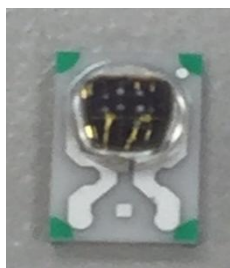


Technical Data Sheet

High Power Infrared LED

EAIST3045A0



Features

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

Descriptions

- 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
- Infrared applied system

Device Selection Guide

LED Part No.	Chip Material	Lens Color
EAIST3045A0	GaAlAs	Water clear

Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Rating	Unit
Continuous Forward Current	I_F	1000	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
Electrostatic Discharge(HBM)	ESD	2000	V
Thermal resistance (junction to leadframe)	$R_{th(j-L)}$	40	°C/W
Power Dissipation @ $I_F=700mA$	P_d	1	W

Notes:*2Note: 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 ($t_p = 10\text{ms}$)	P_o	180	230	--	mW	$I_F=350\text{mA}$
		350	400	--		$I_F=700\text{mA}$
		--	600	--		$I_F=1000\text{mA}$
Radiant Intensity ($t_p = 10\text{ms}$)	I_E	70	100	--	mWsr	$I_F=350\text{mA}$
		160	200	--		$I_F=700\text{mA}$
		--	250	--		$I_F=1000\text{mA}$
Peak Wavelength	λ_p	--	855	--	nm	$I_F=350\text{mA}$
Spectral Bandwidth	$\Delta\lambda$	--	25	--	nm	$I_F=350\text{mA}$
Forward Voltage	V_F	1.4	1.8	2.4	V	$I_F=350\text{mA}$
		1.8	2.2	2.6		$I_F=700\text{mA}$
		2.0	2.4	2.8		$I_F=1000\text{mA}$
Reverse Current	I_R	--	--	10	μA	$V_R=5\text{V}$
View Angle	2 $\theta_{1/2}$	--	120	--	deg	$I_F=20\text{mA}$

Typical Electro-Optical Characteristics Curves

Fig.1 Forward Current vs. Ambient Temperature

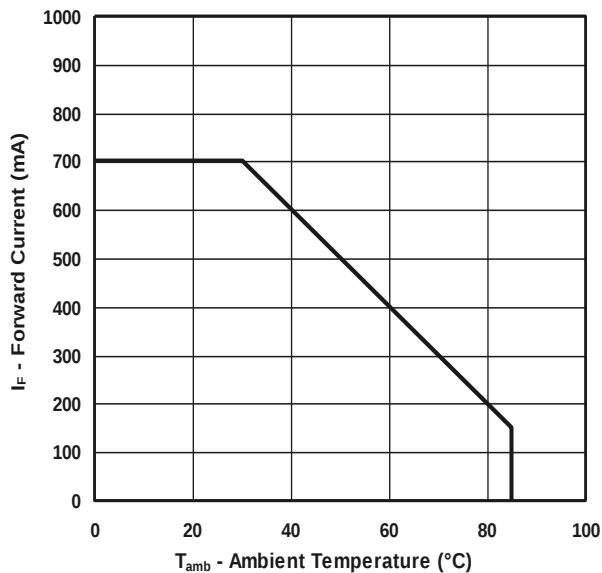


Fig.2 Spectral Distribution

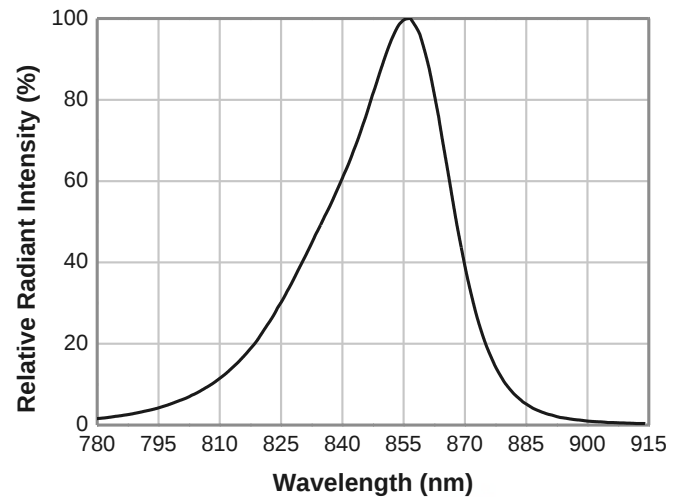


Fig.3 Total Radiated Power vs. Forward Current

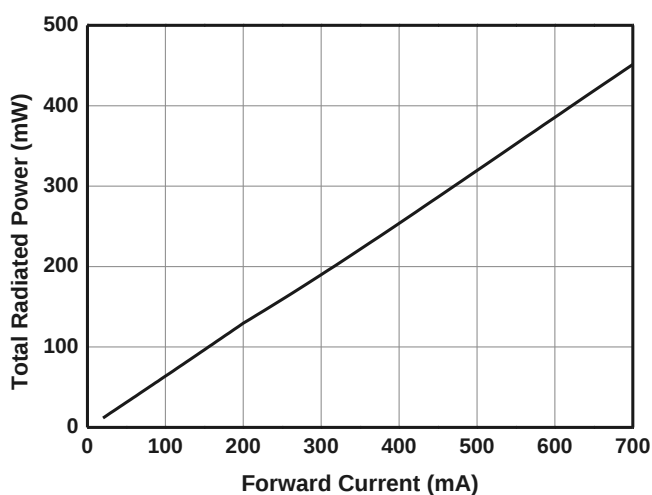
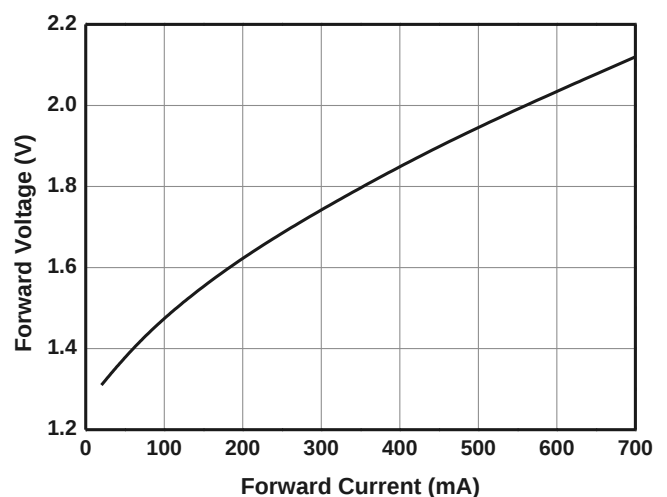
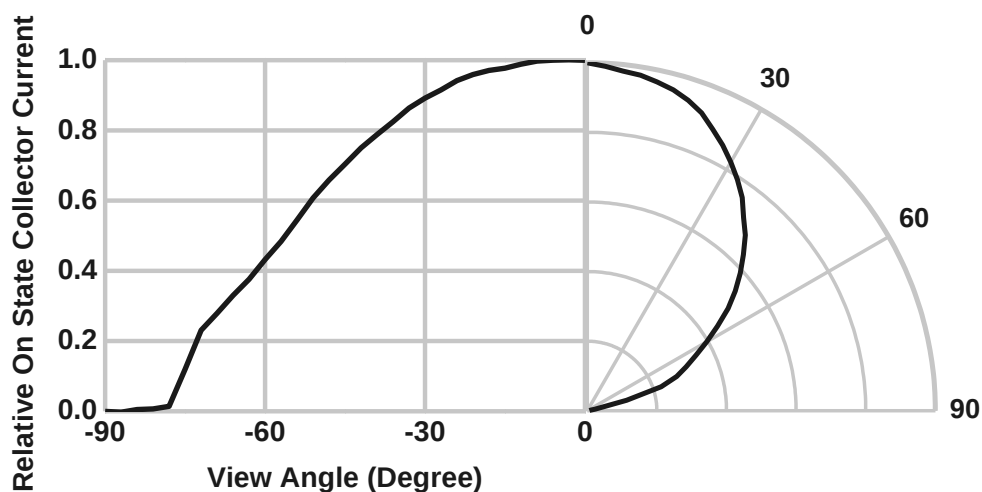


Fig.4 Forward Voltage vs. Forward Current



Typical Electro-Optical Characteristics Curves

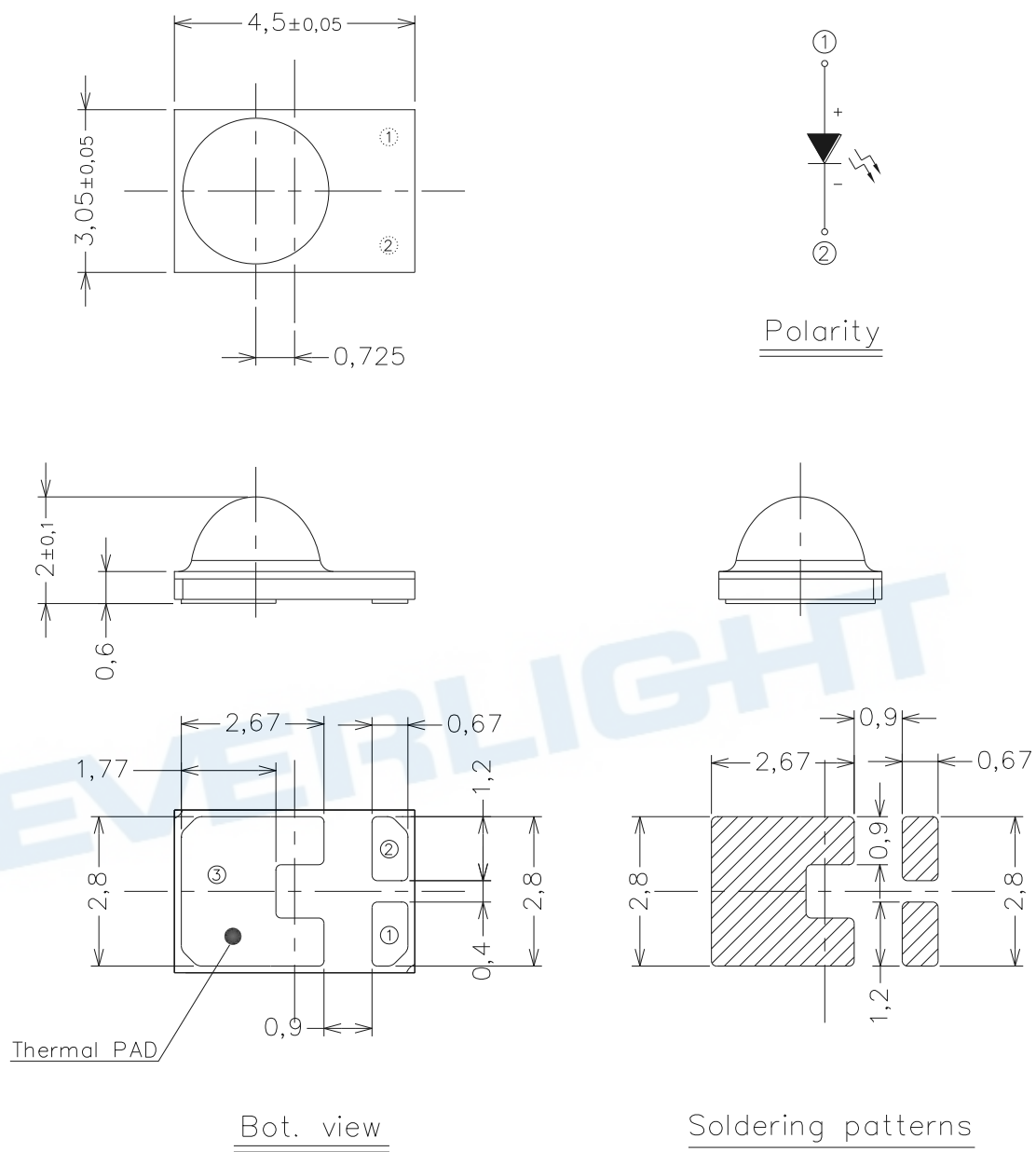
Fig.5 Relative Radiant Intensity vs. Angular Displacement



JEDEC Moisture Sensitivity

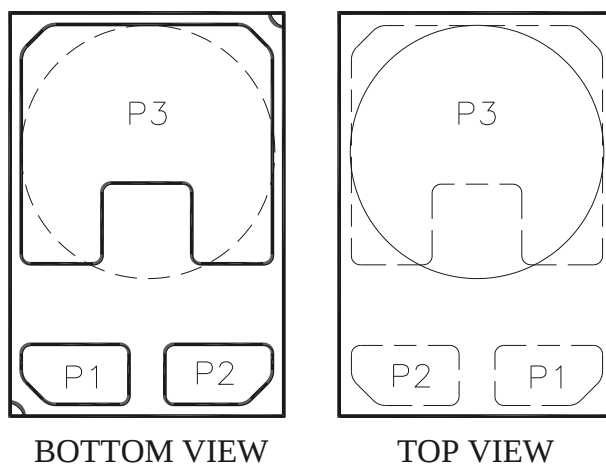
Level	Floor Life		Soak Requirements Standard	
	Time (hours)	Conditions	Time (hours)	Conditions
1	unlimited	$\leq 30^{\circ}\text{C}$ / 85% RH	168 (+5/-0)	85°C / 85 RH

Package Dimension



1. Dimensions are in millimeters.
2. Tolerances unless mentioned are ± 0.1 mm.
3. Do not handle the device by the lens. Incorrect force applied to the lens may lead to the failure of devices.

Pad Configuration

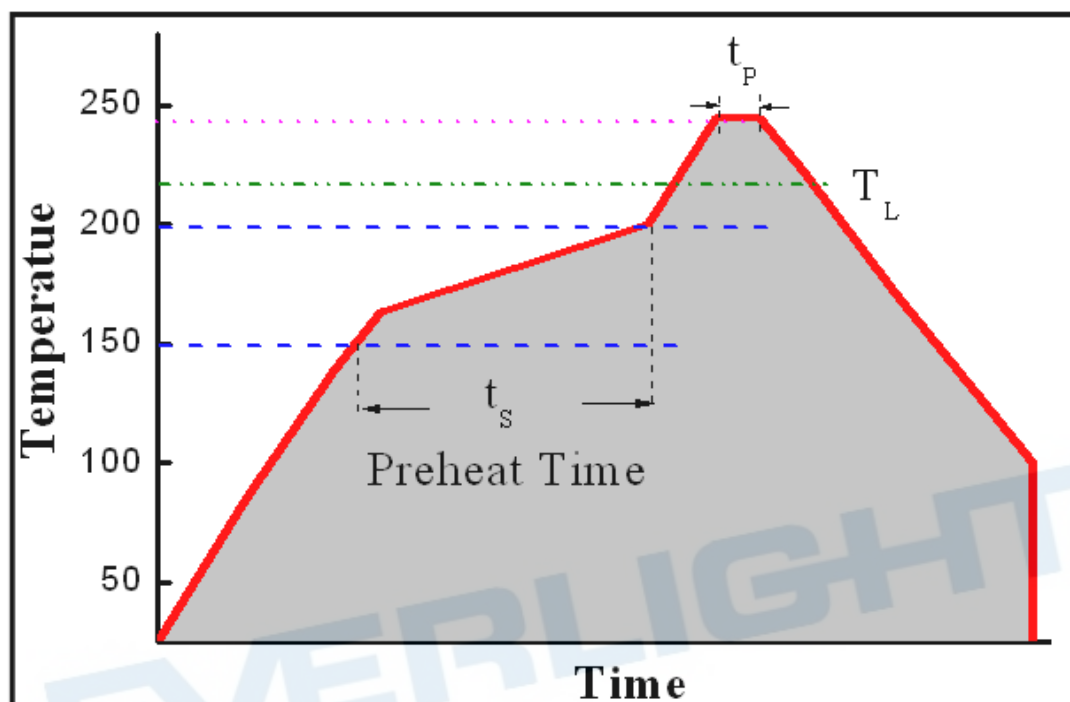


PAD	FUNCTION
P1	ANODE
P2	CATHODE
P3	THERMAL PAD

Reflow Soldering Characteristics

For Reflow Process

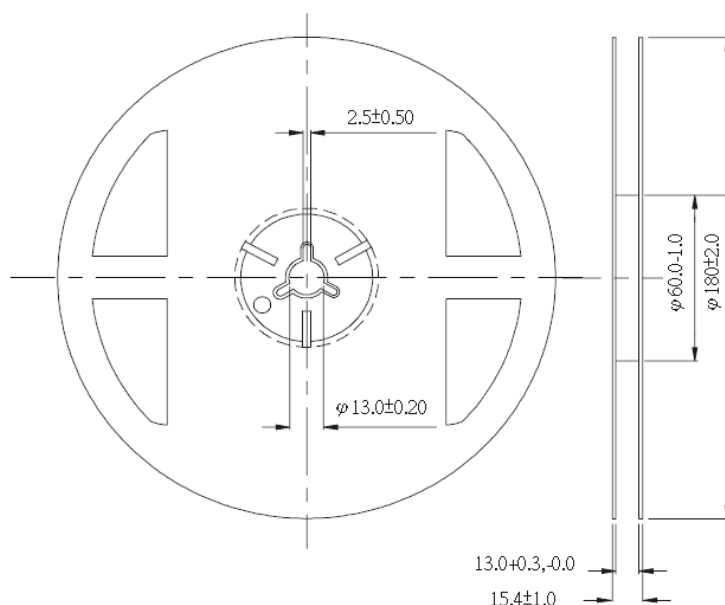
- C06 series are suitable for SMT processes.
- Curing of glue in oven must be according to standard operation flow processes.



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

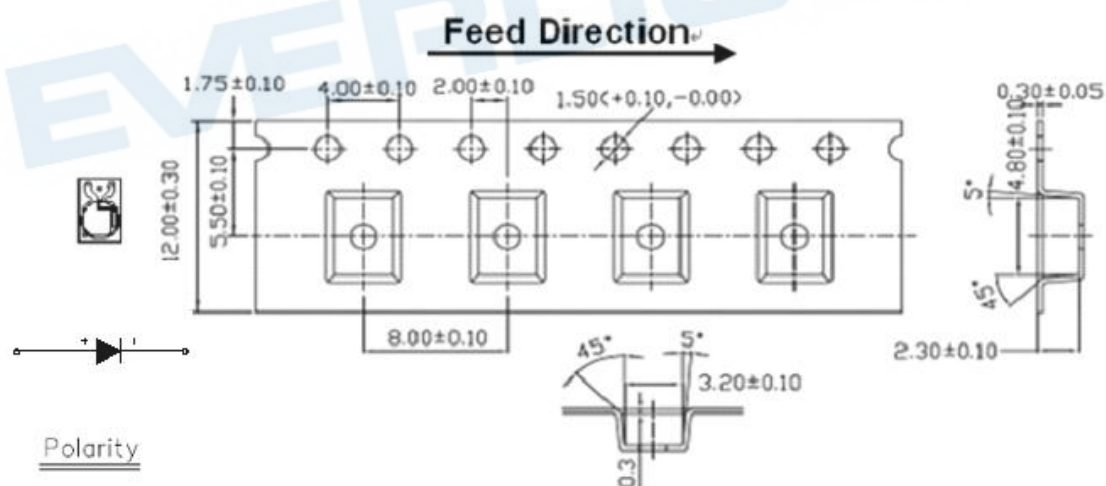
Package Dimensions



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

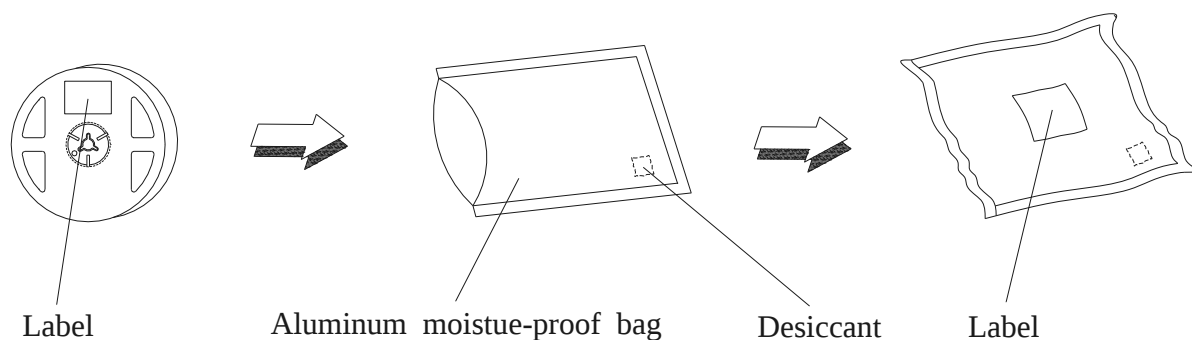
Carrier Tape Dimensions:

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



Moisture Resistant Packing Materials Label Form Specification

Label Form Specification diagram showing a rectangular label with various fields and barcodes. The label includes a 'Pb' symbol, 'EVERLIGHT' logo, 'Month' field, 'RoHS' symbol, and several barcode areas. 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

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.
5. These specification sheets include materials protected under copyright of EVERLIGHT. Reproduction in any form is prohibited without obtaining EVERLIGHT's prior consent.
6. This product is not intended to be used for military, aircraft, automotive, medical, life sustaining or life saving applications or any other application which can result in human injury or death. Please contact authorized Everlight sales agent for special application request.