EVERLIGHT AMERICAS

DATASHEET

EAPL2812GA1



Features

- Side view LED.
- Lead frame package with individual 2 pins.
- Wide viewing angle.
- Soldering methods: IR reflow soldering.
- Pb-free.
- The product itself will remain within RoHS compliant version.

Descriptions

- Due to the package design, EAPL2812 has wide viewing angle , low power consumption and white LEDs are devices which are materialized by combing Blue LEDs and special phosphors . This feature makes the LED ideal for light guide application.

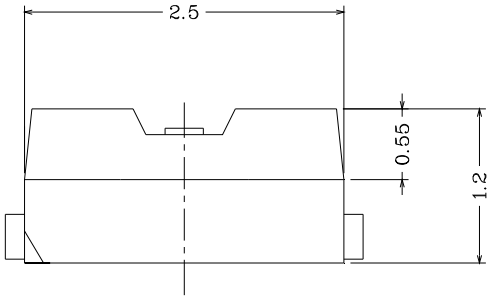
Applications

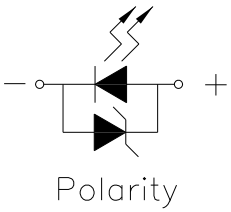
- LCD Back Light.
- Mobile phones .
- Indicators.
- Illuminations.
- Switch Lights.

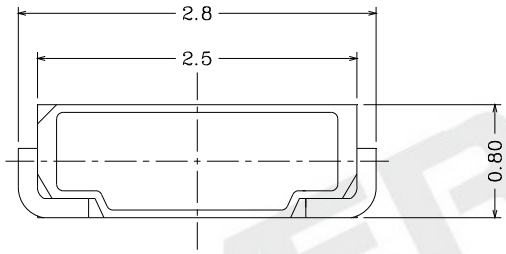
Device Selection Guide

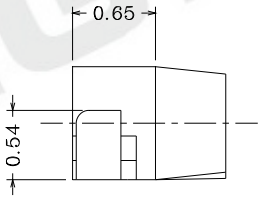
Chip Material	Emitted Color	Resin Color
InGaN	Brilliant Green	Water Clear

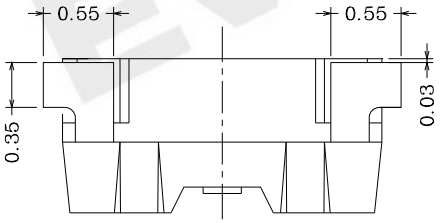
Package Outline Dimensions



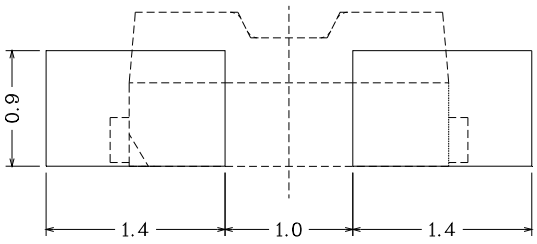








Recommended soldering pad design



Notes: Tolerances unless mentioned is ±0.1mm, Unit = mm

Absolute Maximum Ratings (Ta=25℃)

Parameter	Symbol	Rating	Unit
Reverse Voltage	V_R	5	V
Forward Current	I_F	25	mA
Peak Forward Current (Duty 1/10 @ 1KHz)	I_{FP}	100	mA
Power Dissipation	Pd	110	mW
Electrostatic Discharge(HBM)	ESD	2000	V
Operating Temperature	Topr	-40 ~ +85	℃
Storage Temperature	Tstg	-40~ +90	℃
Soldering Temperature	Tsol	Reflow Soldering : 260 ℃ for 10 sec. Hand Soldering : 350 ℃ for 3 sec.	

*The products are sensitive to static electricity and care must be fully taken when handling products.

Electro-Optical Characteristics (Ta=25℃)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Luminous Intensity	I_V	180	---	565	mcd	I_F=20mA
Viewing Angle	2 θ 1/2	-----	110	-----	deg	
Peak Wavelength	λp	-----	518	-----	nm	
Dominant Wavelength	λ d	523.5	-----	535.5	nm	
Spectrum Radiation Bandwidth	△ λ	-----	35	-----	nm	
Forward Voltage	V_F	2.95	---	3.45	V	

Notes:

1. Tolerance of Luminous Intensity: ±10%
2. Tolerance of Forward Voltage: ±0.05V
3. Tolerance of Dominant Wavelength: ±1nm

Bin Range of Luminous Intensity

Bin Code	Min.	Max.	Unit	Condition
S1	180	225	mcd	IF=20mA
S2	225	285		
T1	285	360		
T2	360	450		
U1	450	565		

Bin Range of Dominant Wavelength

Groups	Bin Code	Min.	Max.	Unit	Condition
B	B13	523.5	525.5	nm	IF=20mA
	B14	525.5	527.5		
	B15	527.5	529.5		
	B16	529.5	531.5		
	B17	531.5	533.5		
	B18	533.5	535.5		

Bin Range of Forward Voltage

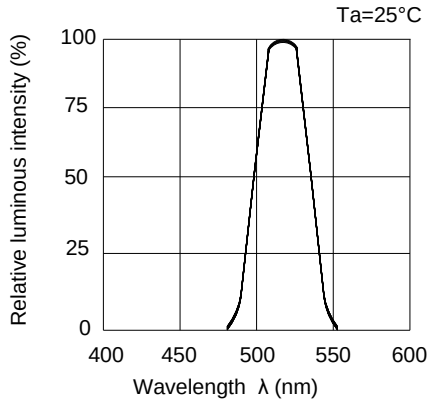
Groups	Bin Code	Min.	Max.	Unit	Condition
B21	54	2.95	3.05	V	IF=20mA
	55	3.05	3.15		
	56	3.15	3.25		
	57	3.25	3.35		
	58	3.35	3.45		

Notes:

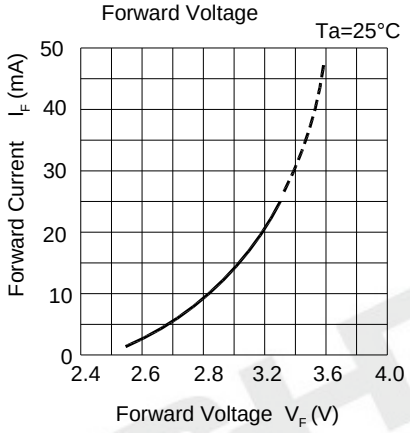
1. Tolerance of Luminous Intensity: ±10%
2. Tolerance of Forward Voltage: ±0.05V
3. Tolerance of Dominant Wavelength: ±1nm

Typical Electro-Optical Characteristics Curves

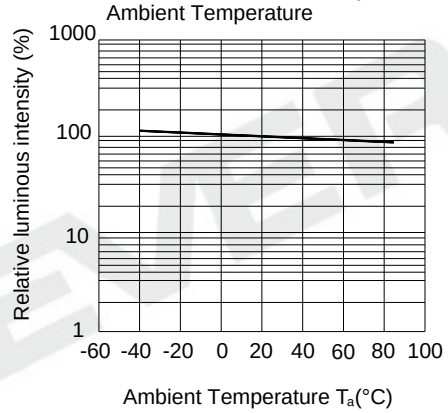
Spectrum Distribution



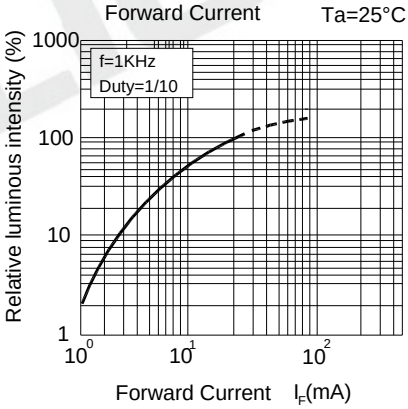
Forward Current vs. Forward Voltage

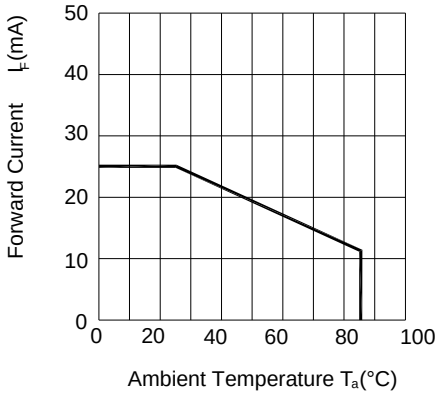


Relative Luminous Intensity vs. Ambient Temperature

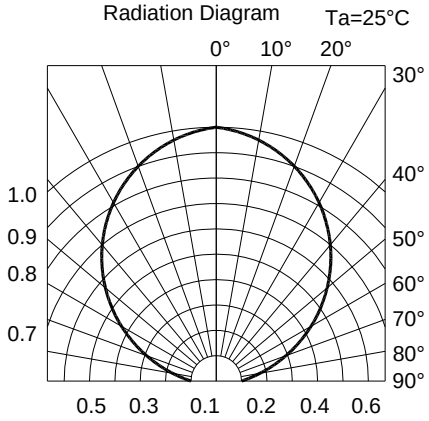


Relative Luminous Intensity vs. Forward Current





Radiation Diagram

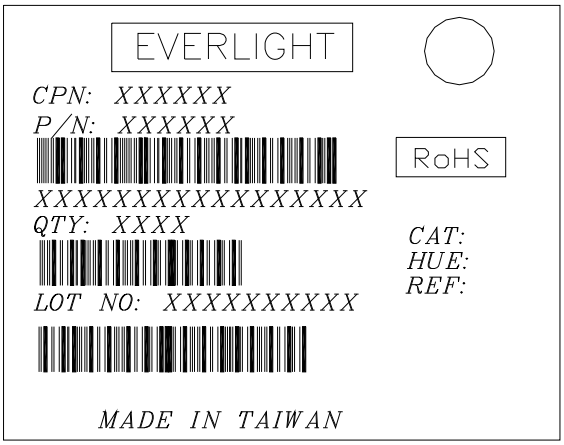


Label Explanation

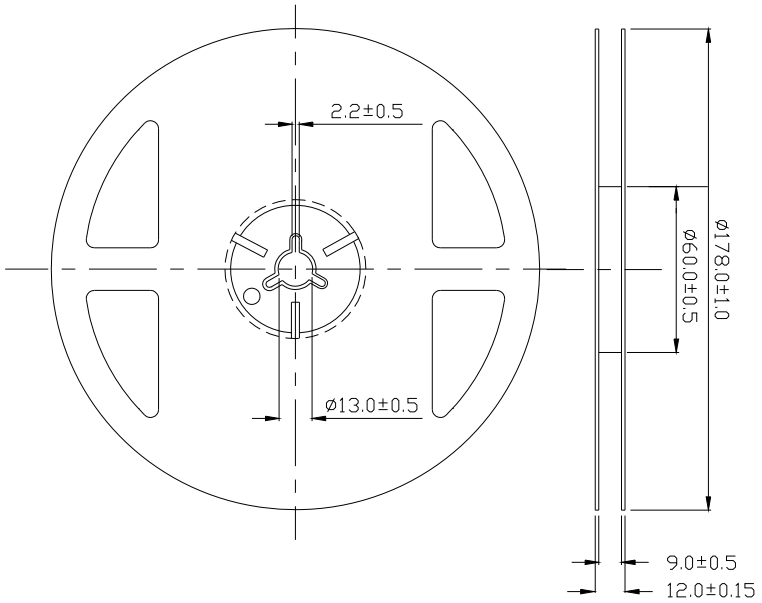
CAT: Luminous Intensity Rank

HUE: Dom. Wavelength Rank

REF: Forward Voltage Rank

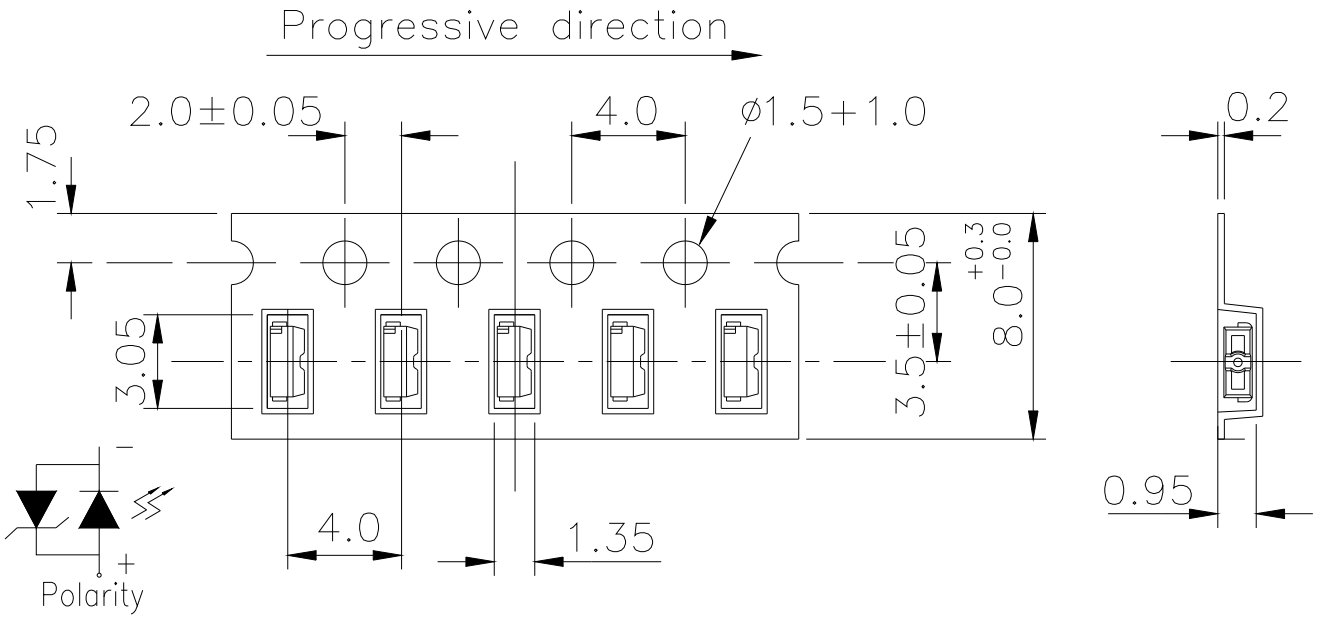


Reel Dimensions



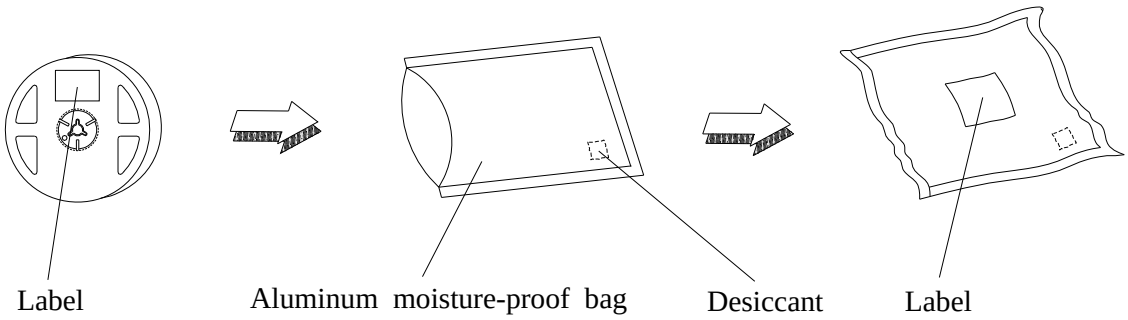
Note: Tolerance unless mentioned is ±0.1mm; Unit = mm

Carrier Tape Dimensions; Loaded Quantity 2000 pcs Per Reel



Note: Tolerances Unless Dimension ±0.1mm; Unit = mm

Moisture Resistant Packaging



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℃±5℃ Max. 10 sec.	6 Min.	22 PCS.	0/1
2	Temperature Cycle	H : +100℃ 15min ∫ 5 min L : -40℃ 15min	300 Cycles	22 PCS.	0/1
3	Thermal Shock	H : +100℃ 5min ∫ 10 sec L : -10℃ 5min	300 Cycles	22 PCS.	0/1
4	High Temperature Storage	Temp. : 100℃	1000 Hrs.	22 PCS.	0/1
5	Low Temperature Storage	Temp. : -40℃	1000 Hrs.	22 PCS.	0/1
6	DC Operating Life	I_F = 20 mA / 25℃	1000 Hrs.	22 PCS.	0/1
7	High Temperature / High Humidity	85℃/85%RH	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.

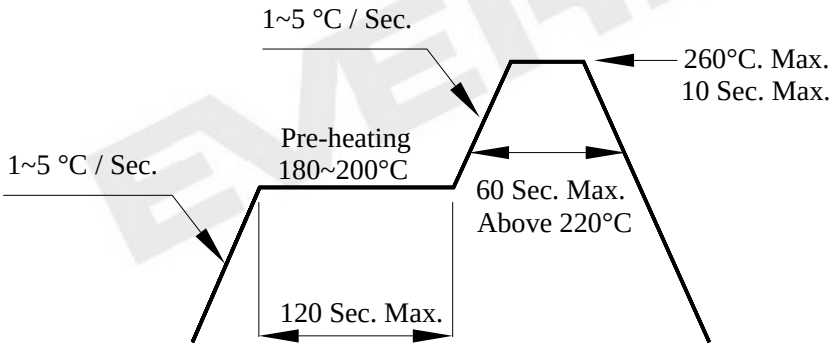
   2.2 Before opening the package: The LEDs should be kept at 30℃ or less and 90%RH or less.

   2.3 After opening the package: The LED's floor life is 1 year under 30℃ 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℃ 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.

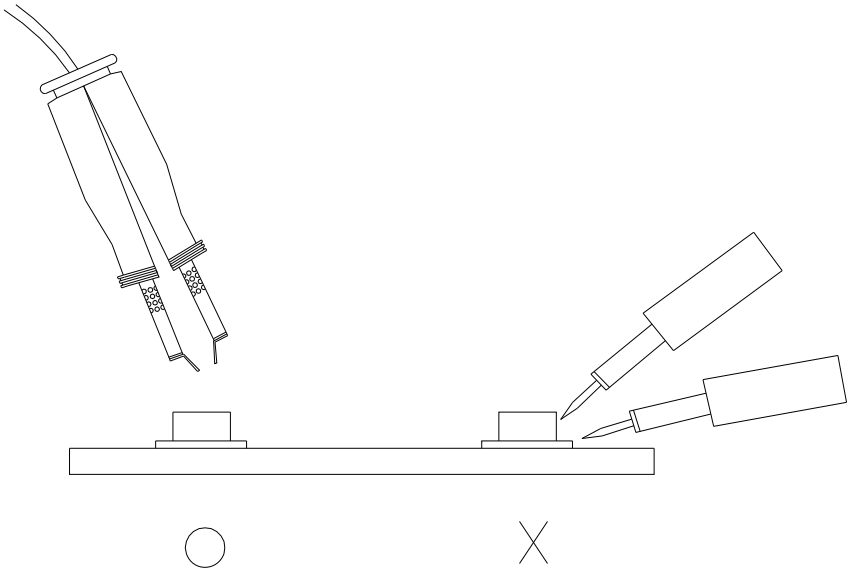
   3.4 After soldering, do not warp the circuit board.

4. Soldering Iron

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



6. Handling Indications

During processing, mechanical stress on the surface should be minimized as much as possible. Sharp objects of all types should not be used to pierce the sealing compound