Top View LED
EAPL2214RA2

Features

- White SMT package.
- Optical indicator.
- Wide viewing angle.
- Soldering methods: IR reflow soldering
- Available on tape and reel
- Pb-free
- The product itself will remain within RoHS compliant version.

Descriptions

The EAPL2214RA2 series is available in soft orange, green, blue, and yellow. Due to the package design, the LED has wide viewing angle and optimized light coupling by inter reflector. Besides, LED is mounted top down and emits through the PCB. This feature makes the LED ideal for light pipe application.

Applications

- Optical indicators.
- Coupling into light guides.
- Backlighting (LCD, cellular phones, switches, keys, displays, illuminated advertising, general lighting).
- Coupling into light guides; Interior automotive lighting (e.g. dashboard backlighting, etc.).

Device Selection Guide

Chip		Emitted Color	Resin Color
Supplier	**Material**		
Epistar	AlGaInP	Reddish Orange	Water Clear

Note:

No changes in supplier of die and in die manufacturer processes/references for specific MEI LEDs are permitted without prior written by MEI authorization.

Absolute Maximum Ratings (Ta=25℃)

Parameter	Symbol	Rating	Unit
Reverse Voltage	V_R	5	V
Forward Current	I_F	50	mA
Peak Forward Current*	I_{FP}	150	mA
Power Dissipation	Pd	110	mW
Electrostatic Discharge(HBM)	ESD	2000	V
Junction Temperature	Tj	110	℃
Operating Temperature	Topr	-25 ~ +70	℃
Storage Temperature	Tstg	-40 ~ +100	℃
Soldering Temperature	Tsol	Reflow Soldering: 260 ℃ for 10 sec. Hand Soldering : 350 ℃ for 3 sec.	

* I_{FP} Condition—Tp=100 μs, duty cycle=10%, Ta=70℃

Electro-Optical Characteristics (Ta=25℃)

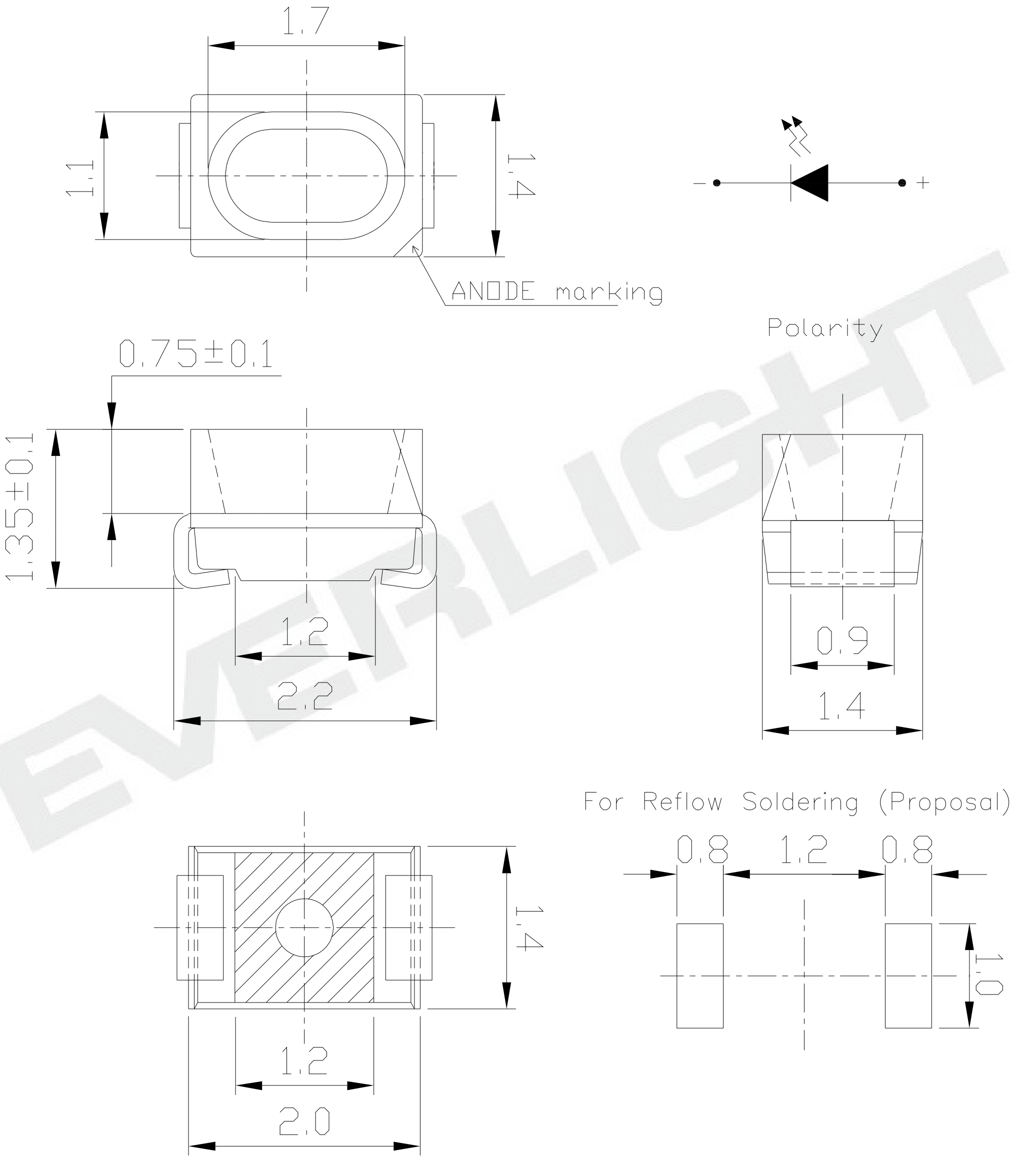
Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Radiant intensity*^{1}	Ie	1.2	------	2.8	mW/sr	I_F=20mA
Viewing Angle	2θ1/2	-----	120	-----	deg	
Centroid Wavelength*^{2}	λc	617	-----	627	nm	
Spectrum Radiation Bandwidth	Δλ	-----	20	-----	nm	
Forward Voltage	V_F	1.8	-----	2.4	V	
Reverse Current	I_R	-----	-----	100	μA	V_R=5V

*$_1$ Tp=20ms; condition B of CIE.
*$_2$ Tp=20ms; scan range = 550nm~700nm.

Notes:

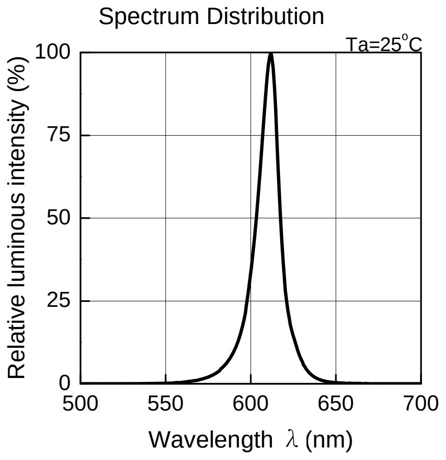
1. Tolerance of Radiant Intensity: ±11%
2. Tolerance of Centroid Wavelength: ±1nm
3. Tolerance of Forward Voltage: ±0.1V

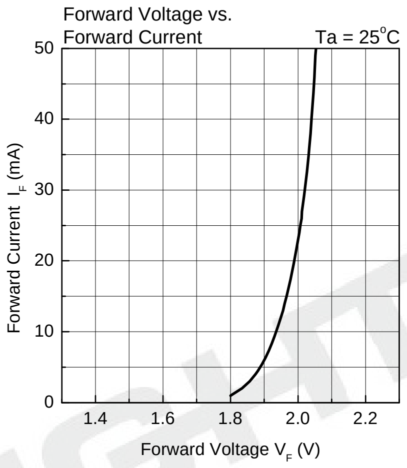
Package Outline Dimensions

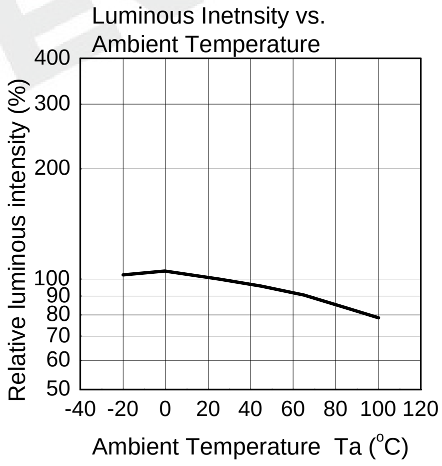


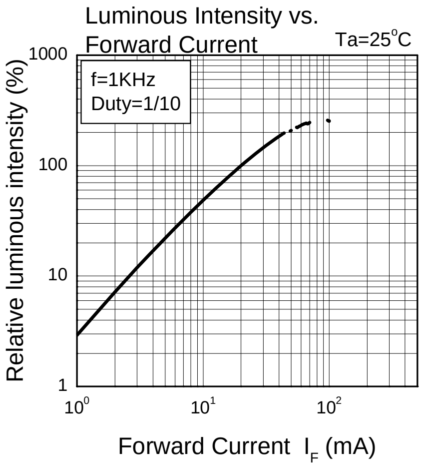
Note: Tolerance unless mentioned is ±0.1mm; Unit = mm

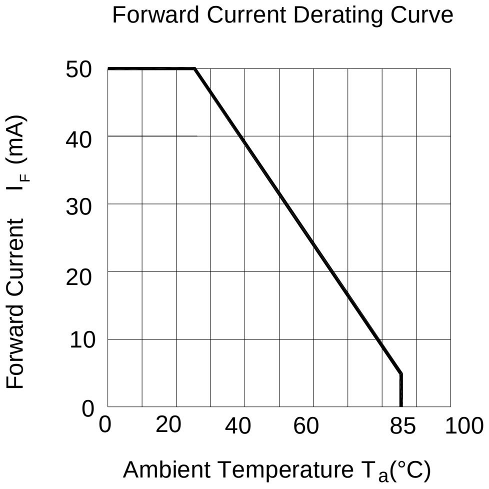
Typical Electro-Optical Characteristics Curves

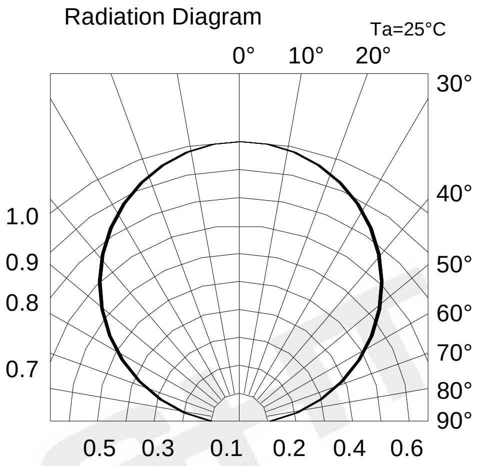


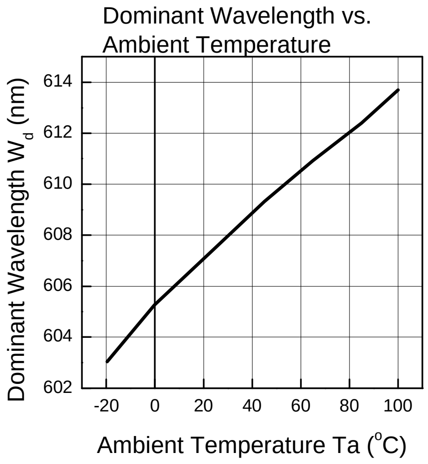







Forward Current Derating Curve


Radiation Diagram


Dominant Wavelength vs. Ambient Temperature

EAPL2214RA2

Label Explanation

CAT: Luminous Intensity Rank

HUE: Dom. Wavelength Rank

REF: Forward Voltage Rank

Pb

EVERLIGHT

CPN :
P/N : XXXXXXXXXXXXX
XXXXXXXXXXXXX

RoHS

QTY : XXX

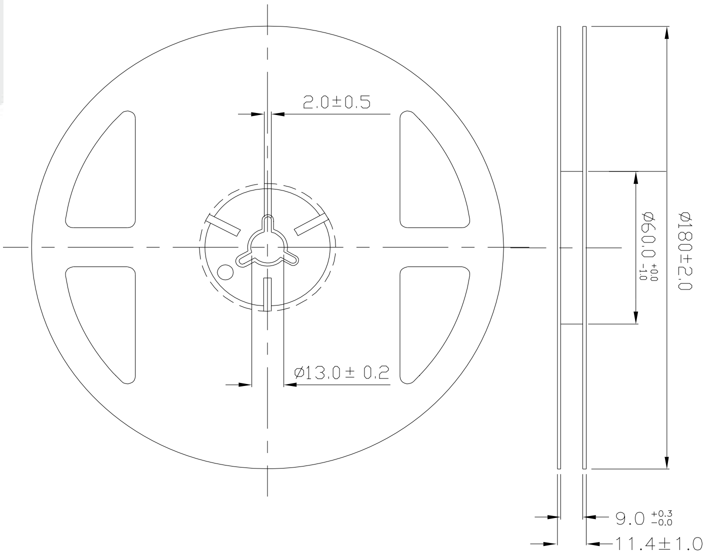
CAT : XXX
HUE : XXX
REF : XXX

LOT NO : XXXXXXXXXX

Reference : XXXXXXXX

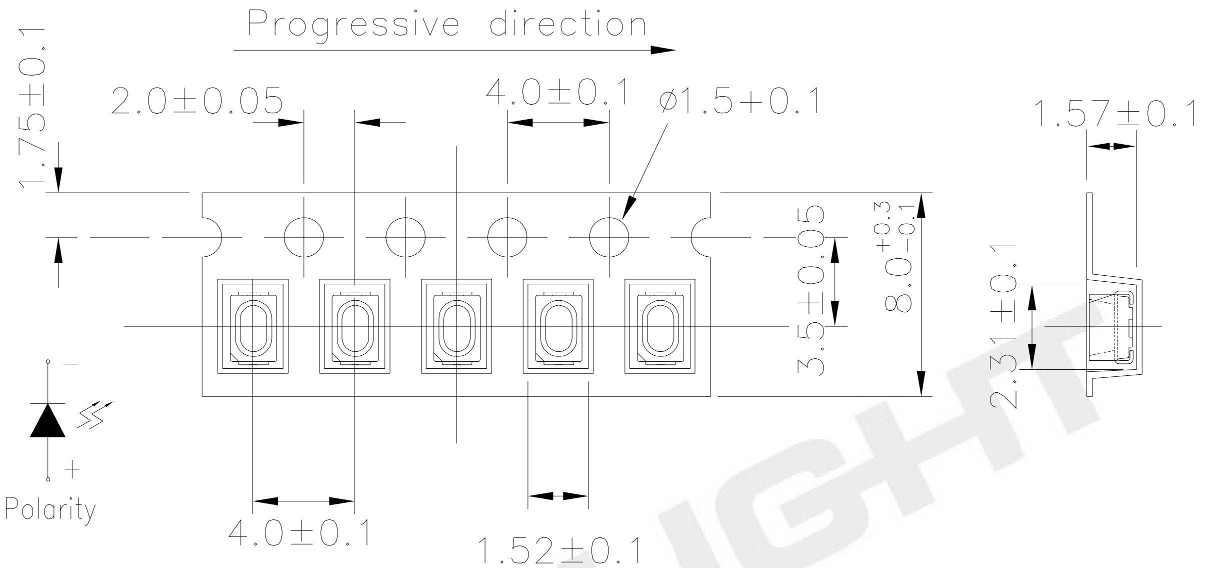
MADE IN TAIWAN

Reel Dimensions



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

Carrier Tape Dimensions: Loaded Quantity 2000 pcs Per Reel



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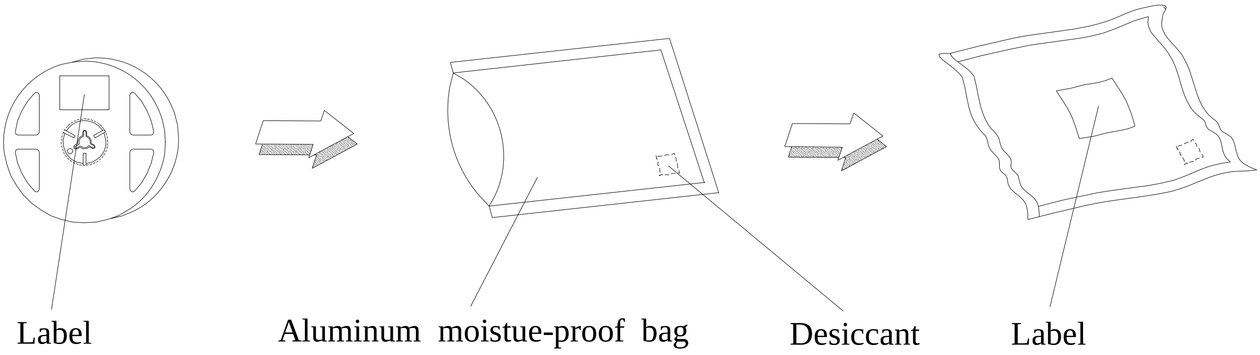
Moisture Resistant Packaging



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℃ Min. 10sec.	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	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.

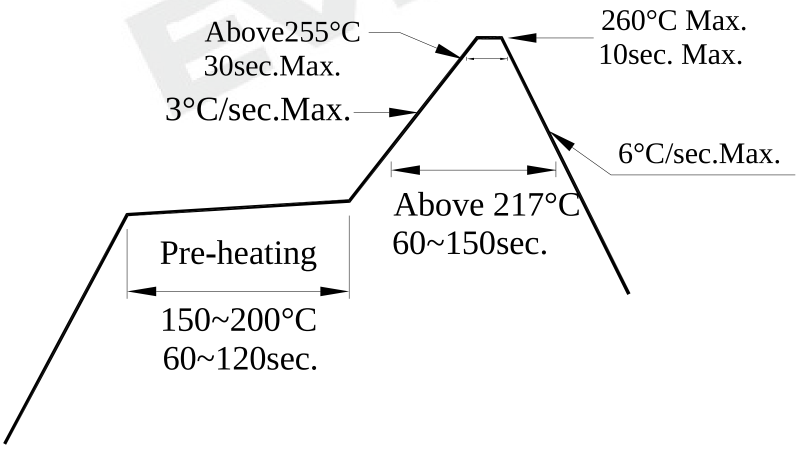
   2.2 Before opening the package: The LEDs should be kept at 30℃ or less and 90%RH or less.

   2.3 After opening the package: The LED's floor life is 168hrs 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.