

### EAIST3045A0

#### Features

- Small package with high efficiency
- Peak wavelength  $\lambda_p=855\text{nm}$
- Soldering methods:SMT
- Thermal resistance (junction to lead):  $40^\circ\text{C/W}$ .
- Moisture Sensitivity Level: 1
- Pb free
- The product itself will remain within RoHS compliant version.

#### Description

- EAIST3045A0 series is an infrared emitting diode in miniature SMD package which is molded in a water clear silicone with spherical top view lens.
- The device is spectrally matched with silicon photodiode, Phototransistor.

#### Applications

- CCD Camera
- Night Vision
- Infrared applied system

## Device Selection Guide

Chip Materials	Lens Color
GaAlAs	Water clear

## Absolute Maximum Ratings (Ta=25°C)

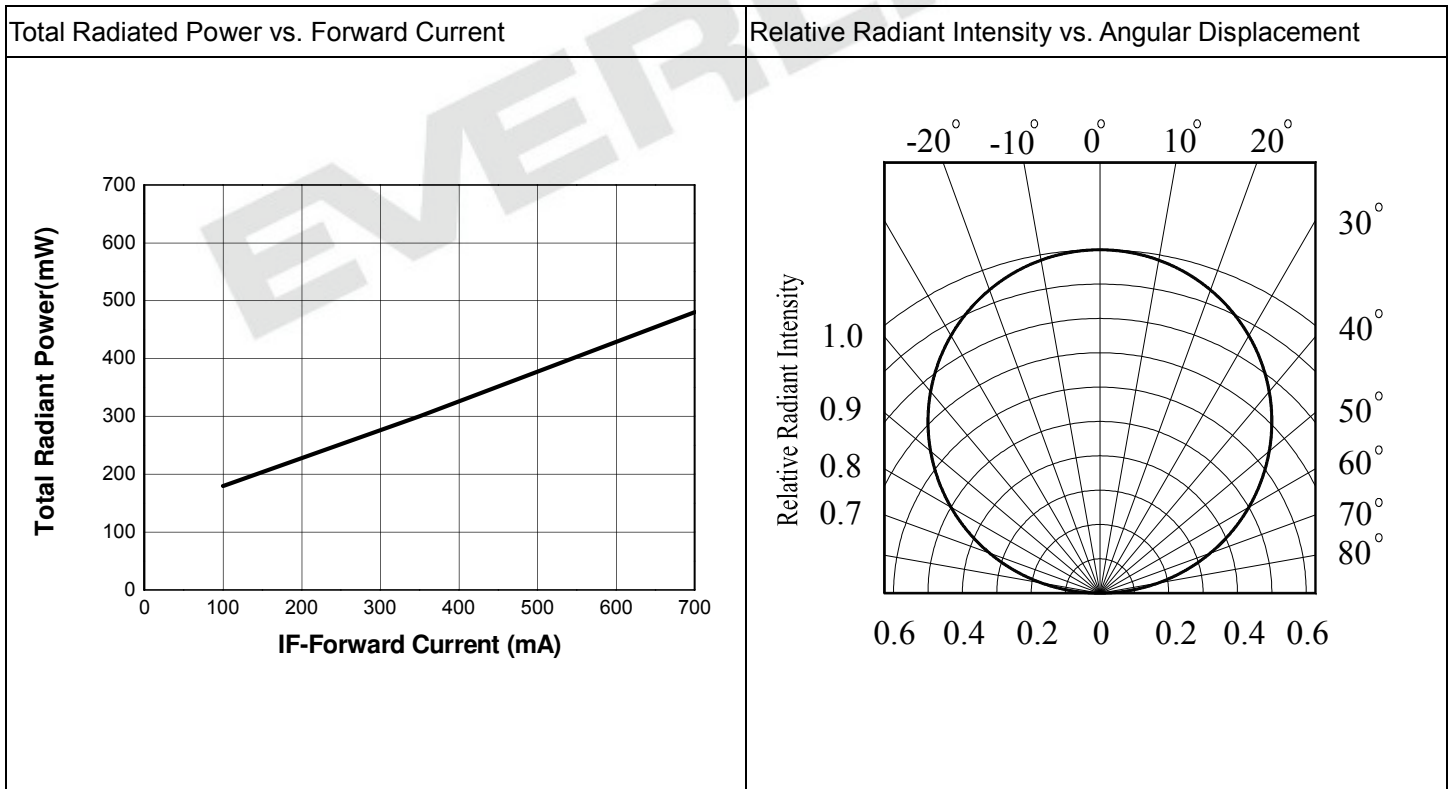
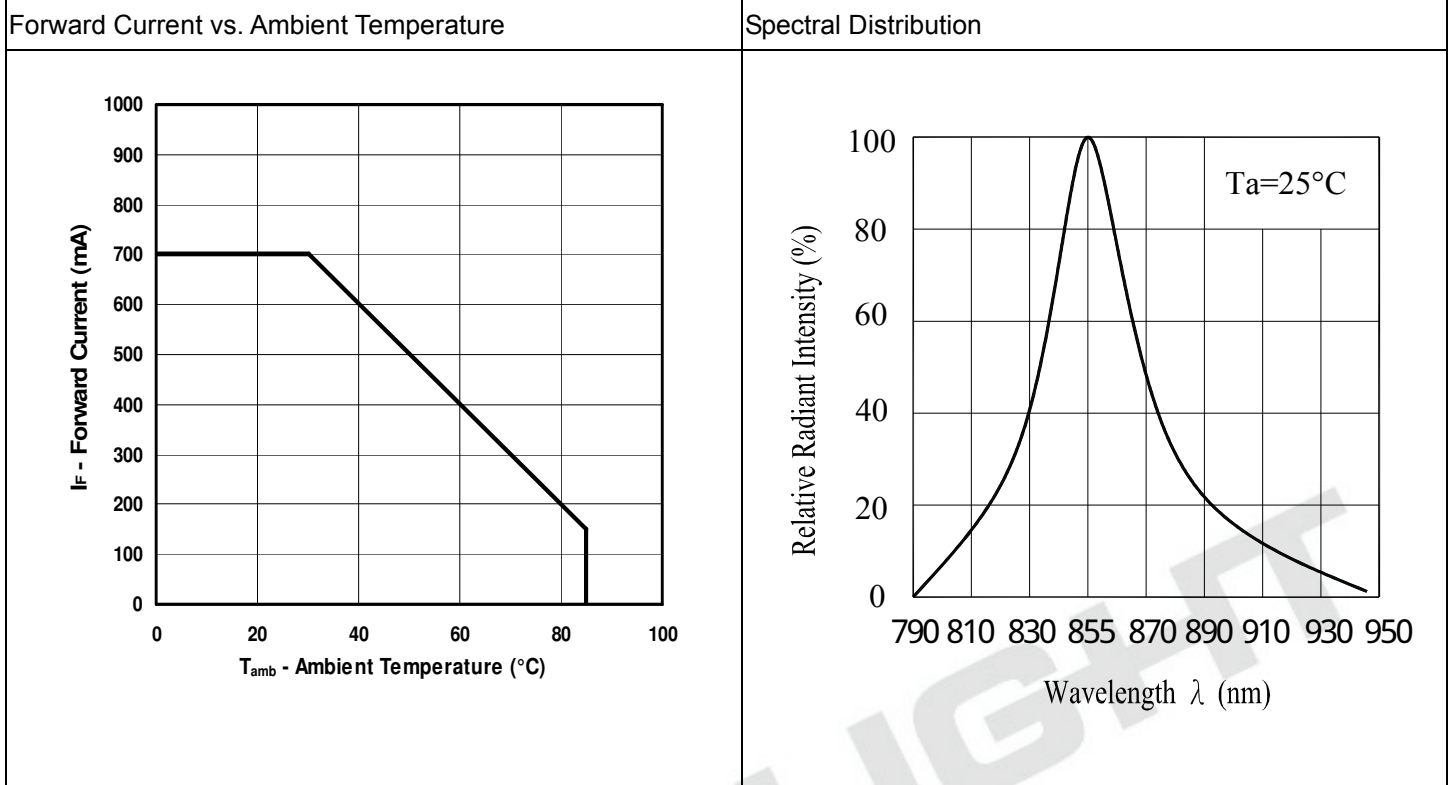
Parameter	Symbol	Rating	Unit
Forward Current	$I_F$	700	mA
Reverse Voltage	$V_R$	5	V
Operating Temperature	$T_{opr}$	-40 ~ +85	°C
Storage Temperature	$T_{stg}$	-40 ~ +100	°C
Junction temperature	$T_j$	115	°C
Thermal resistance (junction to leadframe)	$R_{th(j-L)}$	40	°C/W
Power Dissipation @ $I_F=700mA$	$P_d$	1	W

**Note: We suggest that customer should add the heat sink with EAIST3045A0 to exclude the heat.**

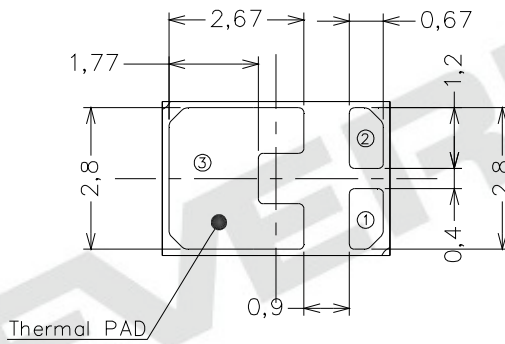
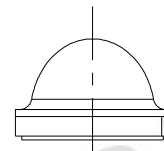
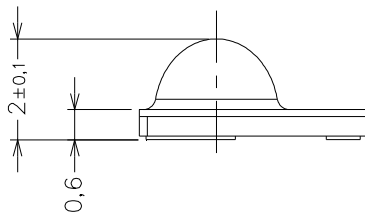
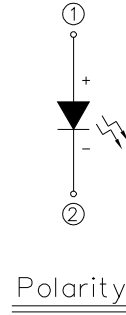
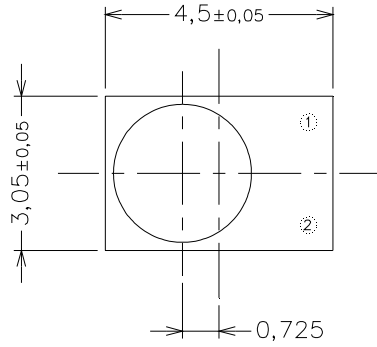
**Electro-Optical Characteristics (Ta=25°C)**

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Total Radiated Power	Po	120	180	--	mW	If=350mA
		250	300	--		If=700mA
		--	480	--		If=1A , Pulse Width ≤ 100μs ,Duty ≤ 1%
Radiant Intensity	IE	40	70	--	mW/sr	If=350mA
		80	140	--		If=700mA
		--	180	--		If=1A , Pulse Width ≤ 100μs ,Duty ≤ 1%
Peak Wavelength	λp	--	855	--	nm	If=350mA
Spectral Bandwidth	Δλ	--	25	--	nm	If=350mA
Forward Voltage	VF	1.4	1.7	2.2	V	If=350mA
		1.5	1.9	2.5		If=700mA
Reverse Current	IR	--	--	10	μ A	VR=5V
View Angle	2θ1/2	--	120	--	--	deg

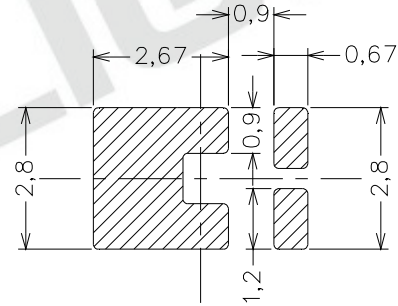
**Typical Electro-Optical Characteristics Curves**



**Package Dimension**



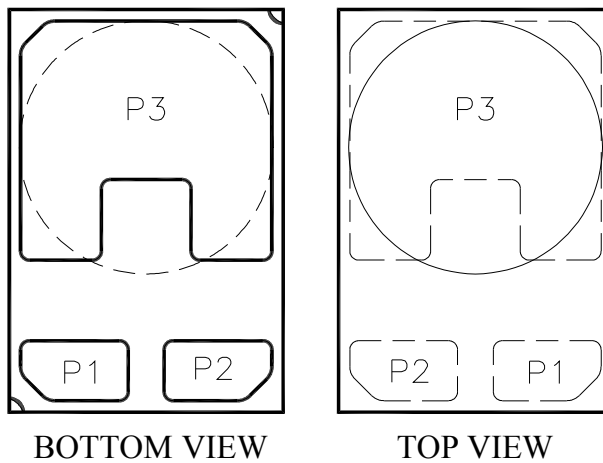
Bot. view



Soldering patterns

Note: Tolerances unless dimensions  $\pm 0.25\text{mm}$

## Pad Configuration



PAD	FUNCTION
P1	ANODE
P2	CATHODE
P3	THERMAL PAD

EVERLIGHT

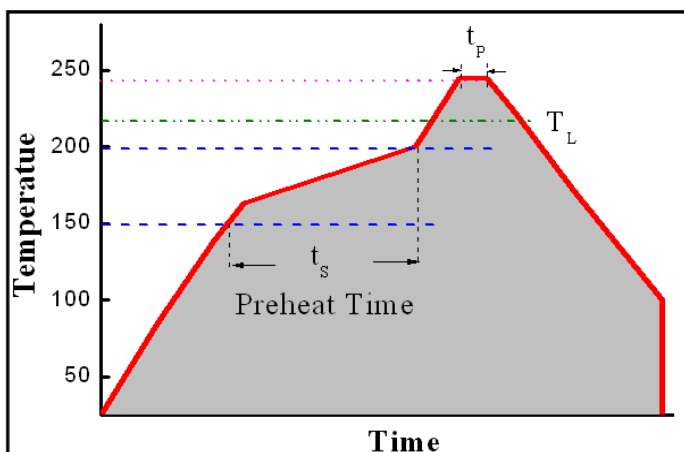
## JEDEC Moisture Sensitivity

Level	Floor Life		Soak Requirements Standard	
	Time (hours)	Conditions	Time (hours)	Conditions
1	unlimited	$\leq 30^{\circ}\text{C} / 85\% \text{ RH}$	168 (+5/-0)	85°C / 85 RH

## Reflow Soldering Characteristics

### For Reflow Process

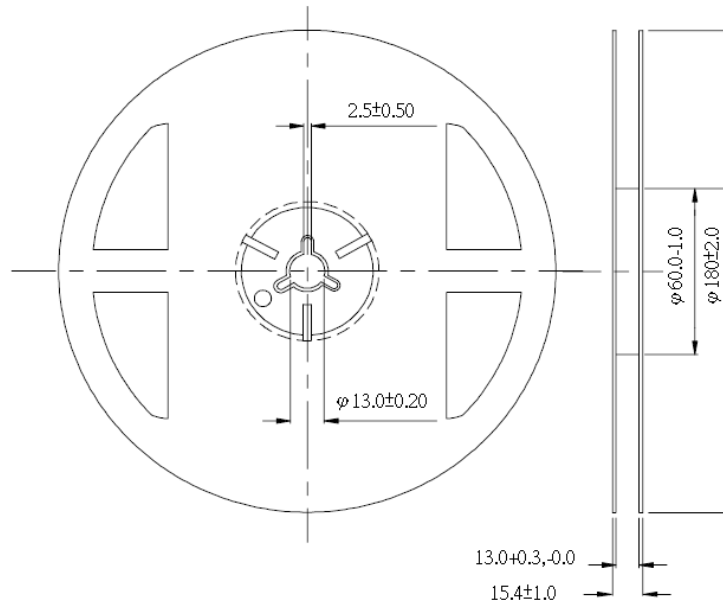
- C06 series are suitable for SMT processes.
- Curing of glue in oven must be according to standard operation flow processes.



Profile Feature	Lead Free Assembly
Ramp-Up Rate	2-3 °C/S
Preheat Temperature	150-200 °C
Preheat Time (t <sub>s</sub> )	60-120 S
Liquid Temperature (T <sub>L</sub> )	217 °C
Time maintained above T <sub>L</sub>	60-90 S
Peak Temperature (T <sub>p</sub> )	240±5 °C
Peak Time (t <sub>p</sub> )	Max 20 S
Ramp-Down Rate	3-5 °C/S

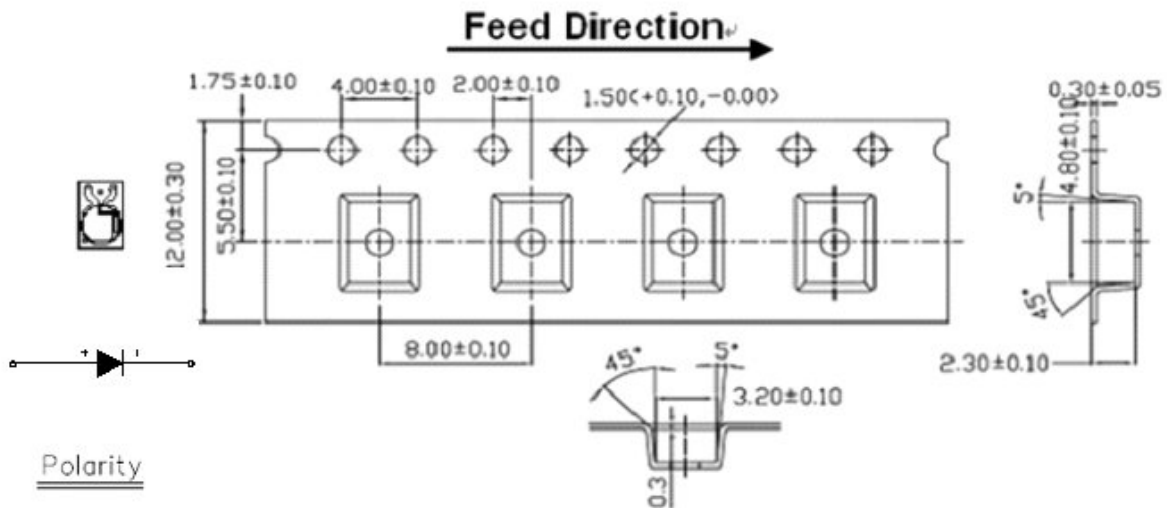
- Reflow soldering should not be done more than twice.
- In soldering process, stress on the LEDs during heating should be avoided.
- After soldering, do not bend the circuit board.

### Package Dimensions



- Note:**
1. Dimensions are in millimeters
  2. The tolerances unless mentioned is  $\pm 0.1\text{mm}$

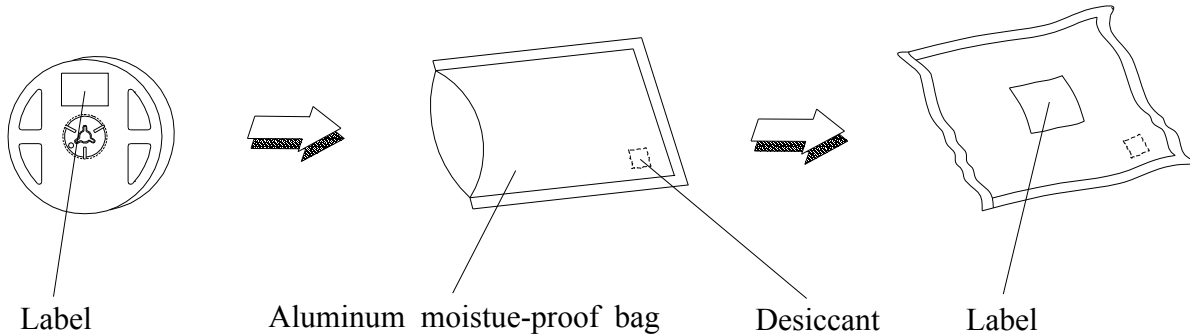
**Carrier Tape Dimensions:**  
Loaded quantity 400 PCS per reel.



- Note:**
1. Dimensions are in millimeters
  2. The tolerances unless mentioned is  $\pm 0.1\text{mm}$



## Moisture Resistant Packaging



## 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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