

EAIST3045A0

Features

- Small package with high efficiency
- Peak wavelength $\lambda_p=855\text{nm}$
- Soldering methods:SMT
- Thermal resistance (junction to lead): 40 $^{\circ}\text{C}/\text{W}$.
- 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	
Storage Temperature	T_{stg}	-40 ~ +100	
Junction temperature	T_j	115	°C
Thermal resistance (junction to leadframe)	$R_{th(j-L)}$	40	/W
Power Dissipation @ $I_F=700mA$	P_d	1	W

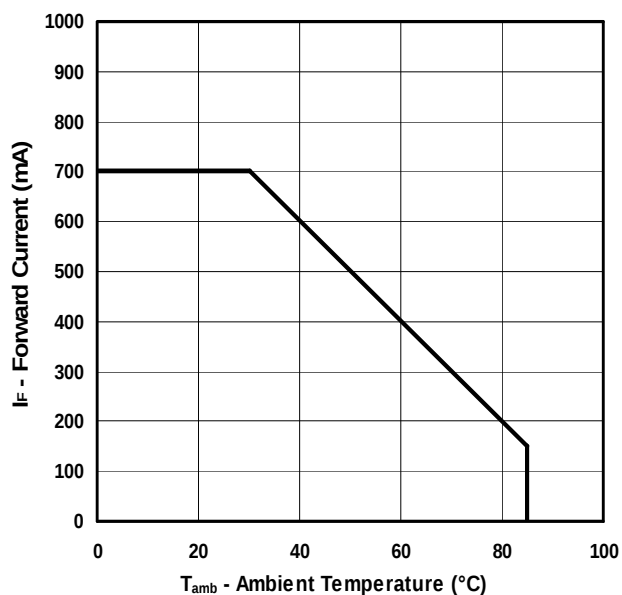
Note: We suggest that customer should add the heat sink with EAIST3045A0 to exclude the heat.

Electro-Optical Characteristics (Ta=25 °C)

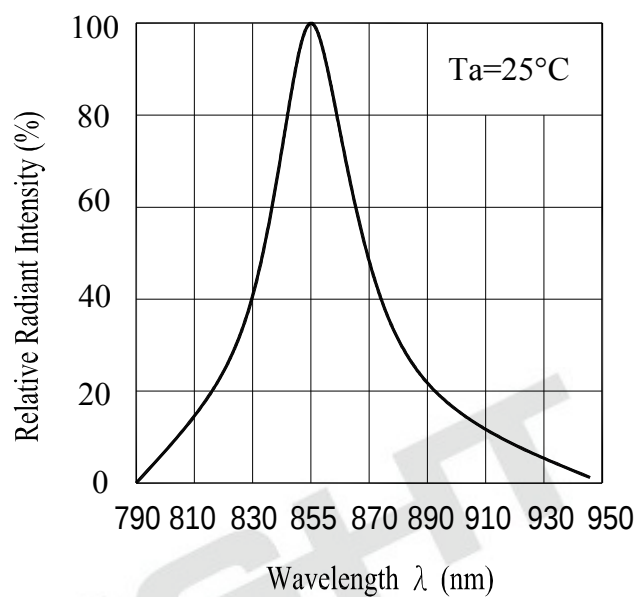
Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Total Radiated Power	Po	120	180	--	mW	IF=350mA
		250	300	--		IF=700mA
		--	480	--		IF=1A , Pulse Width 100μs ,Duty 1%
Radiant Intensity	IE	40	70	--	mW/sr	IF=350mA
		80	140	--		IF=700mA
		--	180	--		IF=1A , Pulse Width 100μs ,Duty 1%
Peak Wavelength	λp	--	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	μA	VR=5V
View Angle	2θ1/2	--	120	--	--	deg

Typical Electro-Optical Characteristics Curves

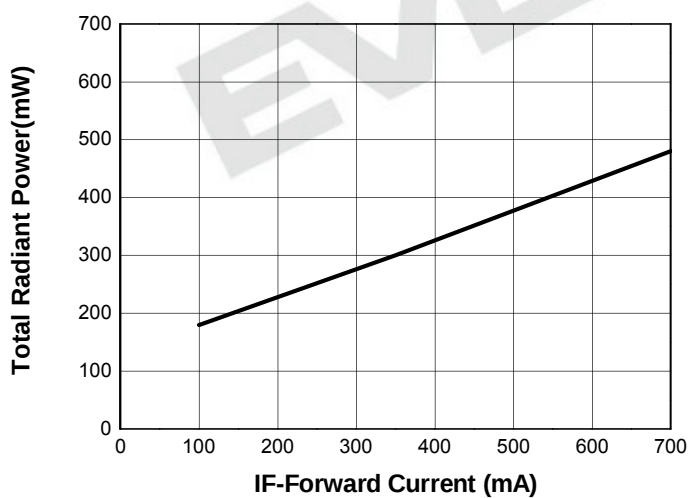
Forward Current vs. Ambient Temperature



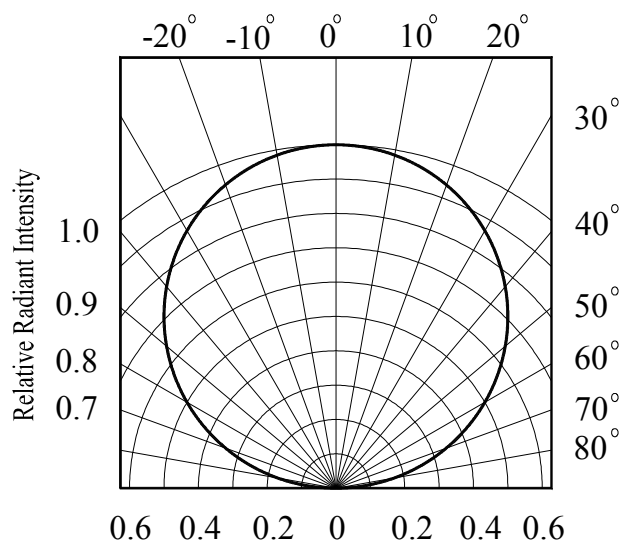
Spectral Distribution



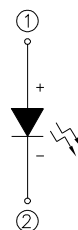
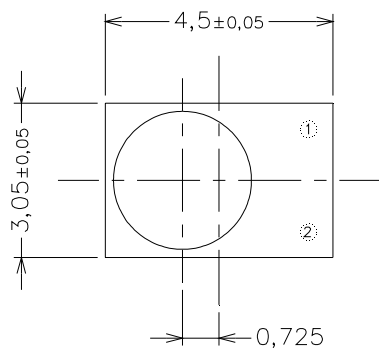
Total Radiated Power vs. Forward Current



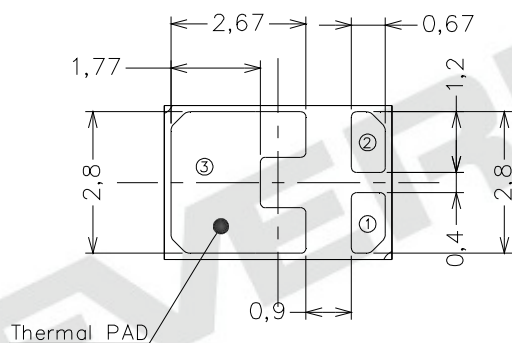
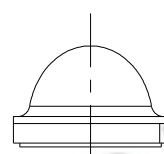
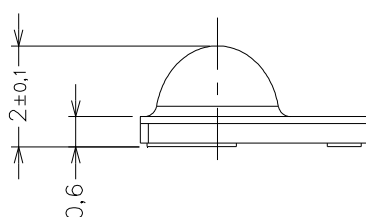
Relative Radiant Intensity vs. Angular Displacement



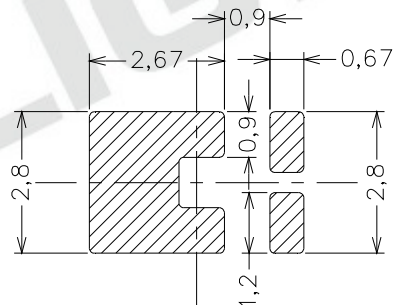
Package Dimension



Polarity



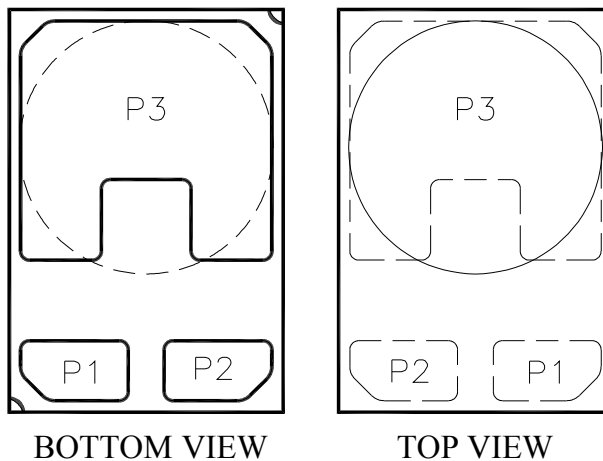
Bot. view



Soldering patterns

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

Pad Configuration



PAD	FUNCTION
P1	ANODE
P2	CATHODE
P3	THERMAL PAD

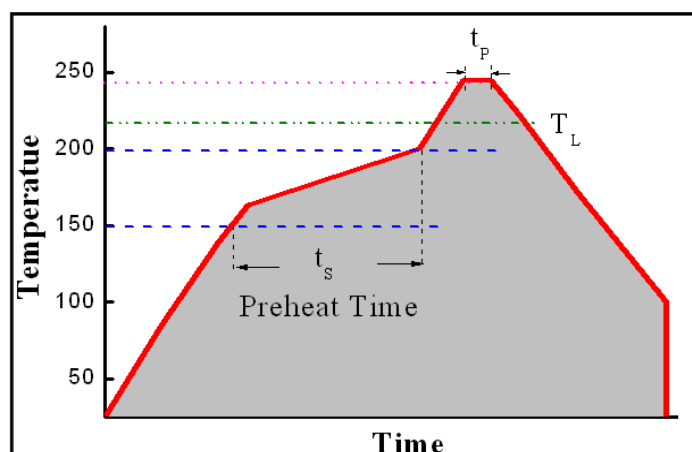
JEDEC Moisture Sensitivity

Level	Floor Life		Soak Requirements Standard	
	Time (hours)	Conditions	Time (hours)	Conditions
1	unlimited	30 / 85% RH	168 (+5/-0)	85 / 85 RH

Reflow Soldering Characteristics

For Reflow Process

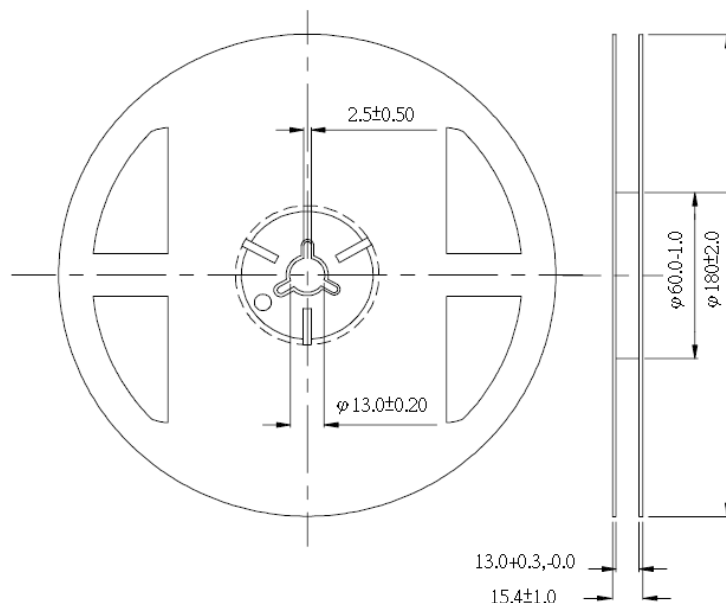
- C06 series are suitable for SMT processes.
- Curing of glue in oven must be according to standard operation flow processes.



Profile Feature	Lead Free Assembly
Ramp-Up Rate	2-3 °C/S
Preheat Temperature	150-200 °C
Preheat Time (ts)	60-120 S
Liquid Temperature (TL)	217 °C
Time maintained above TL	60-90 S
Peak Temperature (TP)	240±5 °C
Peak Time (tp)	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.

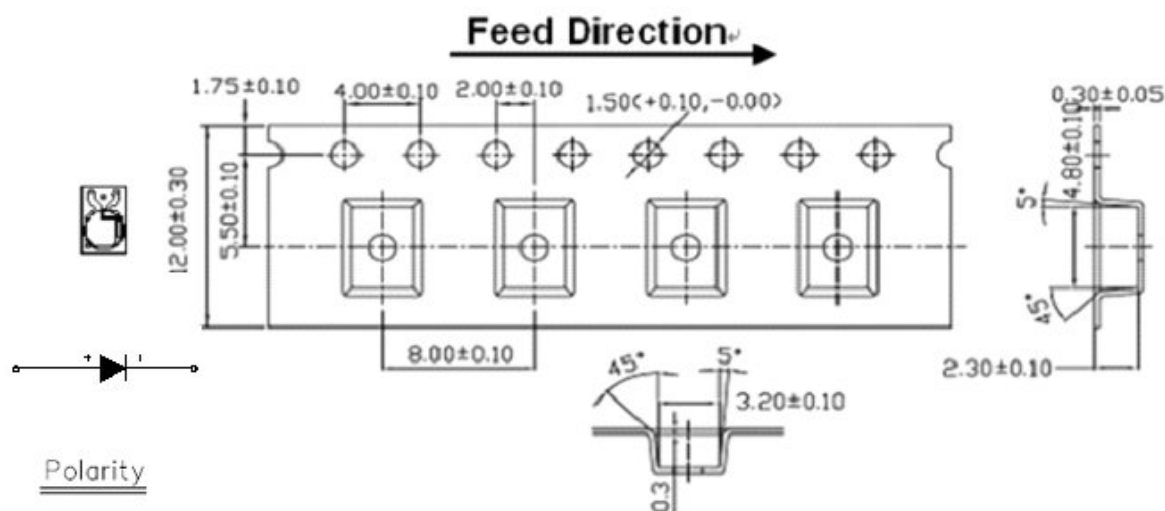
Package Dimensions



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

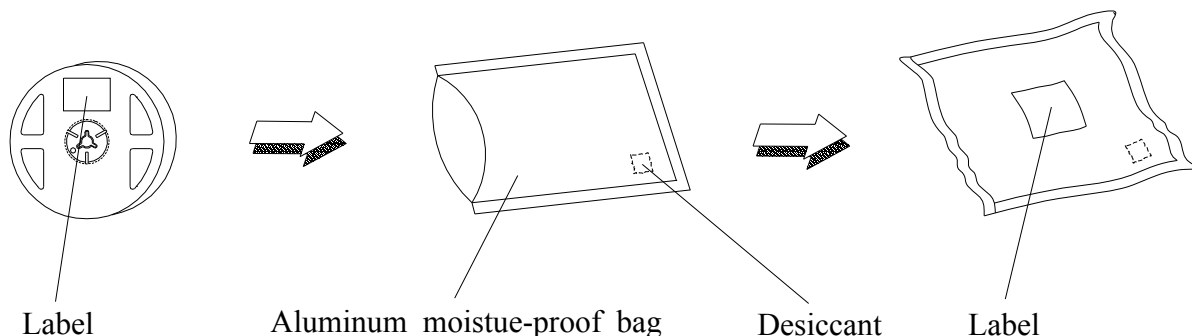
Carrier Tape Dimensions:

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

Label form specification diagram showing a rectangular label with various fields and logos. The label includes a 'No Pb' symbol, the 'EVERLIGHT' logo, a 'Month' field, a 'RoHS' logo, and several barcode fields. The fields are labeled as follows:

- CPN : XXXXXXXXXXXX
- P/N : XXXXXXXXXXXX
- QTY : XXX
- LOT NO : XXXXXXXXXXXX
- Reference : XXXXXXXXXXXX
- CAT : XX
- HUE : XX
- REF : XX
- MADE IN TAIWAN

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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