EVERLIGHT AMERICAS

DATASHEET

EAIST1005A1

Features

- High reliability
- Small double-end package
- Package in 8mm tape on 7” diameter reel
- Compatible with infrared and vapor phase reflow solder process.
- Pb free
- The product itself will remain within RoHS compliant version.

Descriptions

- EAIST1005 is an infrared emitting diode in miniature SMD package which is molded in a water clear epoxy.
- The device is spectrally matched with silicon photodiode and phototransistor.

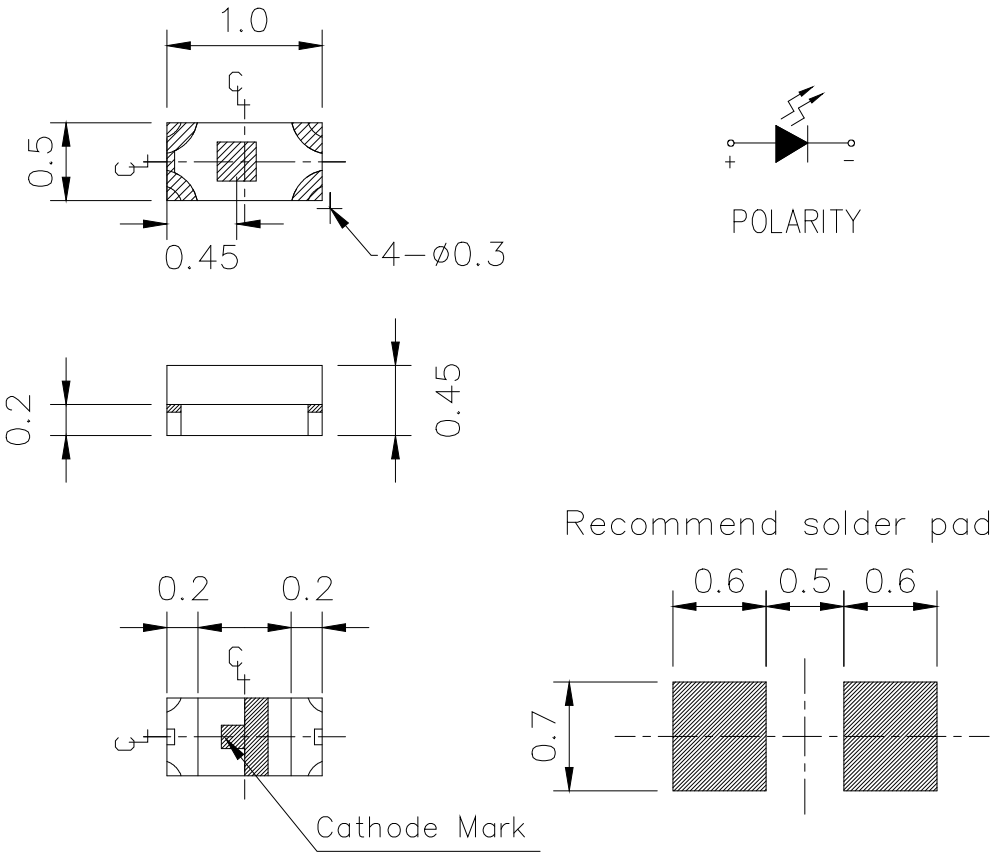
Applications

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

Device Selection Guide

LED Part No.	Chip Material	Lens Color
EAIST1005A1	AlGaAs	Water clear

Package Dimensions



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

Absolute Maximum Ratings (Ta=25℃)

Parameter	Symbol	Rating	Units
Continuous Forward Current	I_F	50	mA
Reverse Voltage	V_R	5	V
Operating Temperature	T_{opr}	-40 ~ +85	℃
Storage Temperature	T_{stg}	-40 ~ +100	℃
Soldering Temperature	T_{sol}	260	℃
Power Dissipation at(or below) 25℃Free Air Temperature	P_d	100	mW

Notes: * Soldering time≦5 seconds.

Electro-Optical Characteristics (Ta=25℃)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Units
Radiant Intensity	Ie	I_F=20mA	0.5	1.3	--	mW /sr
Peak Wavelength	λ p	I_F=100mA	840	850	870	nm
Spectral Bandwidth	Δ λ	I_F=100mA	--	30	--	nm
Forward Voltage	V_F	I_F=20mA	--	1.4	1.7	V
		I_F=100mA Pulse Width≦100μs ,Duty≦1%	1.40	1.60	2.20	
Reverse Current	I_R	V_R=5V	--	--	10	μA
Rise time	tr	I_F=20mA	--	16	--	ns
Fall time	tf	I_F=20mA	--	30	--	ns
View Angle	2θ 1/2	I_F =20mA	--	145	--	deg

Rank

Condition: I_F=20mA

Unit: mW/sr

Bin number	F	G-1	G-2	H
Min	0.5	1.0	1.5	2.0
Max	1.5	2.0	2.5	3.5

Typical Electro-Optical Characteristics Curves

Fig.1 Forward Current vs. Ambient Temperature

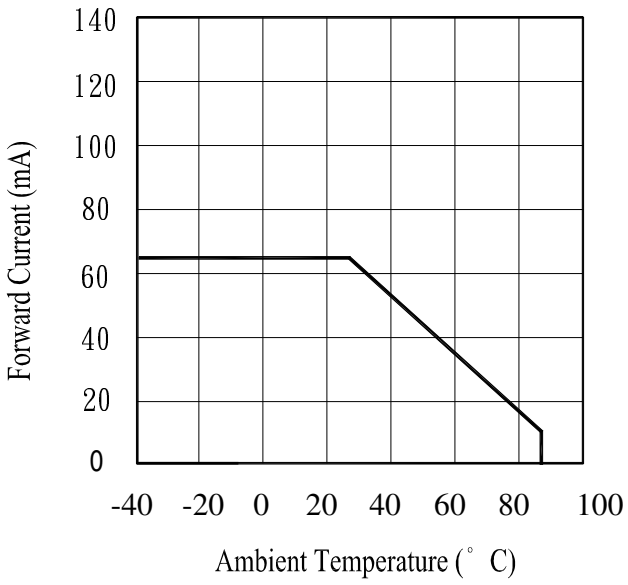


Fig.2 Spectral Distribution

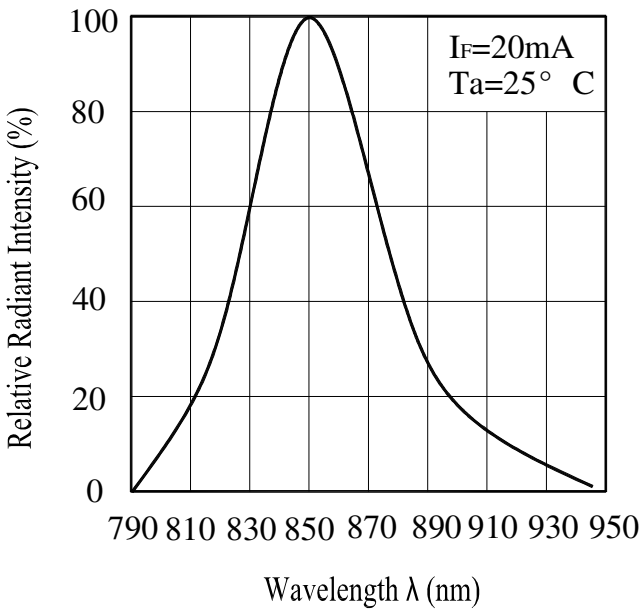


Fig.3 Peak Emission Wavelength Ambient Temperature

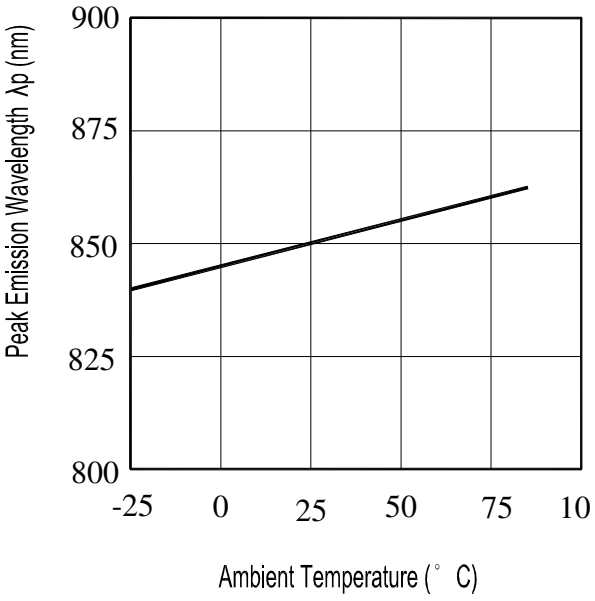
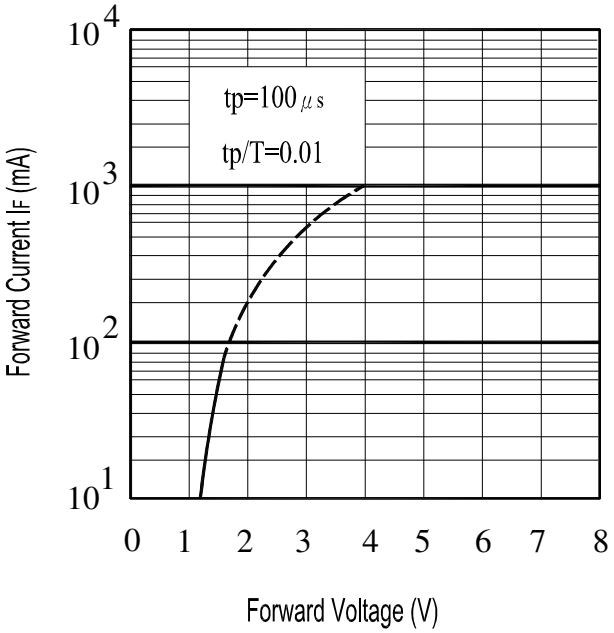


Fig.4 Forward Current vs. Forward Voltage



Typical Electro-Optical Characteristics Curves

Fig.5 Relative Intensity vs. Forward Current

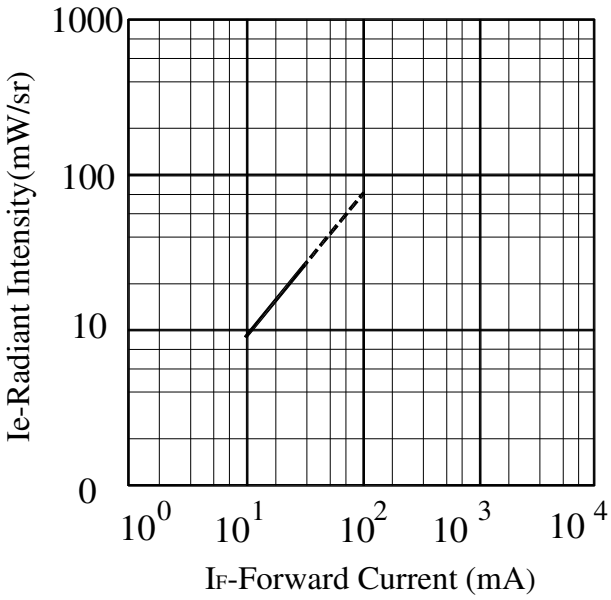
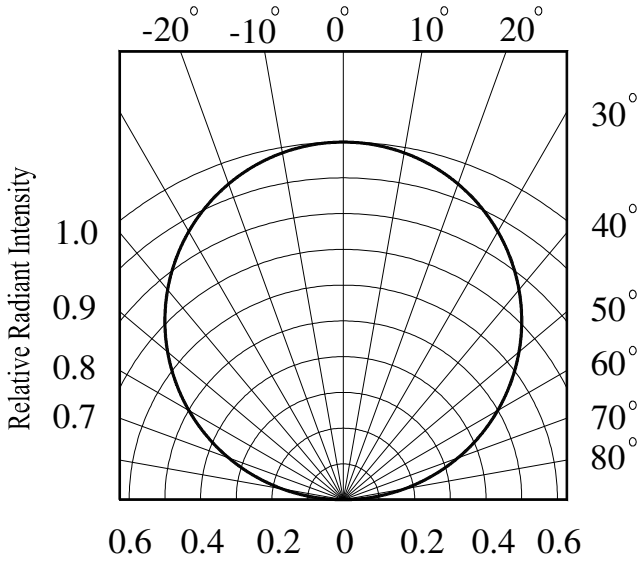


Fig.6 Relative Radiant Intensity vs. Angular Displacement



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 devices are ready to use.

2.2 Shelf life in sealed bag from the bag seal date:
18 months at 10°C~30°C and < 90% RH.

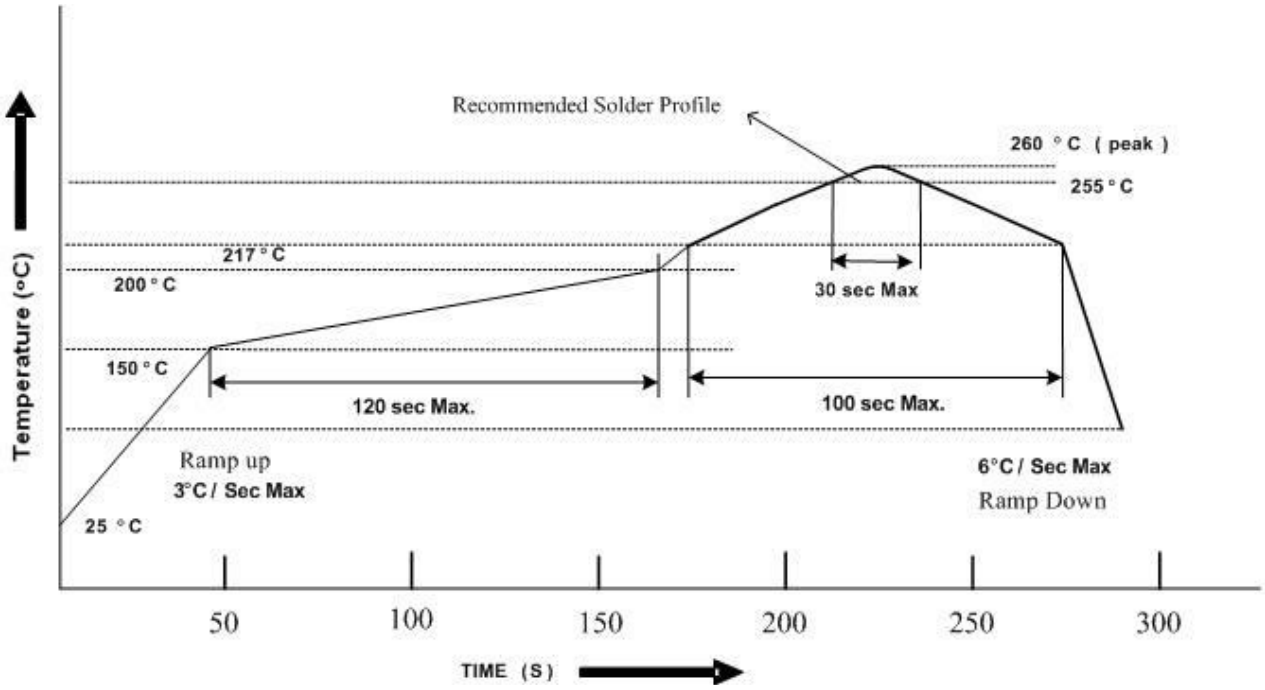
2.3 After opening the package, the devices must be stored at 10°C~30°C and ≤ 60%RH, and used within 72 hours(floor life).

2.4 If the moisture absorbent material(desiccant material) has faded or unopened bag has exceeded the shelf life or devices(out of bag) have exceeded the floor life, baking treatment is required.

2.5 If baking is required, refer to IPC/JEDEC J-STD-033 for bake procedure or recommend the following conditions :
192 hours at 40°C +5/–0°C and < 5 % RH (reeled/tubed/loose units) or
96 hours at 60°C ± 5°C and < 5 % RH (reeled/tubed/loose units) or
24 hours at 125°C ± 5°C, not suitable for reel or tubes.

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.

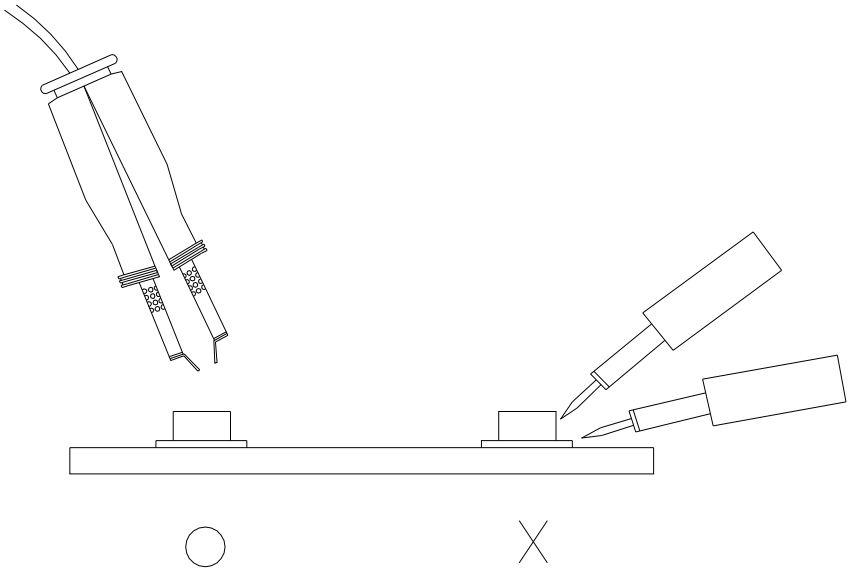
3.4 After soldering, do not warp the circuit board.

4.Soldering Iron

Each terminal is to go to the tip of soldering iron temperature less than 350℃ 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.



Reliability Test Item And Condition

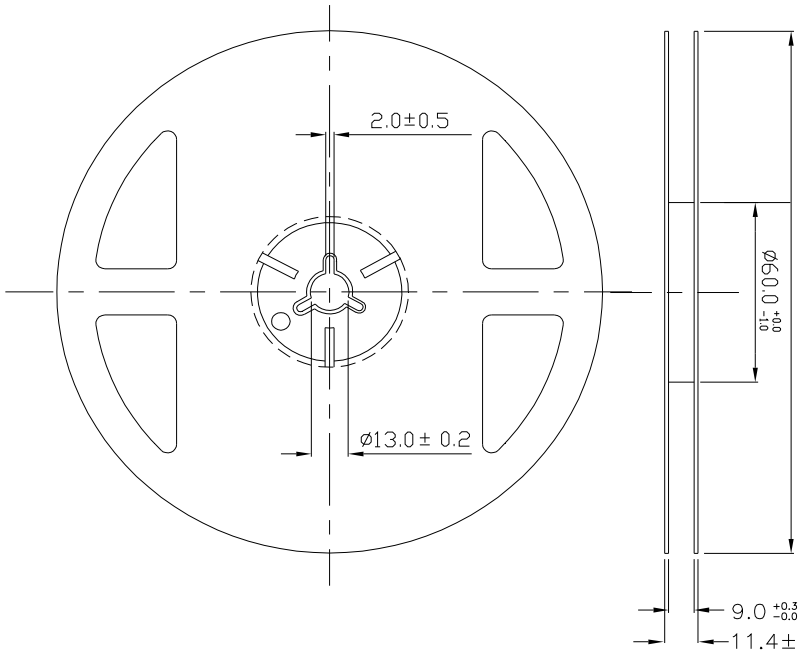
The reliability of products shall be satisfied with items listed below.

Confidence level：90%

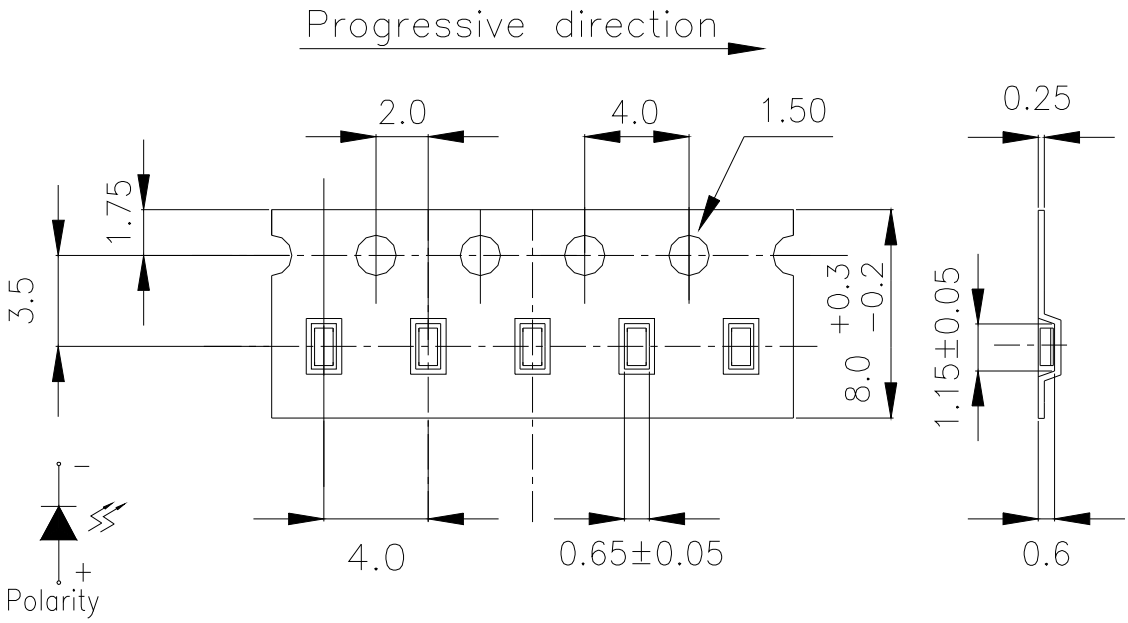
LTPD：10%

NO.	Item	Test Conditions	Test Hours/ Cycles	Sample Sizes	Failure Judgement Criteria	Ac/Re
1	REFLOW	TEMP.：260℃±5℃ 5secs	3Times	22pcs	$I_R \geqq U \times 2$ $Ie \leqq L \times 0.8$ $V_F \geqq U \times 1.2$ U：Upper Specification Limit L：Lower Specification Limit	0/1
2	Temperature Cycle	H：+100℃ 15mins ↕ 5mins L：-40℃ 15mins	0Cycles	22pcs		0/1
3	High Temperature Storage	TEMP.：+100℃	168hrs	22pcs		0/1
4	Low Temperature Storage	TEMP.：-40℃	168hrs	22pcs		0/1
5	DC Operating Life	I_F=20mA，TEMP.：+25℃	168hrs	22pcs		0/1
6	High Temperature/ High Humidity	+85℃ / 85% R.H	168hrs	22pcs		0/1

Package Dimensions



Taping Dimensions



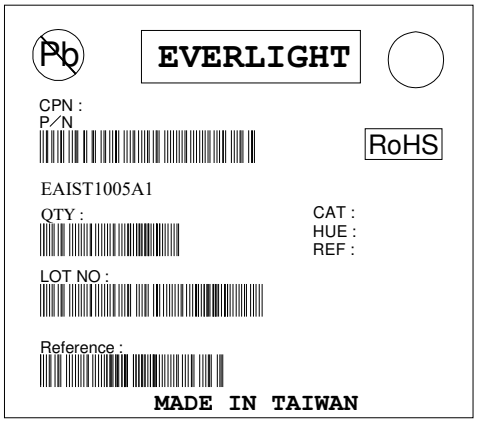
Unit:mm

Packing Quantity Specification

1.3000Pcs/1Volume，1Volume/1Bag

2.10Boxes/1Carton

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 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 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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