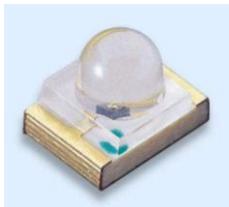


DATASHEET

1.8mm Round Subminiature Infrared LED EAIST3224A0



Features

- Compatible with infrared and vapor phase reflow solder process.
- Low forward voltage
- Good spectral matching to Si photodetector
- Pb free
- The product itself will remain within RoHS compliant version.

Descriptions

- EAIST3224A0 is an infrared emitting diode in miniature SMD package which is molded in a water clear plastic with spherical top view lens.
- The device is spectrally matched with silicon photodiode and phototransistor.

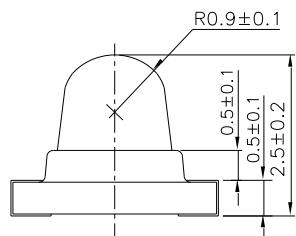
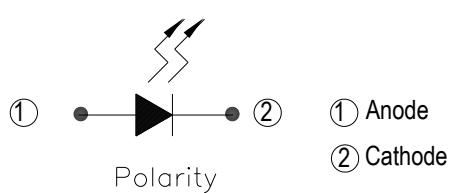
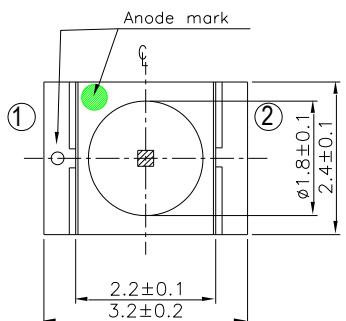
Applications

- PCB mounted infrared sensor
- Infrared emitting for miniature light barrier
- Floppy disk drive
- Optoelectronic switch
- Smoke detector

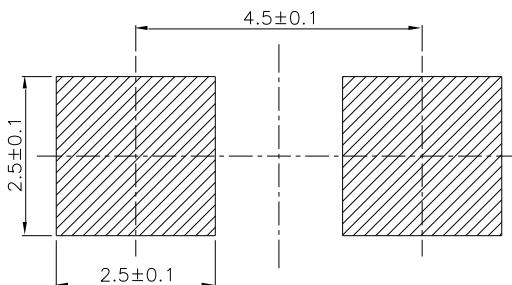
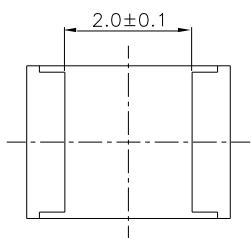
Device Selection Guide

Part Category	Chip Material	Lens Color
EAIST3224A0	GaAlAs	Water clear

Package Dimensions



For reflow soldering (propose)



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

Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Rating	Unit
Continuous Forward Current	I_F	100	mA
Peak Forward Current *1	I_{FP}	1.0	A
Reverse Voltage	V_R	5	V
Operating Temperature	T_{opr}	-40 ~ +85	°C
Storage Temperature	T_{stg}	-40 ~ +100	°C
Soldering Temperature *2	T_{sol}	260	°C
Junction temperature	T_j	115	°C
Thermal resistance junction (ambient mounted on PC-board padsize 16mm ² each)	R_{thJA}	400	°C/W
Thermal resistance junction (Soldering point , mounted on metal block)	R_{thJS}	300	°C/W
Power Dissipation at(or below) 25°C Free Air Temperature	P_d	200	mW

Notes: *1: I_{FP} Conditions--Pulse Width \leq 100 μ s and Duty \leq 1%.

*2:Soldering time \leq 5 seconds.

Electro-Optical Characteristics (Ta=25°C)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Radiant Intensity	I_e	$I_F=20$ mA	7.0	14.0	--	mW/sr
		$I_{FP}=150$ mA , Pulse Width \leq 470 μ s ,Duty \leq 1%	50	100	--	
Peak Wavelength	λ_p	$I_F=20$ mA	--	850	--	nm
Spectral Bandwidth	$\Delta\lambda$	$I_F=20$ mA	--	30	--	nm
Forward Voltage	V_F	$I_F=20$ mA	1.2	1.4	1.7	V
		$I_{FP}=150$ mA , Pulse Width \leq 470 μ s ,Duty \leq 1%	1.4	1.75	2.0	
Reverse Current	I_R	$V_R=5$ V	--	--	10	uA
View Angle	$2\theta_{1/2}$	$I_F=20$ mA	--	35	--	Deg

Typical Electro-Optical Characteristics Curves

Fig.1 Forward Current vs.

Fig.2 Spectral Distribution

Ambient Temperature

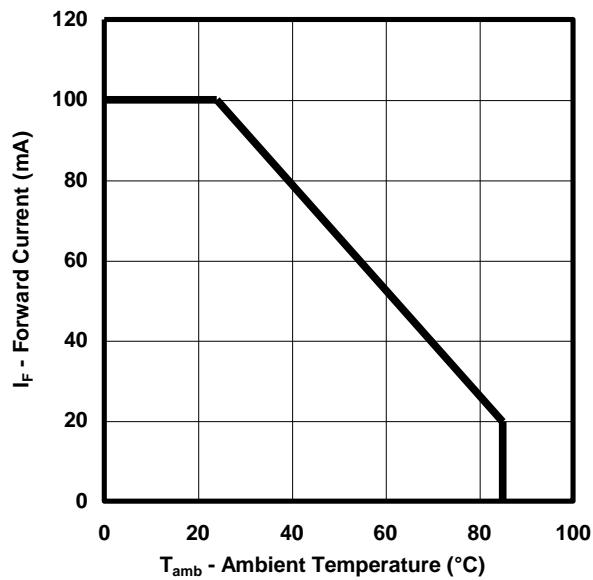
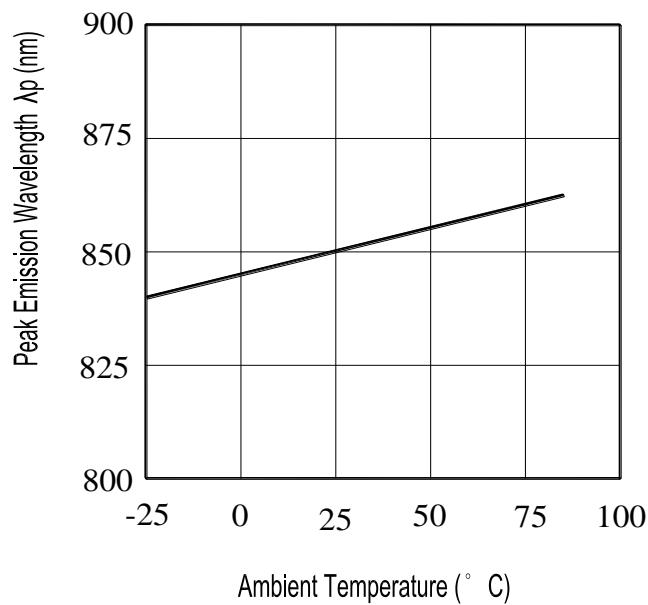


Fig.3 Peak Emission Wavelength
Ambient Temperature



Typical Electro-Optical Characteristics Curves

Fig.5 Radian Intensity vs.

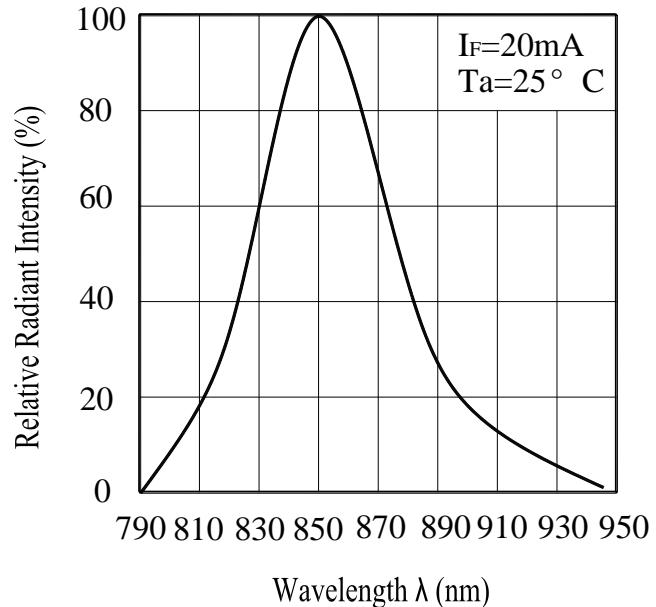
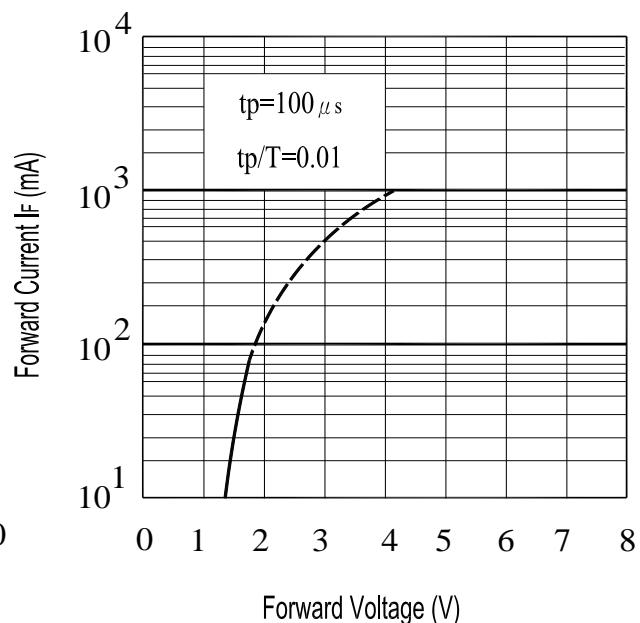


Fig.4 Forward Current
vs. Forward Voltage



Forward Current

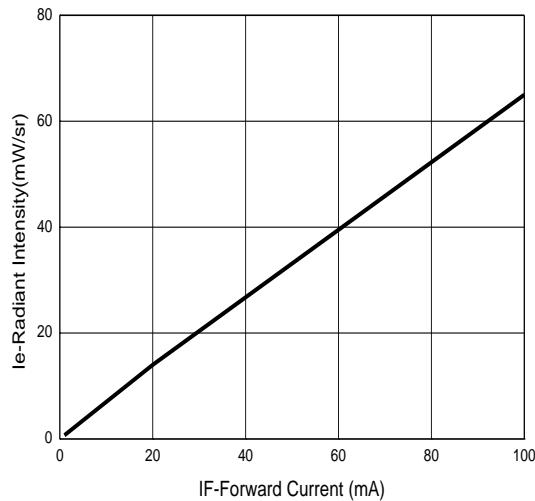
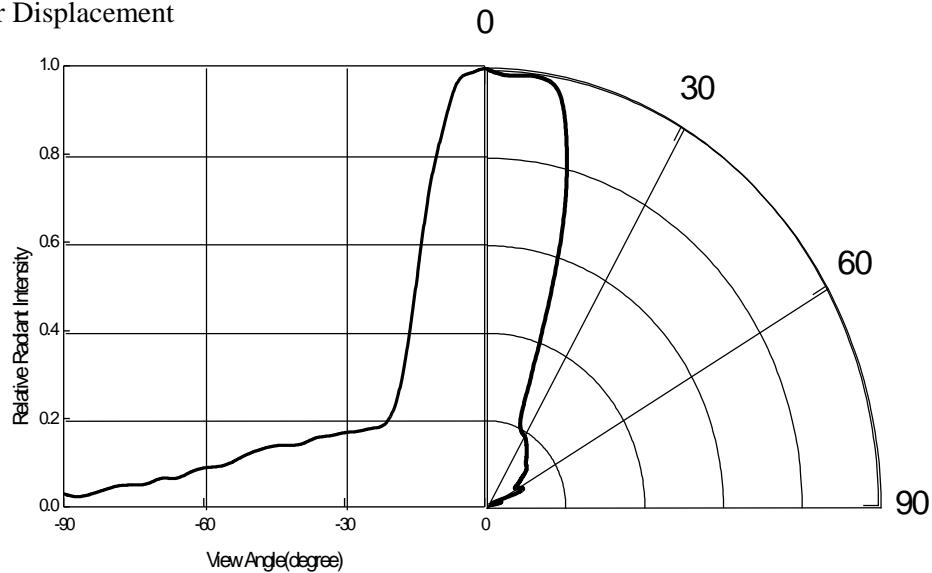


Fig.6 Relative Radiant Intensity vs.

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).

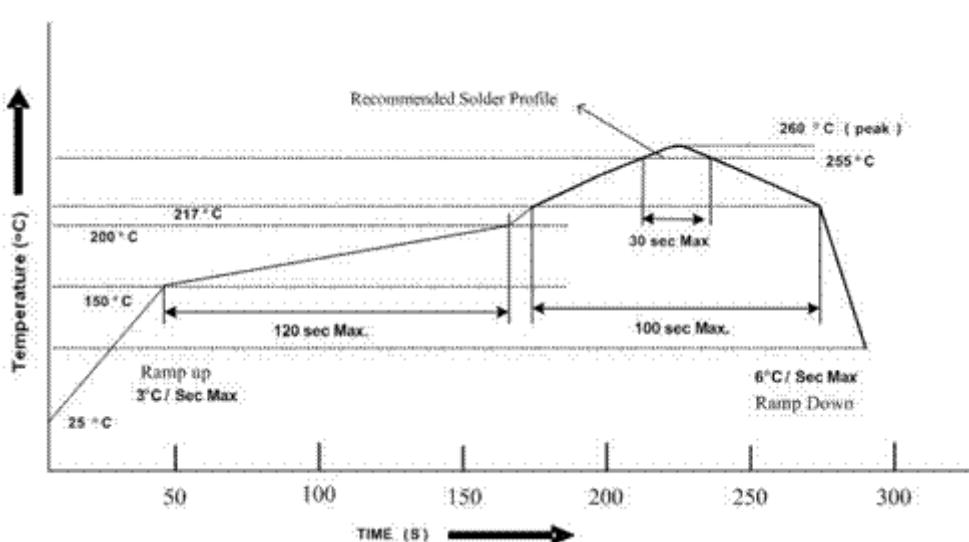
2. Storage

- 2.1 Do not open moisture proof bag before the products are ready to use.
- 2.2 Before opening the package: The LEDs should be kept at 30°C 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°C 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 : $60 \pm 5^\circ\text{C}$ for 48 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.

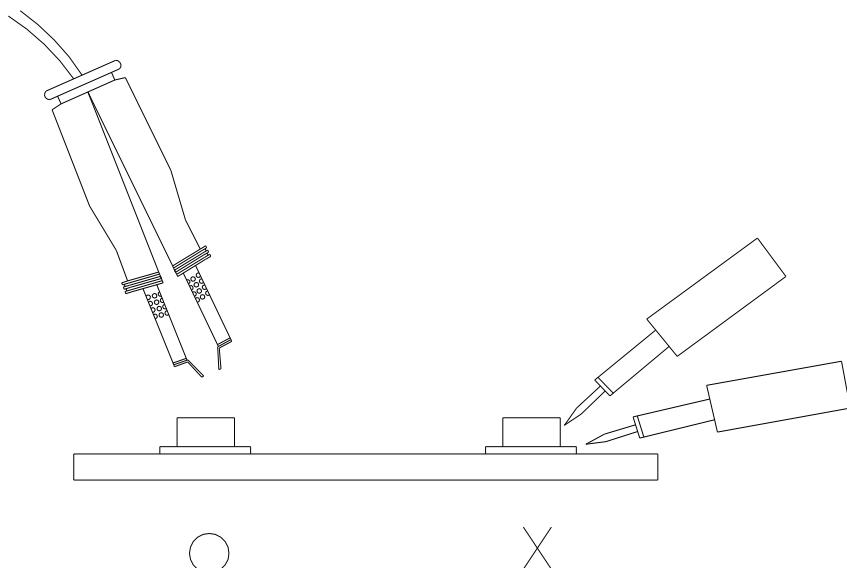
4. Soldering Iron

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

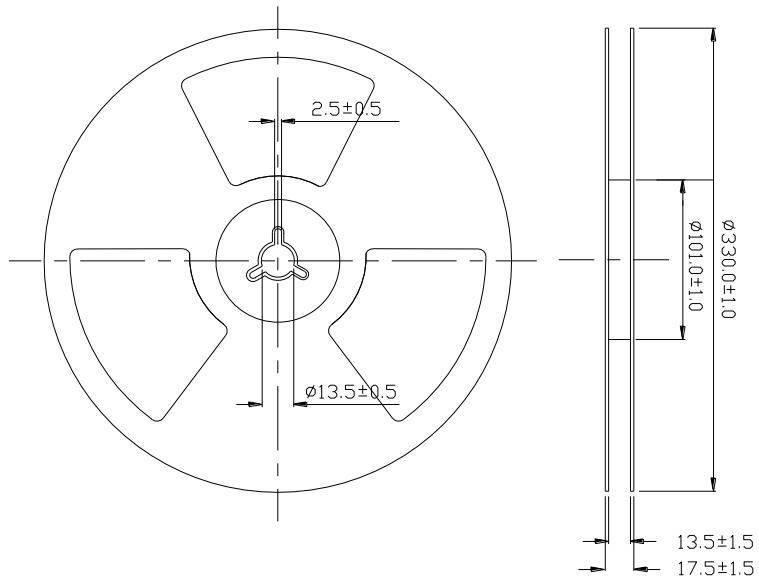
more intervals, and do soldering of each terminal. Be careful because the damage of the product is often started at the time of the hand solder.

5. Repairing

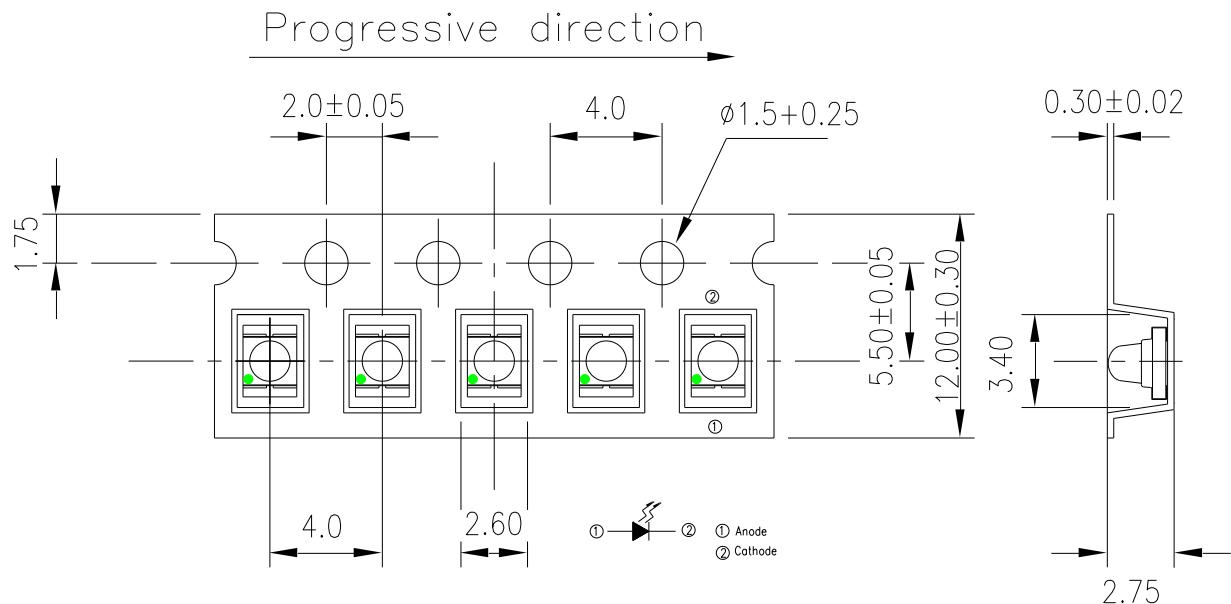
Repair should not be done after the LEDs have been soldered. When repairing is unavoidable, a double-head soldering iron should be used (as below figure). It should be confirmed beforehand whether the characteristics of the LEDs will or will not be damaged by repairing.



Package Dimensions

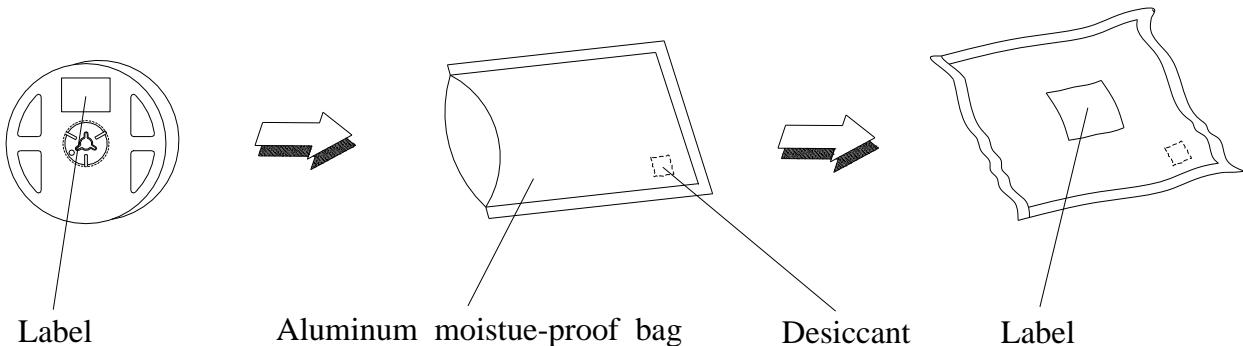


Carrier Tape Dimensions : (Quantity: 2500pcs/reel)

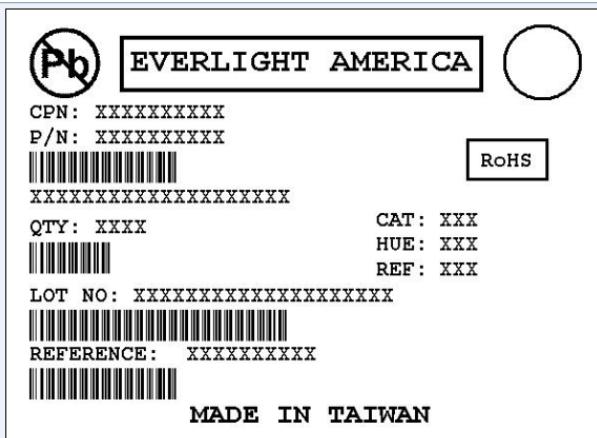


Unit: mm

Packing Procedure



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

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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