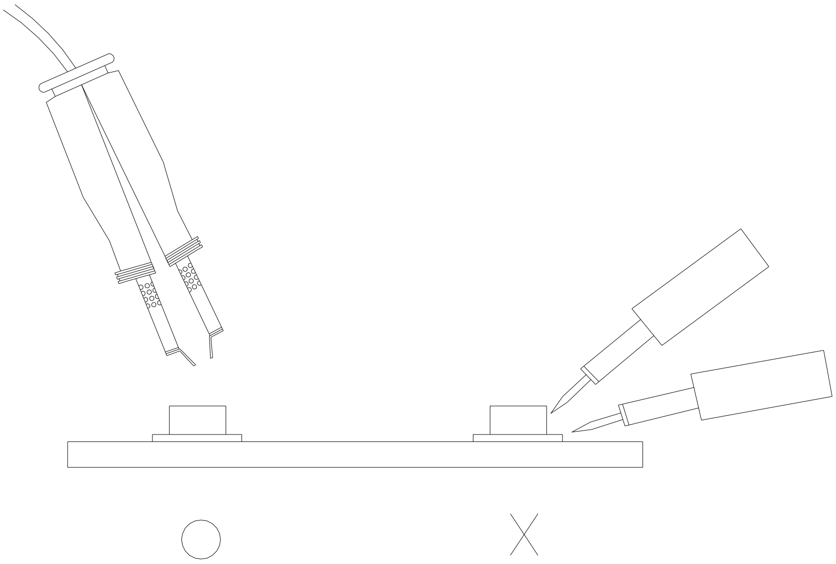
   3.2 Reflow soldering should not be done more than two times.
   3.3 When soldering, do not put stress on the Phototransistor during heating.
   3.4 After soldering, do not warp the circuit board.

4. Soldering Iron

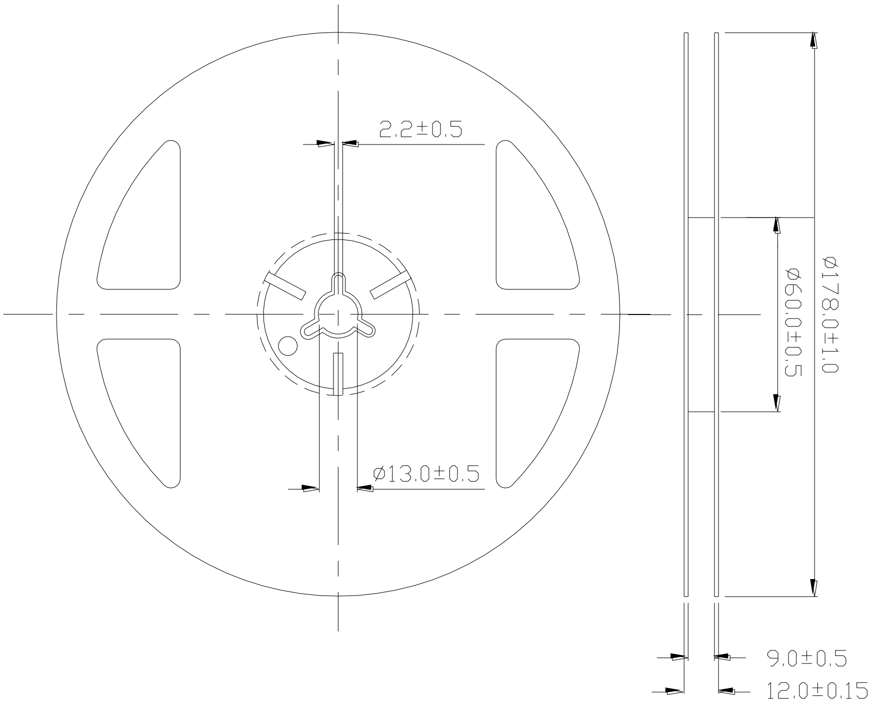
Each terminal is to go to the tip of soldering iron temperature less than 350℃ for 3 seconds within once in less than the soldering iron capacity 25W. Leave two seconds and more intervals, and do soldering of each terminal. Be careful because the damage of the product is often started at the time of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

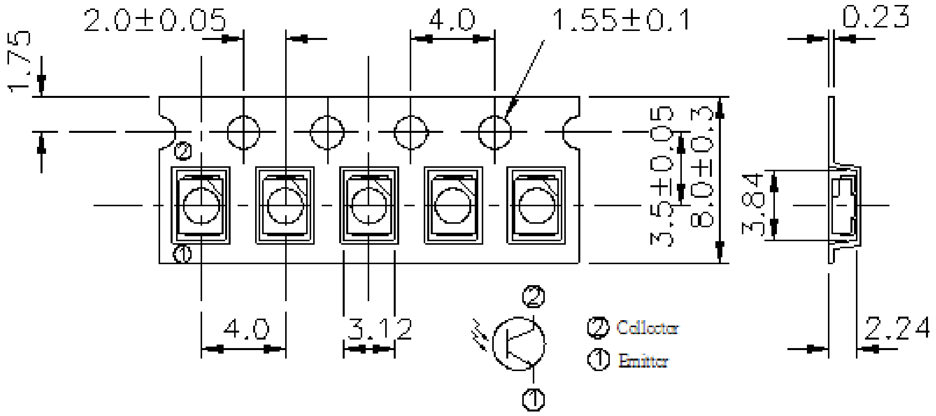


Package Dimensions



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

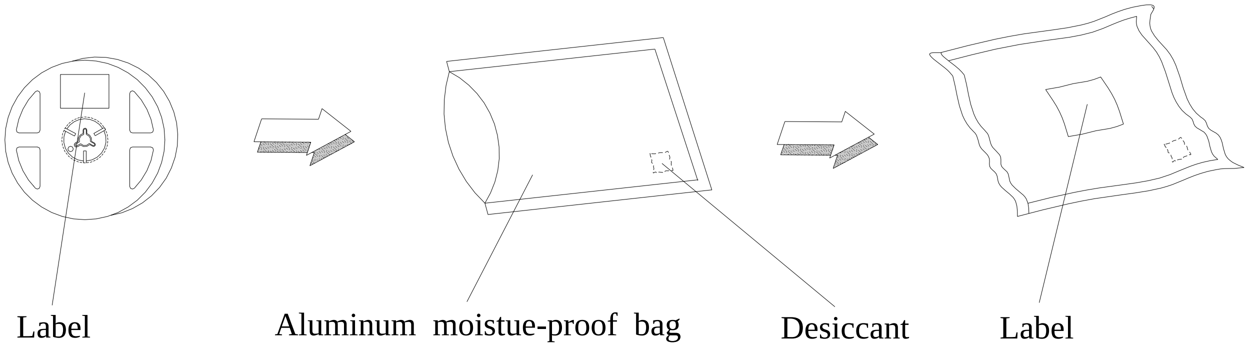
Carrier Tape Dimensions:(Quantity: 2000pcs/reel)



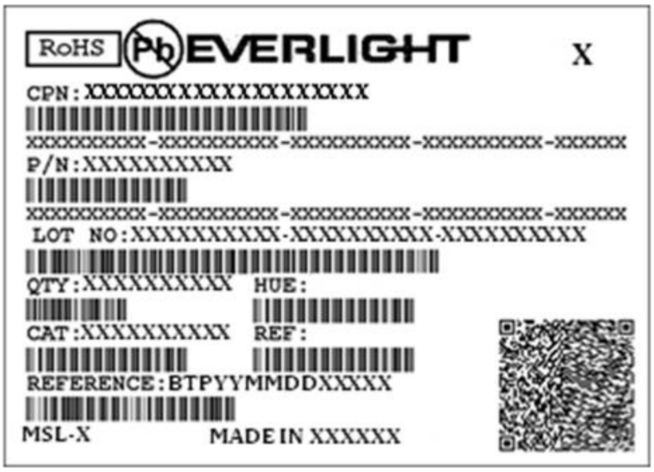
TOLERANCES UNLESS DIMENSION±0.1
ANGLE±0.5
UNIT:mm

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

Packing Procedure



Label Form Specification



RoHS Pb EVERLIGHT X
CPN: XXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXX-XXXXXXXXXX-XXXXXXXXXX-XXXXXXXXXX-XXXXXX
P/N: XXXXXXXXXX
XXXXXXXXXX-XXXXXXXXXX-XXXXXXXXXX-XXXXXXXXXX-XXXXXX
LOT NO: XXXXXXXXXX-XXXXXXXXXX-XXXXXXXXXX
QTY: XXXXXXXXXX HUE:
CAT: XXXXXXXXXX REF:
REFERENCE: BTPYYMMDDXXXXX
MSL-X MADE IN XXXXXX

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

DISCLAIMER

1. EVERLIGHT reserves the right(s) on the adjustment of product material mix for the specification.
2. The product meets EVERLIGHT published specification for a period of twelve (12) months from date of shipment.
3. The graphs shown in this datasheet are representing typical data only and do not show guaranteed values.
4. When using this product, please observe the absolute maximum ratings and the instructions for using outlined in these specification sheets. EVERLIGHT assumes no responsibility for any damage resulting from the 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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