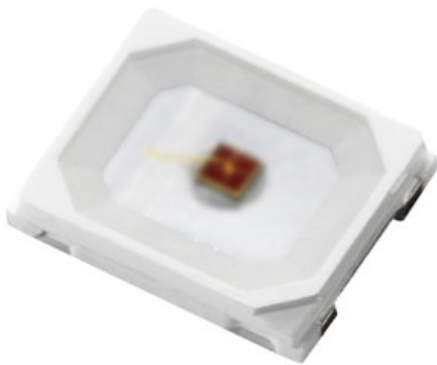


SMD ▪ PLCC EAHP2835RA1



Features

- PLCC-2 package
- Top view Red LED
- Wide viewing angle
- Pb-free
- RoHS compliant

Description

The Everlight EAHP2835RA1 package has high efficacy, Middle power consumption, wide viewing angle and a compact form factor. These features make this package an ideal LED for all lighting applications.

Applications

- Decorative and Entertainment Lighting
- Agriculture Lighting
- General use

Device Selection Guide

Chip Materials	Emitted Color	Resin Color
AlGaInP	Red	Water Clear

Absolute Maximum Ratings (T_{Soldering}=25°C)

Parameter	Symbol	Rating	Unit
Forward Current	I _F	150	mA
Peak Forward Current (Duty 1/10 @10ms)	I _{FP}	300	mA
Power Dissipation	P _d	435	mW
Operating Temperature	T _{opr}	-40 ~ +85	°C
Storage Temperature	T _{stg}	-40 ~ +100	°C
Thermal Resistance (Junction / Soldering point)	R _{th J-S}	50	°C/W
Junction Temperature	T _j	115	°C
Soldering Temperature	T _{sol}	Reflow Soldering : 260 °C for 10 sec. Hand Soldering : 350 °C for 3 sec.	

Note:

The products are sensitive to static electricity and must be carefully taken when handling products

Electro-Optical Characteristics (T_{Soldering}=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Radiometric Power	I _v	40	-----	160	mW	I _F =150mA
Forward Voltage	V _F	1.8	-----	2.9	V	I _F =150mA
Viewing Angle	2θ _{1/2}	-----	120	-----	deg	I _F =150mA
Reverse Current	I _R	-----	-----	50	μA	V _R =5V

Notes:

1. Tolerance of Radiometric Power: ±11%.
2. Tolerance of Forward Voltage: ±0.1V.

Bin Range of Radiometric Power

Bin Code	Min.	Max.	Unit	Condition
B2	40	50	mW	$I_F=150\text{mA}$
B3	50	60		
B4	60	70		
B5	70	80		
C1	80	100		
C2	100	120		
C3	120	140		
C4	140	160		

Notes:
Tolerance of Radiometric Power : $\pm 11\%$

Bin Range of Forward Voltage

Bin Code	Min.	Max.	Unit	Condition
25	1.8	1.9	V	$I_F=150\text{mA}$
26	1.9	2.0		
27	2.0	2.1		
28	2.1	2.2		
29	2.2	2.3		
30	2.3	2.4		
31	2.4	2.5		
32	2.5	2.6		
33	2.6	2.7		
34	2.7	2.8		
35	2.8	2.9		

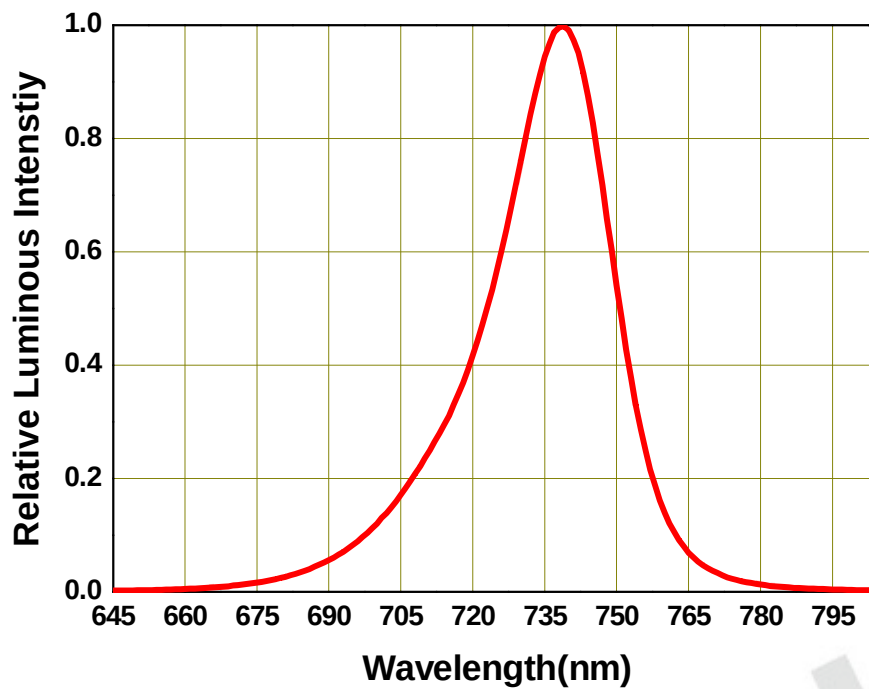
Note:
Tolerance of Forward Voltage: $\pm 0.1\text{V}$.

Peck Wavelength Bins

Bin Code	Min.	Max.	Unit	Condition
FA3	720	730	nm	$I_F=150\text{mA}$
FA4	730	740		
FA5	740	750		

Notes:
Dominant / Peak wavelength measurement tolerance: $\pm 1\text{nm}$.

Spectrum Distribution



Typical Electro-Optical Characteristics Curves

Fig.1 – Forward Voltage Shift vs. Junction Temperature

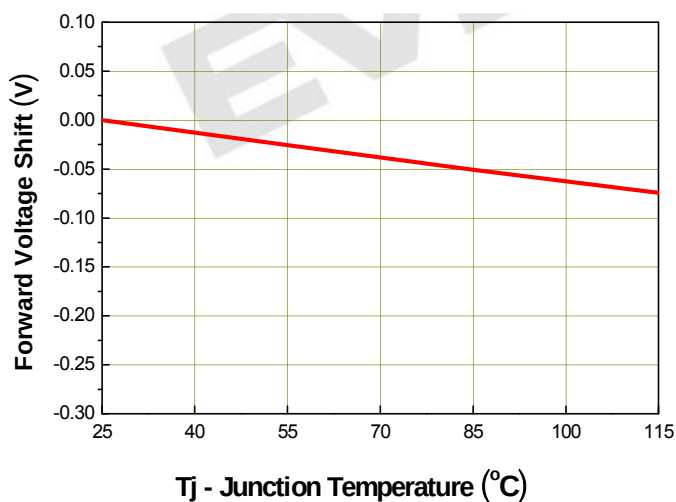
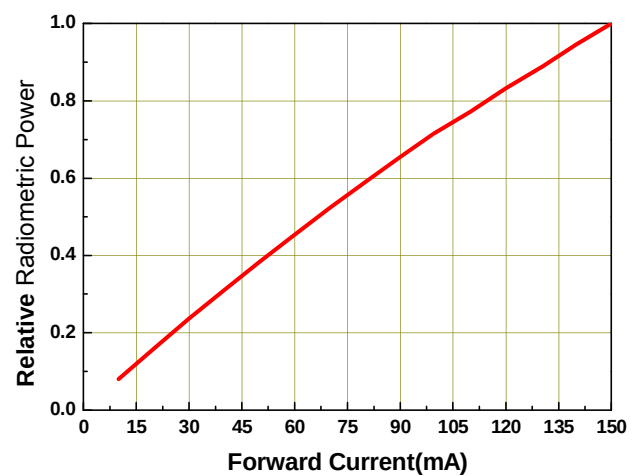


Fig.2 - Relative Radiometric Power vs. Forward Current



Typical Electro-Optical Characteristics Curves

Fig.3 - Relative Luminous Intensity vs. Junction Temperature

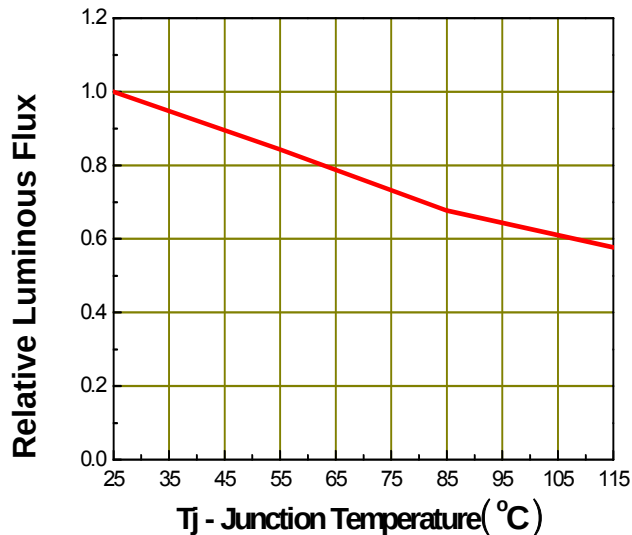


Fig.4 - Forward Current vs. Forward Voltage

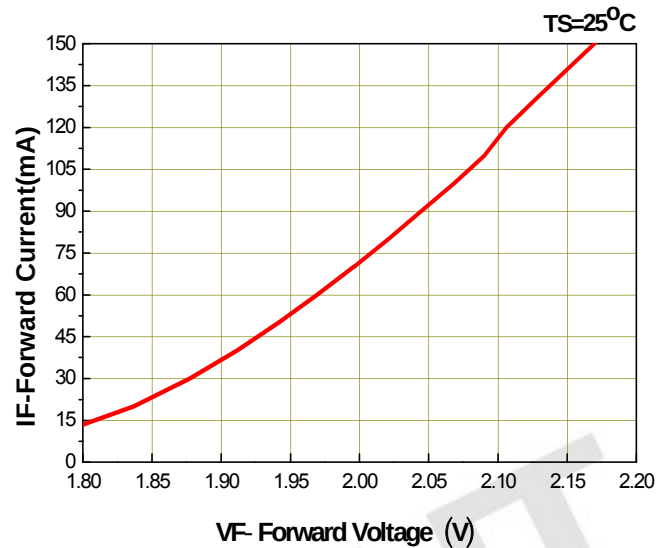


Fig.5 – Max. Driving Forward Current vs. Soldering Temperature

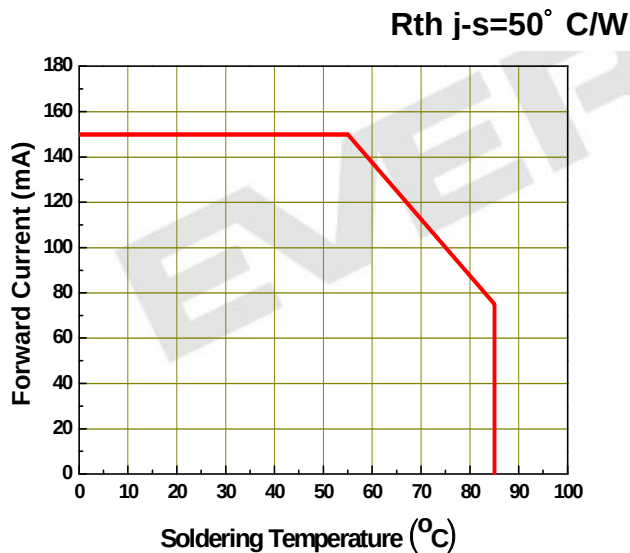
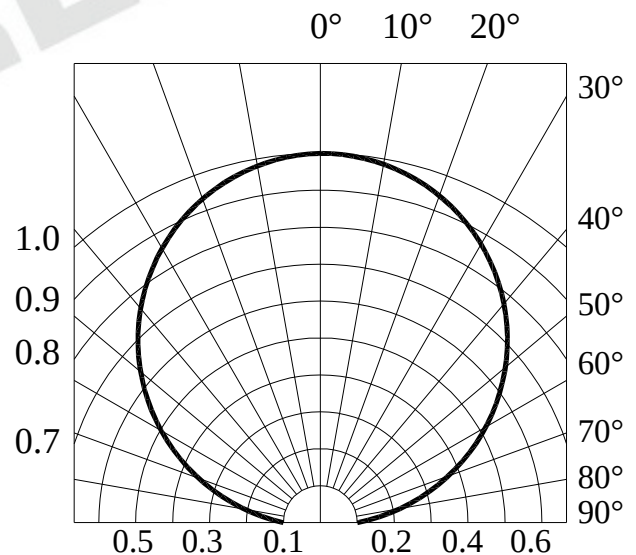


Fig.6 – Radiation Diagram



Technical drawing of a 10-pin D-sub connector. The drawing includes the following views and dimensions:

- Top View:** Shows the connector's footprint with a width of 2.8 and a length of 3.5. Pin locations are marked with circled numbers 1 and 2.
- Side View:** Shows the connector's profile with a height of 0.7.
- Bottom View:** Shows the internal layout with a width of 3.5 and a height of 2.1. Two circular mounting holes are shown, each with a diameter of 0.24. The distance between the holes is 2.0, and the distance from the left edge to the first hole is 0.9.
- Polarity Diagram:** A schematic showing the connection between pin 1 (marked with a minus sign) and pin 2 (marked with a plus sign).
- Soldering Patterns:** Two rectangular patterns for soldering. The first pattern has a width of 1.0 and a height of 2.1. The second pattern has a width of 2.1 and a height of 2.1. The distance between the patterns is 0.24.

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LifecyclePhase: Approved Expired Period: Forever

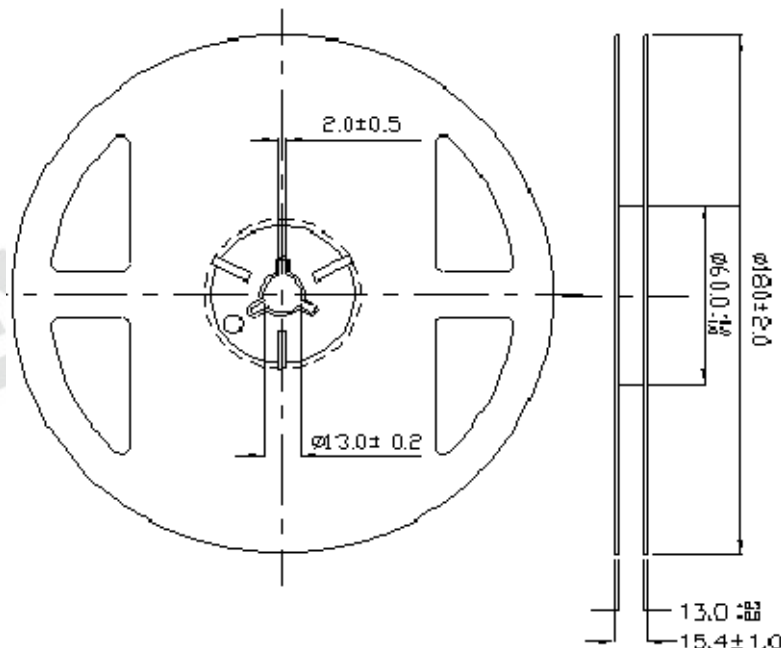
Moisture Resistant Packing Materials

Label Explanation

RoHS		EVERLIGHT	5
CPN: XXXXXXXXXXXXXXXXXXXX			
			
XXXXXXXXXX-XXXXXXXXXX-XXXXXXXXXX-XXXXXXXXXX-XXXXXX			
P/N: XXXXXXXXXXXX			
			
XXXXXXXXXX-XXXXXXXXXX-XXXXXXXXXX-XXXXXXXXXX-XXXXXX			
LOT NO: Y150716XXX-XXXXXXXXXX-XXXXXXXXXX			
			
QTY: 0123456789 HUE: XXXXXXXXXXXX			
			
CAT: XXXXXXXXXXXX REF: XXXXXXXXXXXX			
			
REFERENCE: BTPYYMDDXXXXX			
			
MSL-X			
MADE IN XXXXXX			
			

- CPN: Customer's Product Number
- P/N: Product Number
- QTY: Packing Quantity
- CAT: Luminous Intensity Rank
- HUE: Dom. Wavelength Rank
- REF: Forward Voltage Rank
- LOT No: Lot Number

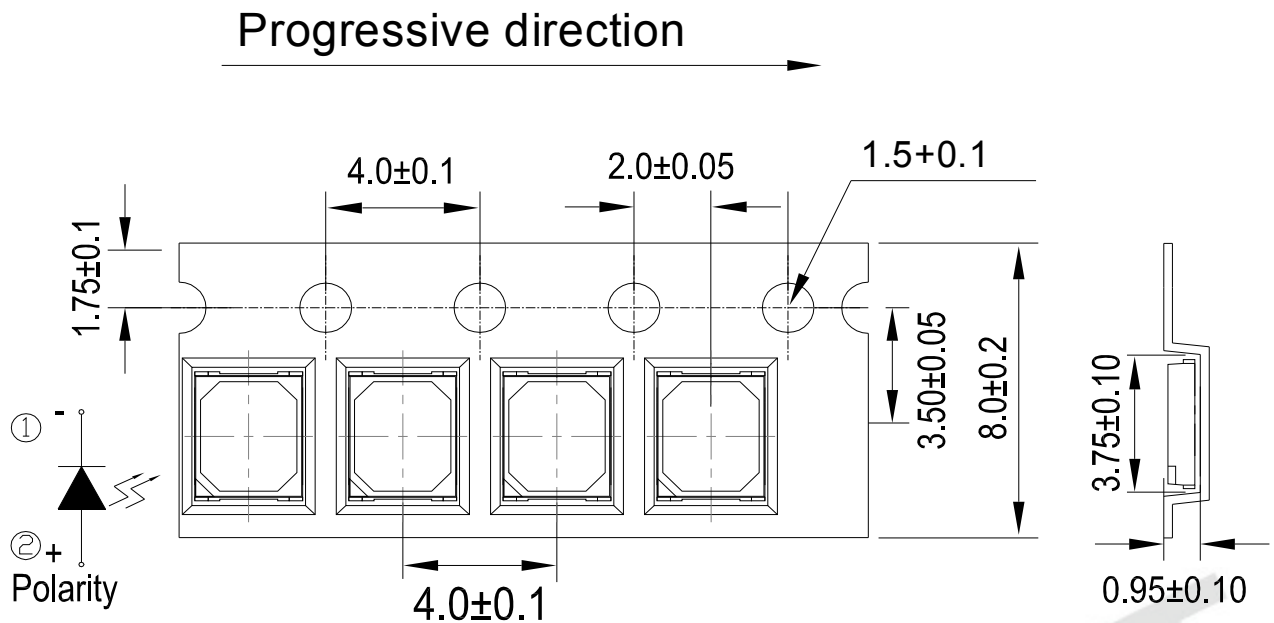
Reel Dimensions



Note:

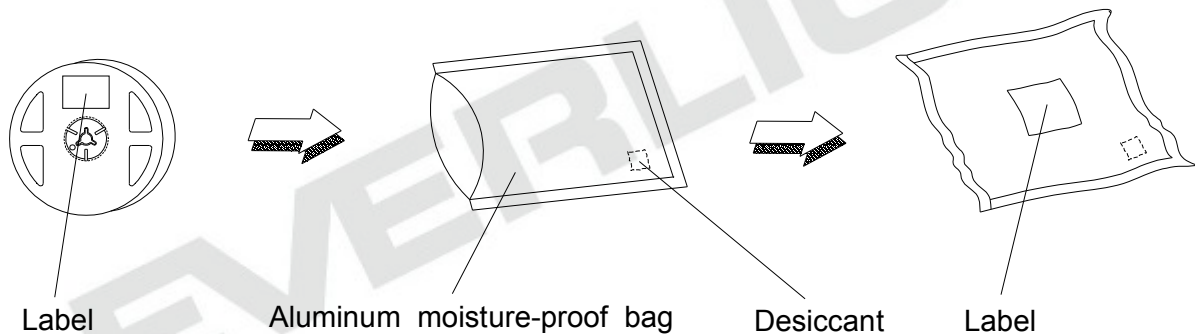
Tolerances unless mentioned ± 0.1 mm. Unit = mm

Carrier Tape Dimensions: Loaded Quantity 2000 pcs. Per Reel



Note:
Tolerance unless mentioned is ± 0.1 mm; Unit = mm

Moisture Resistant Packing Process



Reliability Test Items and Conditions

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

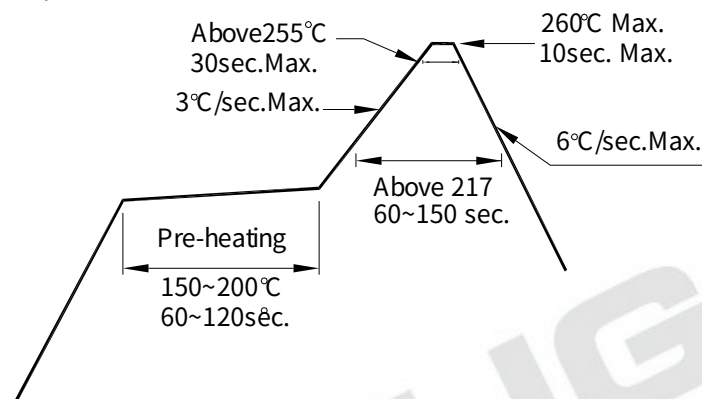
Confidence level : 90%

LTPD : 10%

No.	Items	Test Condition	Test Hours/Cycles	Sample Size	Ac/Re
1	Reflow Soldering	Temp. : 260°C/10sec.	6 Min.	22 PCS.	0/1
2	Thermal Shock	H : +100°C 20min ∫ 10 sec L : -10°C 20min	200 Cycles	22 PCS.	0/1
3	Temperature Cycle	H : +100°C 30min ∫ 5 min L : -40°C 30min	200 Cycles	22 PCS.	0/1
4	High Temperature/Humidity Storage	Ta=85°C,85%RH	1000 Hrs.	22 PCS.	0/1
5	High Temperature/Humidity Operation	Ta=85°C,85%RH, I _F = 75mA	1000 Hrs.	22 PCS.	0/1
6	Low Temperature Storage	Ta=-40°C	1000 Hrs.	22 PCS.	0/1
7	High Temperature Storage	Ta=85°C	1000 Hrs.	22 PCS.	0/1
8	Low Temperature Operation Life	Ta=-40°C, I _F = 150 mA	1000 Hrs.	22 PCS.	0/1
9	High Temperature Operation/ Life#1	Ta=25°C, I _F = 150 mA	1000 Hrs.	22 PCS.	0/1
10	High Temperature Operation/ Life#2	Ta=55°C, I _F =150mA	1000 Hrs.	22 PCS.	0/1
11	High Temperature Operation/ Life#3	Ta=85°C, I _F = 75 mA	1000 Hrs.	22 PCS.	0/1

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 After opening the package: The LED's floor life is 168 Hrs under 30°C or less and 60% RH or less. If unused LEDs remain, it should be stored in moisture proof packages.
 - 2.4 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 24 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.

