

### Reverse Package Chip Infrared LED With Inner Lens EAISR3216A1



#### Features

- Small double-end package
- Low forward voltage
- Good spectral matching to Si photo detector
- Package in 8mm tape on 7" diameter reel.
- Pb free
- The product itself will remain within RoHS compliant version.

#### Descriptions

- EAISR3216A1 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

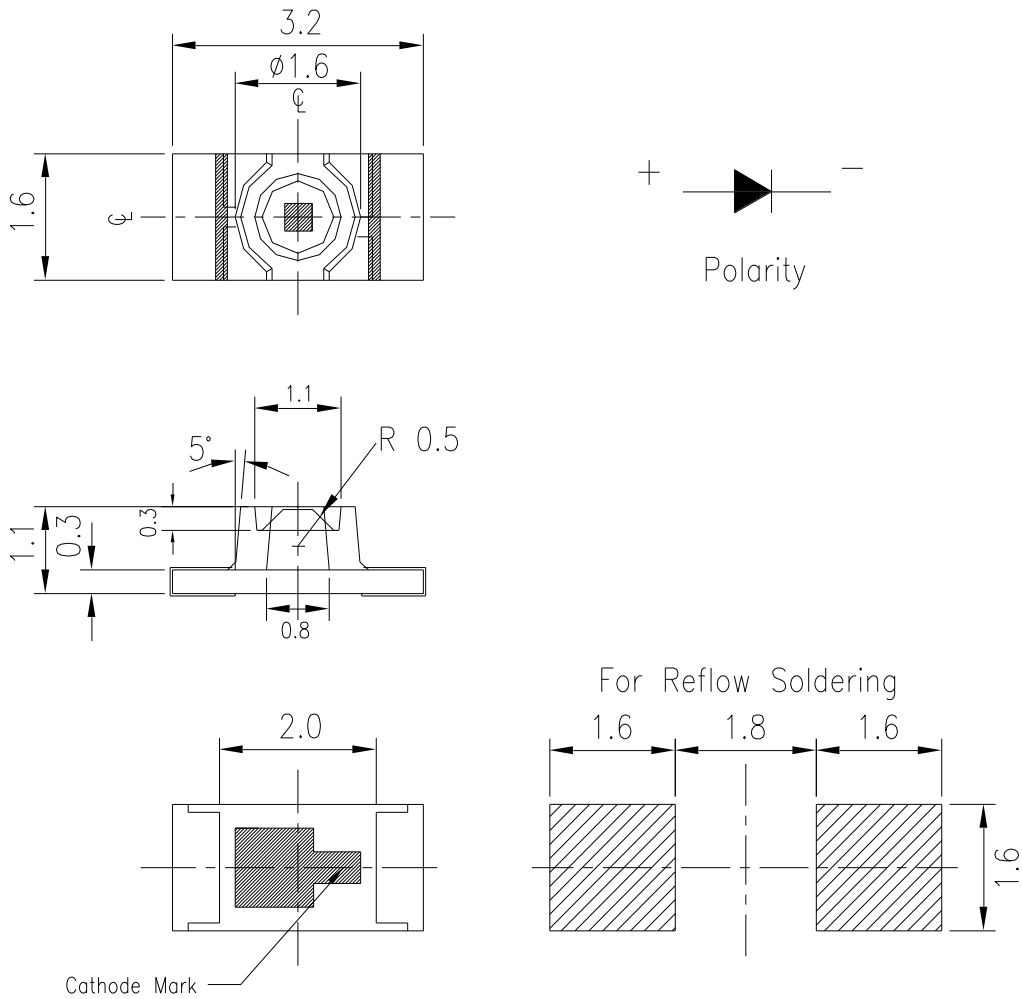
#### Applications

- PCB mounted infrared sensor
- Infrared remote control units with high power requirement
- Scanner
- Infrared applied system

#### Device Selection Guide

Part Category	Chip Material	Resin Color
EAISR3216A1	GaAlAs	Water clear

### Package Dimensions



- Notes:** 1.All dimensions are in millimeters  
2.Tolerances unless dimensions  $\pm 0.1$ mm

**Absolute Maximum Ratings (Ta=25°C)**

Parameter	Symbol	Rating	Units
Continuous Forward Current	$I_F$	50	mA
Reverse Voltage	$V_R$	5	V
Peak Forward Current*1	$I_{FP}$	1.0	A
Operating Temperature	$T_{opr}$	-40 ~ +85	°C
Storage Temperature	$T_{stg}$	-40 ~ +85	°C
Soldering Temperature*2	$T_{sol}$	260	°C
Power Dissipation at(or below) 25°C Free Air Temperature	$P_d$	110	mW

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

\*2: Soldering time  $\leq 5$  seconds.

**Electro-Optical Characteristics (Ta=25°C)**

Parameter	Symbol	Condition	Min.	Typ.	Max.	Units
Radiant Intensity	$I_e$	$I_F=20mA$	3.0	5.0	--	mW/sr
		$I_F=100 mA$ (Pulse Width $\leq 100 \mu s$ and Duty $\leq 50\%$ )	13.0	23.0	--	
Peak Wavelength	$\lambda_p$	$I_F=20mA$	--	850	--	nm
Spectral Bandwidth	$\Delta \lambda$	$I_F=20mA$	--	42	--	nm
Forward Voltage	$V_F$	$I_F=20mA$	--	1.45	1.65	V
		$I_F=100mA$ (Pulse Width $\leq 100 \mu s$ and Duty $\leq 50\%$ )	--	1.66	1.90	
Reverse Current	$I_R$	$V_R=5V$	--	--	10	$\mu A$
Optical rise and fall time	$t_r/t_f$	$I_F=20mA$	--	25/15	35/35	ns
View Angle	$2 \theta_{1/2}$	$I_F=20mA$	--	60	--	deg

**Typical Electro-Optical Characteristics Curves**

Fig.1 Forward Current vs.

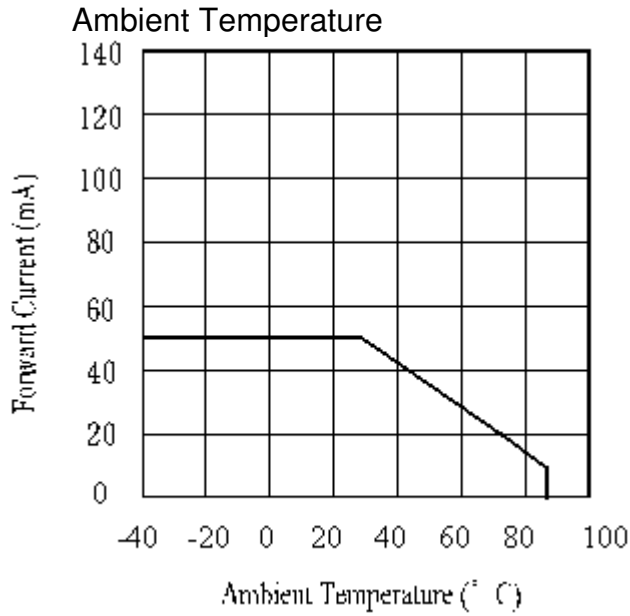


Fig.2 Spectral Distribution

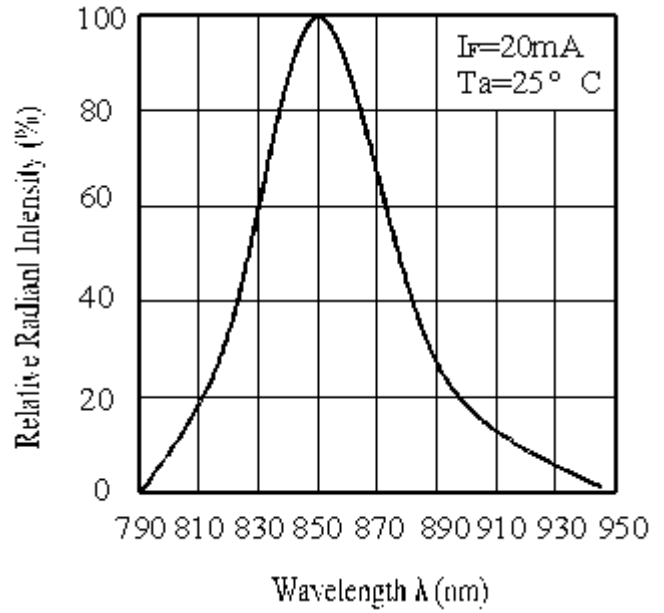


Fig.3 Peak Emission Wavelength vs. Ambient Temperature

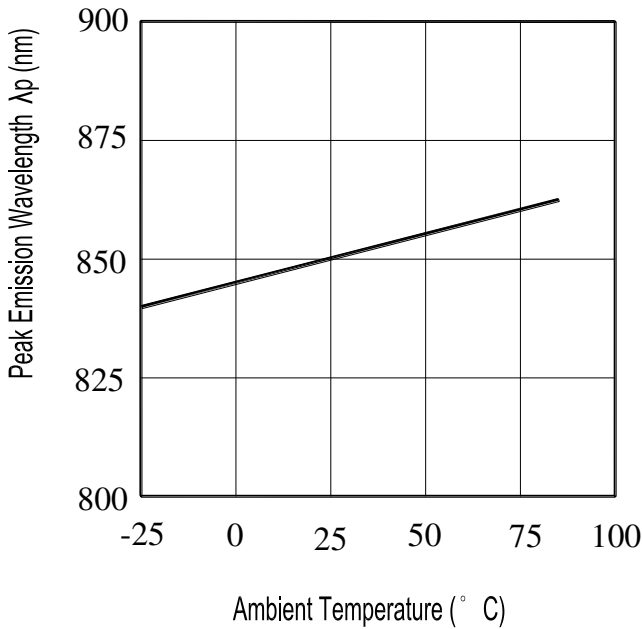
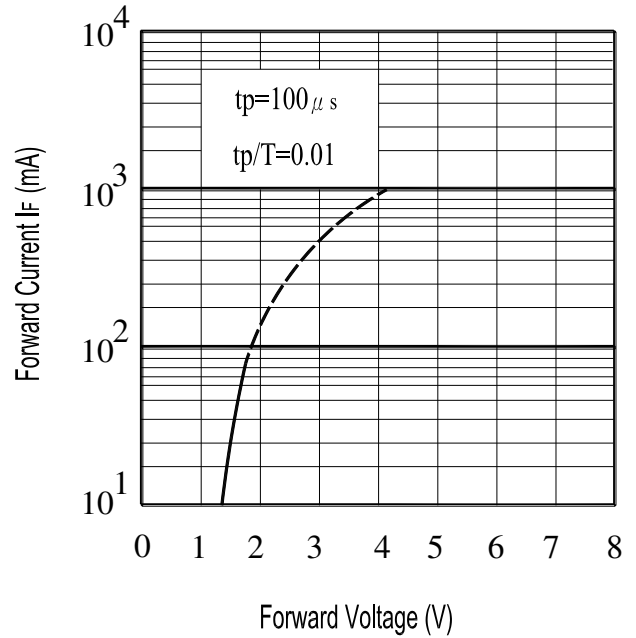


Fig.4 Forward Current vs. Forward Voltage



### Typical Electro-Optical Characteristics Curves

Fig.5 Radiant Intensity vs.  
Forward Current

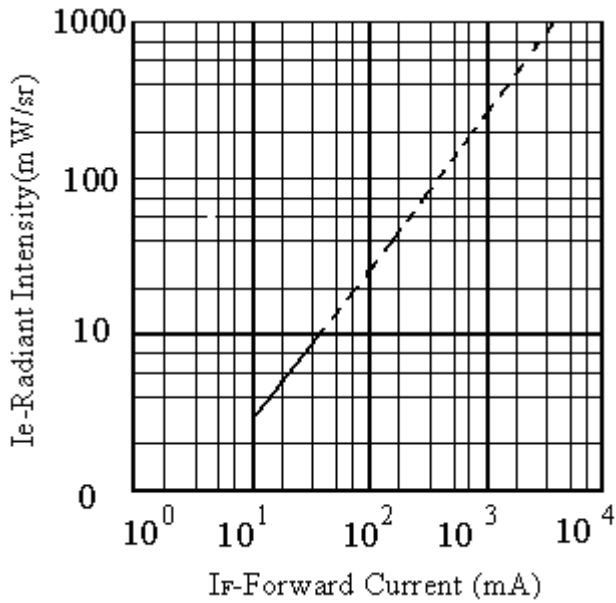
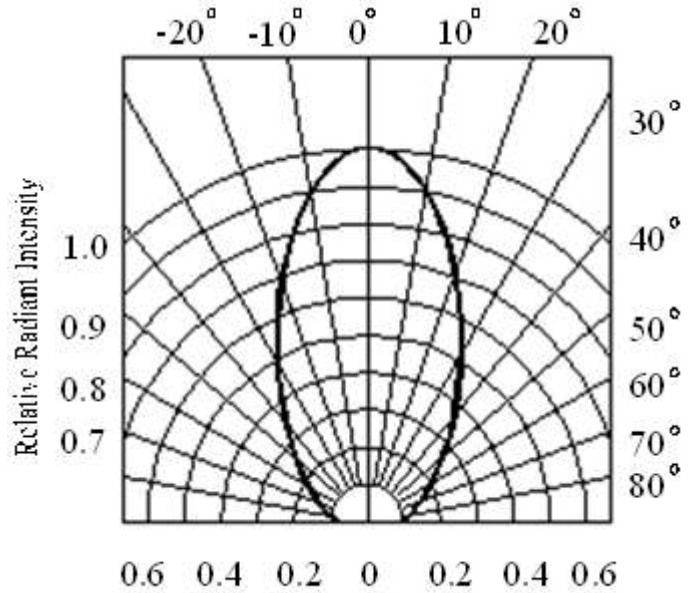


Fig.6 Relative Radiant Intensity vs.  
Angular Displacement



## 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.

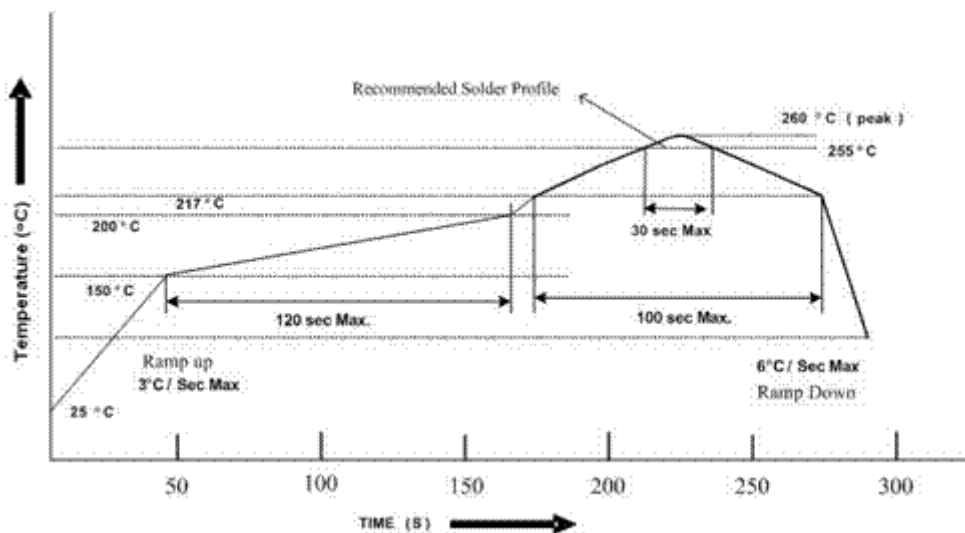
2.5 The LEDs should be used within 168 hours (7 days) after opening the package.

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±5°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.

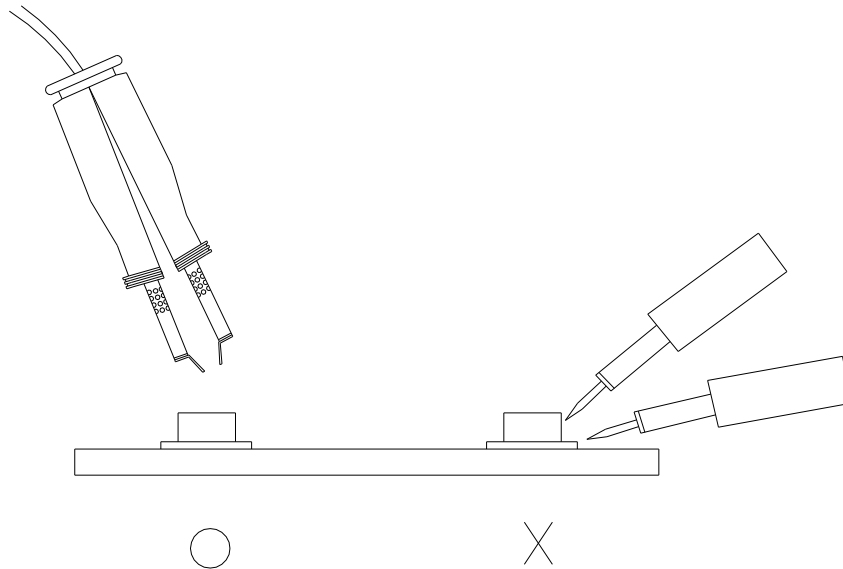
3.4 After soldering, do not warp the circuit board.

#### 4. Soldering Iron

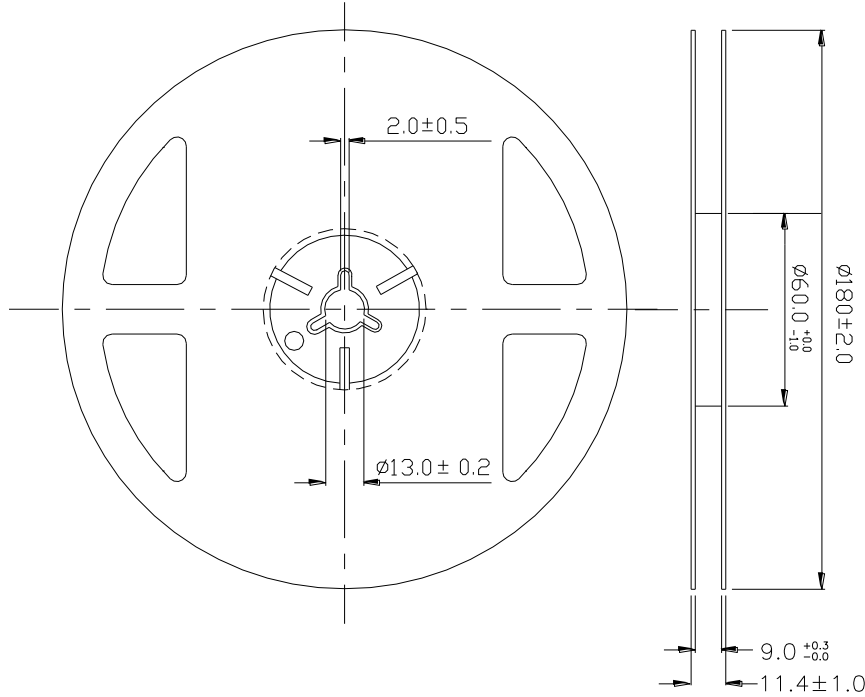
Each terminal is to go to the tip of soldering iron temperature less than 350°C for 3 seconds within once in less than the soldering iron capacity 25W. Leave two seconds and more intervals, and do soldering of each terminal. Be careful because the damage of the product is often started at the time of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

#### 5. Repairing

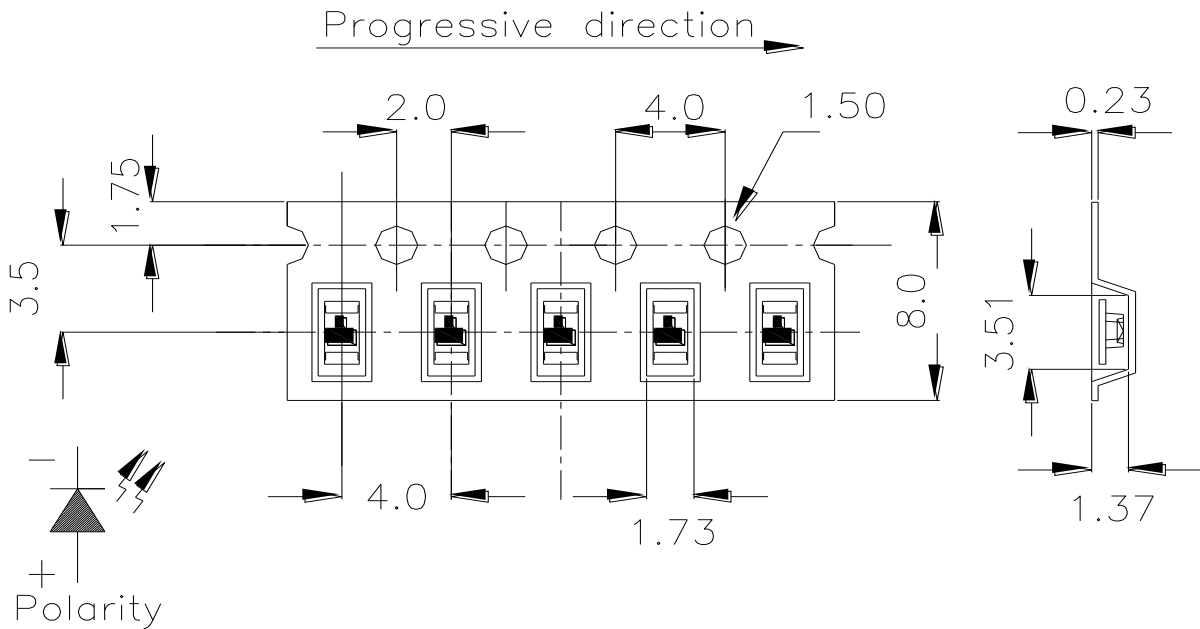
Repair should not be done after the LEDs have been soldered. When repairing is unavoidable, a double-head soldering iron should be used (as below figure). It should be confirmed beforehand whether the characteristics of the LEDs will or will not be damaged by repairing.



**Package Dimensions**



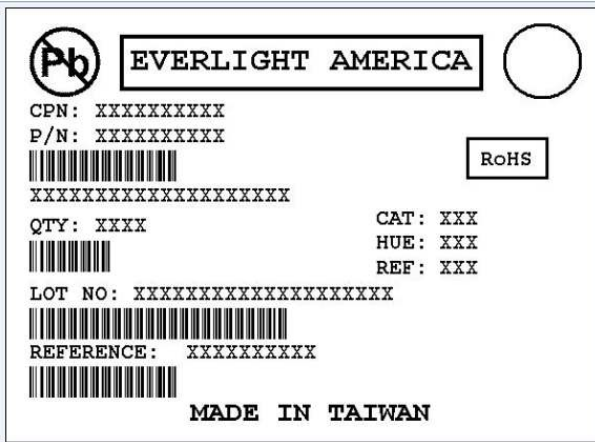
**Taping Dimensions**



**Note:** The tolerances unless mentioned is  $\pm 0.1\text{mm}$ , 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

### 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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