

Mini Top View LEDs EAPL2214GA0

PRELIMINARY



Features

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

Applications

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

Device Selection Guide

| Chip Materials | Emitted Color | Resin Color |
|----------------|------------------------|-------------|
| AlGaInP | Brilliant Yellow Green | Water Clear |

Absolute Maximum Ratings (Ta=25°C)

| Parameter | Symbol | Rating | Unit |
|---------------------------------------|---------------|---|------|
| Reverse Voltage | V_R | 12 | V |
| Forward Current | I_F | 30 | mA |
| Power Dissipation | P_d | 84 | mW |
| Junction Temperature | T_j | 125 | °C |
| Operating Temperature | T_{opr} | -40 ~ +85 | °C |
| Storage Temperature | T_{stg} | -40 ~ +80 | °C |
| Thermal Resistance | $R_{th\ J-A}$ | 500 | K/W |
| | $R_{th\ J-S}$ | 300 | K/W |
| ESD (Classification acc. AEC Q101) | ESD_{HBM} | 500 | V |
| | ESD_{MM} | 200 | V |
| Soldering Temperature | T_{sol} | Reflow Soldering : 260 °C for 30 sec. Hand Soldering : 350 °C for 3 sec. | |

Electro-Optical Characteristics (Ta=25°C)

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Condition |
|---|-----------------------------|-------|-------|-------|------|----------------------|
| Luminous Intensity | Iv | 35.5 | ----- | 90 | mcd | I _F =20mA |
| Viewing Angle | 2θ _{1/2} | ----- | 120 | ----- | deg | I _F =20mA |
| Peak Wavelength | λ _p | ----- | 575 | ----- | nm | I _F =20mA |
| Dominant Wavelength | λ _d | ----- | ---- | ----- | nm | I _F =20mA |
| Spectrum Radiation Bandwidth | Δλ | ----- | 15 | ----- | nm | I _F =20mA |
| Forward Voltage | V _F | 1.75 | ---- | 2.8 | V | I _F =20mA |
| Reverse Current | I _R | ----- | ----- | 10 | μA | V _R =12V |
| Temperature coefficient of λ _p | TC _{λ_p} | --- | 0.06 | --- | nm/K | I _F =20mA |
| Temperature coefficient of λ _d | TC _{λ_d} | --- | 0.4 | --- | nm/K | I _F =20mA |
| Temperature coefficient of VF | TC _V | --- | -2.3 | --- | mV/K | I _F =20mA |

Note:

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

Bin Range of Luminous Intensity

| Bin Code | Min. | Max. | Unit | Condition |
|----------|------|------|------|----------------------|
| N2 | 35.5 | 45 | mcd | I _F =20mA |
| P1 | 45 | 57 | | |
| P2 | 57 | 72 | | |
| Q1 | 72 | 90 | | |

Note: Tolerance of Luminous Intensity: ±11%

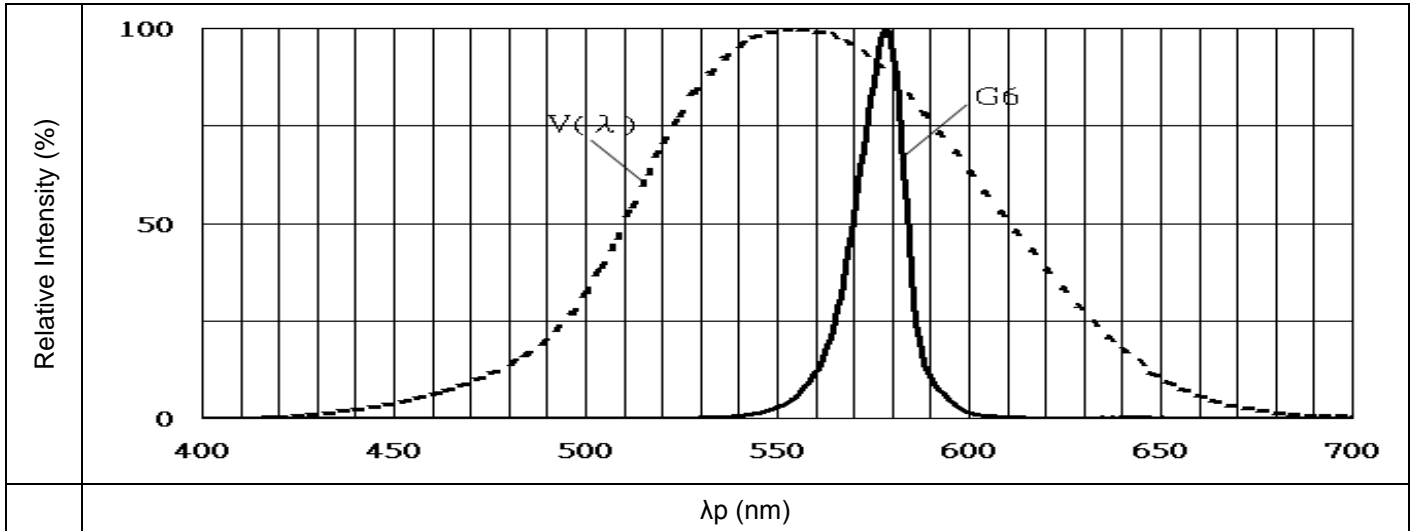
Bin Range of Dominant Wavelength

| Group | Bin Code | Min. | Max. | Unit | Condition |
|-------|----------|-------|-------|------|----------------------|
| A | C16 | 569.5 | 571.5 | nm | I _F =20mA |
| | C17 | 571.5 | 573.5 | | |
| | C18 | 573.5 | 575.5 | | |
| | C19 | 575.5 | 577.5 | | |

Note: Tolerance of Dominant Wavelength: ±1nm

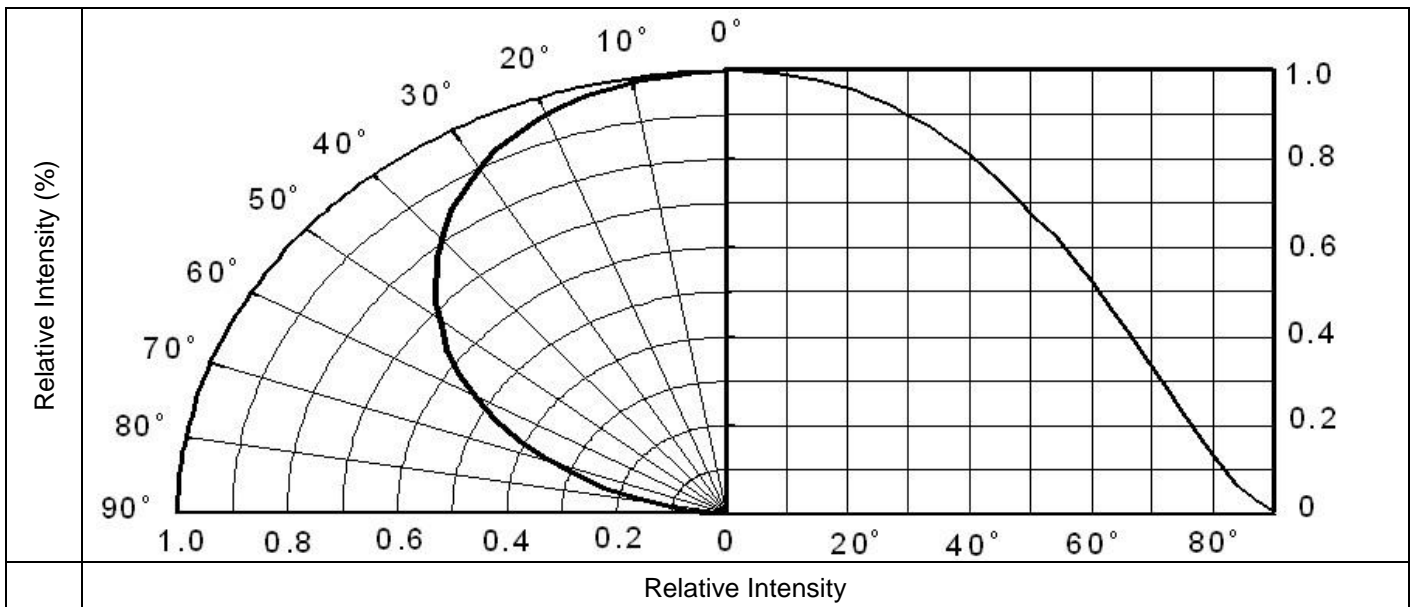
Typical Electro-Optical Characteristics Curves

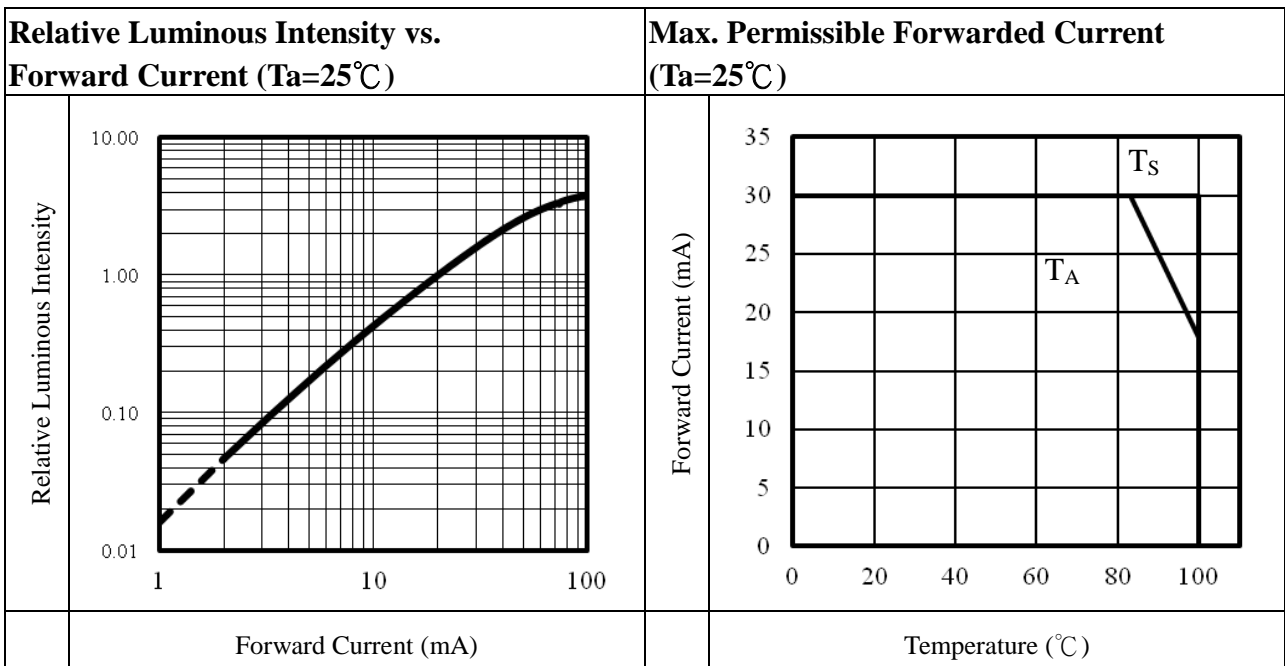
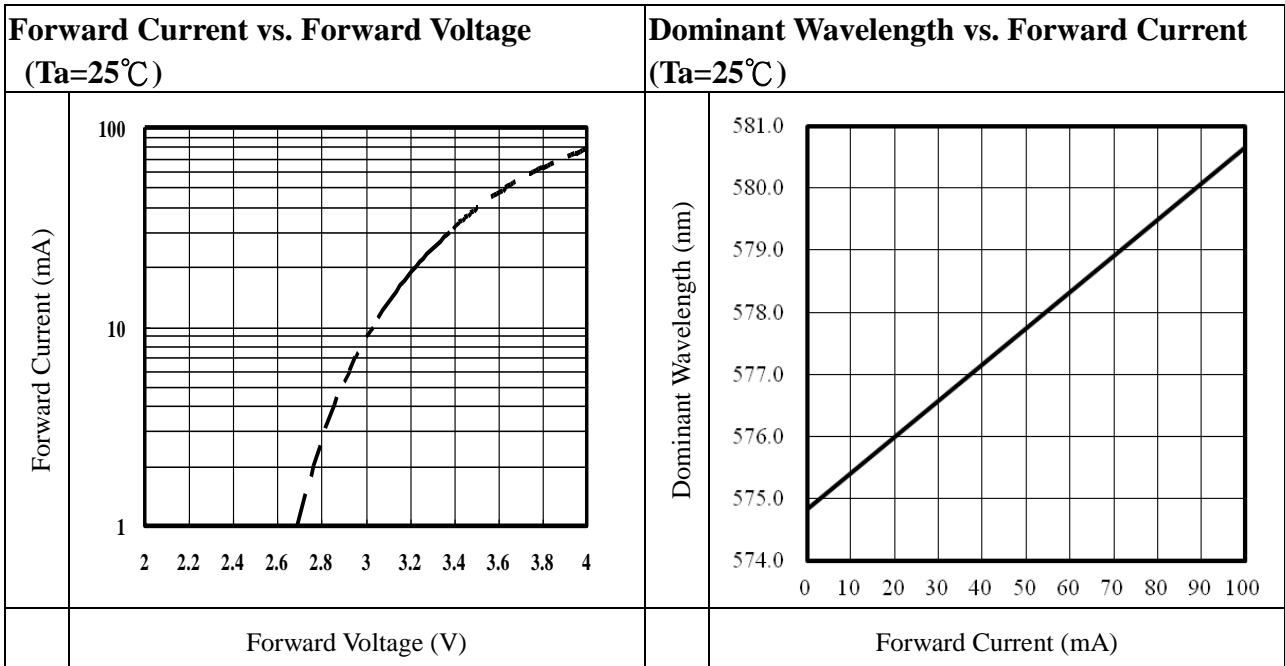
Typical Curve of Spectral Distribution



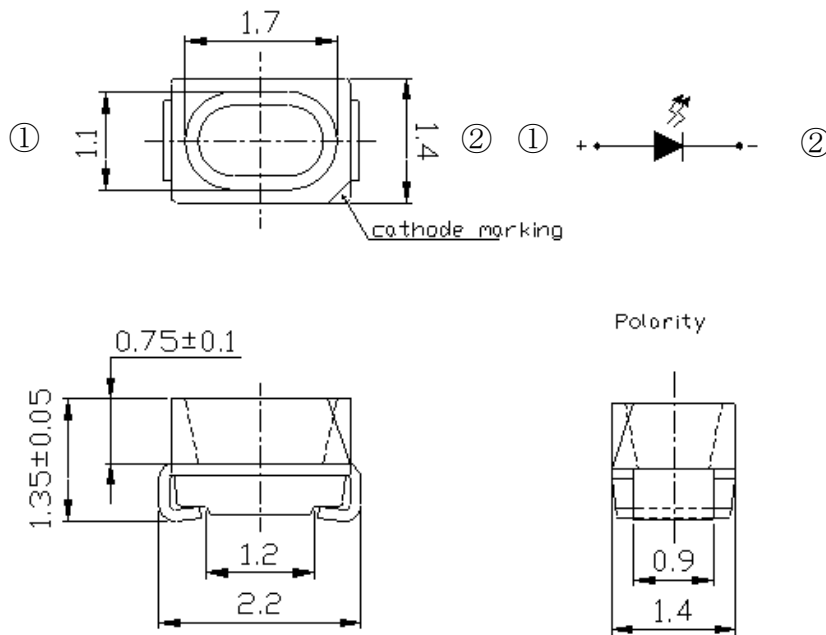
Note: $V(\lambda)$ =Standard eye response curve;

Diagram Characteristics of Radiation





Package Dimension



Note: Tolerances unless mentioned ±0.1mm. Unit = mm

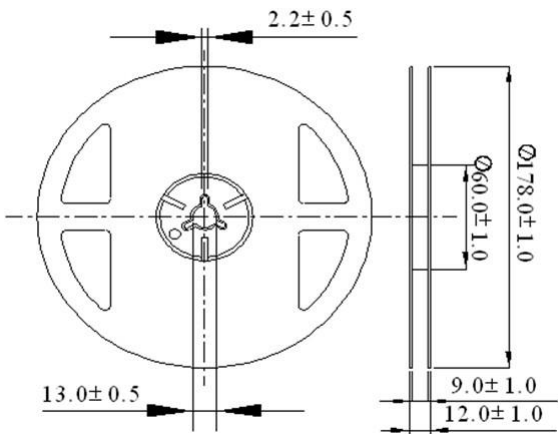
Moisture Resistant Packing Materials

Label Explanation

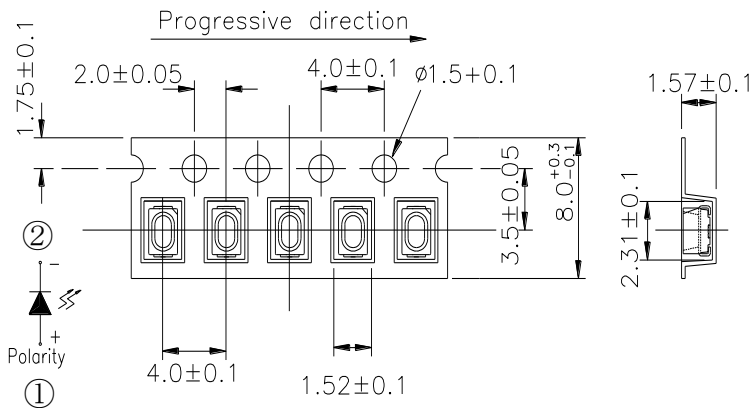


- CPN: Customer's Product Number
- P/N: Product Number
- QTY: Packing Quantity
- CAT: Luminous Intensity Rank
- HUE: Dom. Wavelength Rank
- REF: Forward Voltage Rank
- LOT No: Lot Number

Reel Dimensions

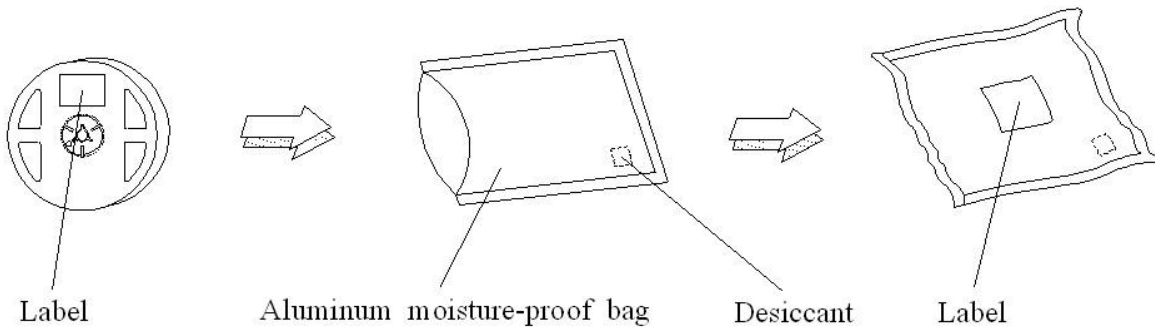


Carrier Tape Dimensions: Loaded Quantity 3000 pcs Per Reel



Note: Tolerances unless mentioned ± 0.1 mm. Unit = mm

Moisture Resistant Packing Process

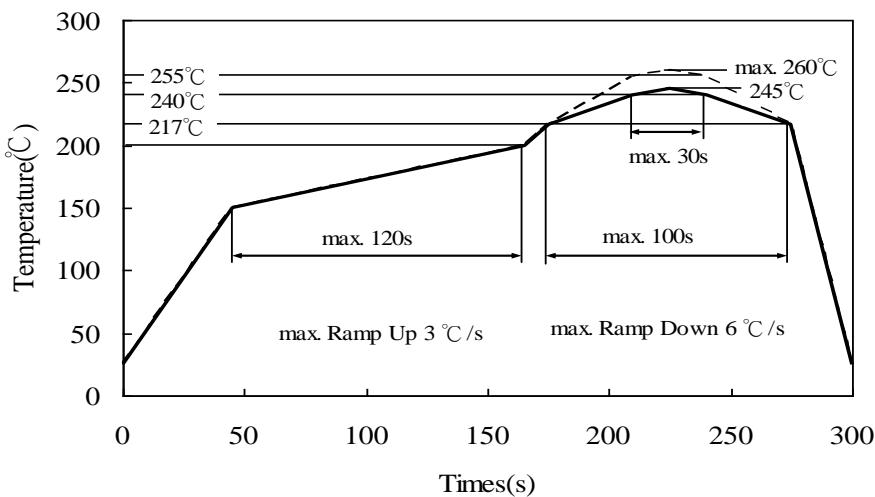


Note: Tolerances unless mentioned $\pm 0.1\text{mm}$. Unit = mm

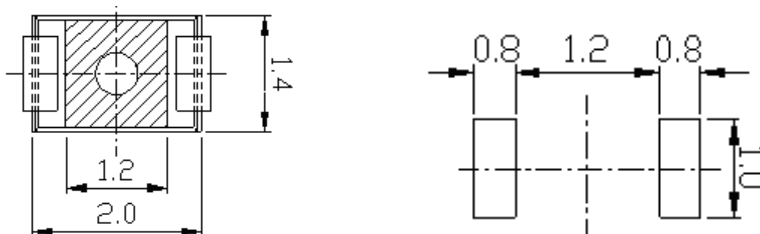
Precautions for Use

1. Soldering Condition

1.1 (A) Maximum Body Case Temperature Profile for evaluation of Reflow Profile



1.2 (B) Recommend soldering pad



Note: Tolerances unless mentioned $\pm 0.1\text{mm}$. Unit = mm

2. Current limiting

A resistor should be used to limit current spikes that can be caused by voltage fluctuations. Otherwise damage could occur.

3. Storage

3.1 Moisture proof bag should only be opened immediately prior to usage.

3.2 Environment should be less than 30°C and 60% RH when moisture proof bag is opened.

3.3 After opening the package MSL Conditions stated on page 1 of this spec should not be exceeded.

3.4 If the moisture sensitivity card indicates higher than acceptable moisture, the component should be baked at min. 60deg +/-5deg for 24 hours.

4. Iron Soldering

Hand soldering is not recommended for regular production. These guidelines are for rework only. Soldering iron tip should contact each terminal no more than 3 sec at 350°C, using soldering iron with nominal power less than 25W. Allow min. 2 sec. between soldering intervals.

5. Usage

Do not exceed the values given in this specification.