

SMD ■ Top View LEDs EAPL3527YA0-AM

PRELIMINARY



Features

- P-LCC-2 package.
- Colorless clear resin.
- Wide viewing angle 120°.
- Inner reflector and white package.
- Brightness: 450 to 710 mcd at 20mA.
- Precondition: Bases on JEDEC J-STD 020D Level 3.
- Qualification according to AEC-Q101 rev C.
- Automotive reflow profile (IR reflow or wave soldering)

Applications

- Automotive backlighting or indicator: Dashboard, switch, audio and video equipments...etc.
- Backlight: LCD, switches, symbol, mobile phone and illuminated advertising.
- Display for indoor and outdoor application.
- Ideal for coupling into light guides.
- Substitution of traditional light.
- Optical indicator.
- General applications.

Device Selection Guide

Chip Materials	Emitted Color	Resin Color
AlGaInP	Brilliant Yellow	Water Clear

Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Rating	Unit
Reverse Voltage	V_R	5	V
Forward Current	I_F	50	mA
Peak Forward Current (Duty 1/10 @1KHz)	I_{FP}	100	mA
Power Dissipation	P_d	95	mW
Junction Temperature	T_j	125	°C
Operating Temperature	T_{opr}	-40 ~ +100	°C
Storage Temperature	T_{stg}	-40 ~ +110	°C
Thermal resistance	$R_{th\ J-A}$	500	K/W
	$R_{th\ J-S}$	300	K/W
ESD (Classification acc. AEC Q101)	ESD_{HBM}	2000	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	I_v	450	---	710	mcd	$I_F=20\text{mA}$
Viewing Angle	$2\theta_{1/2}$	---	120	---	deg	$I_F=20\text{mA}$
Peak Wavelength	λ_p	---	591	---	nm	$I_F=20\text{mA}$
Dominant Wavelength	λ_d	588	---	594	nm	$I_F=20\text{mA}$
Spectrum Radiation Bandwidth	$\Delta\lambda$	---	15	---	nm	$I_F=20\text{mA}$
Forward Voltage	V_F	1.7	---	2.6	V	$I_F=20\text{mA}$
Reverse Current	I_R	---	---	10	μA	$V_R=5\text{V}$

Note:

1. Tolerance of Luminous Intensity: $\pm 11\%$
2. Tolerance of Dominant Wavelength: $\pm 1\text{nm}$
3. Tolerance of Forward Voltage: $\pm 0.1\text{V}$

Bin Range of Luminous Intensity

Bin Code	Min.	Max.	Unit	Condition
U1	450	560	mcd	$I_F = 20\text{mA}$
U2	560	710		

Note:

Tolerance of Luminous Intensity: $\pm 11\%$

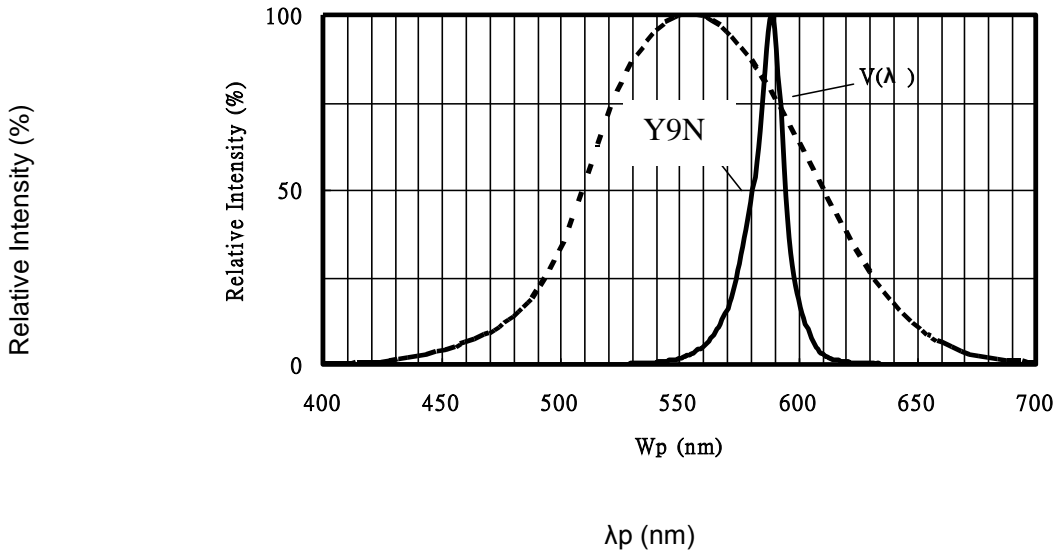
Bin Range of Dominant Wavelength

Bin Code	Min.	Max.	Unit	Condition
1	588	591	nm	I _F =20mA
2	591	594		

Note:
Tolerance of Dominant Wavelength: ±1nm

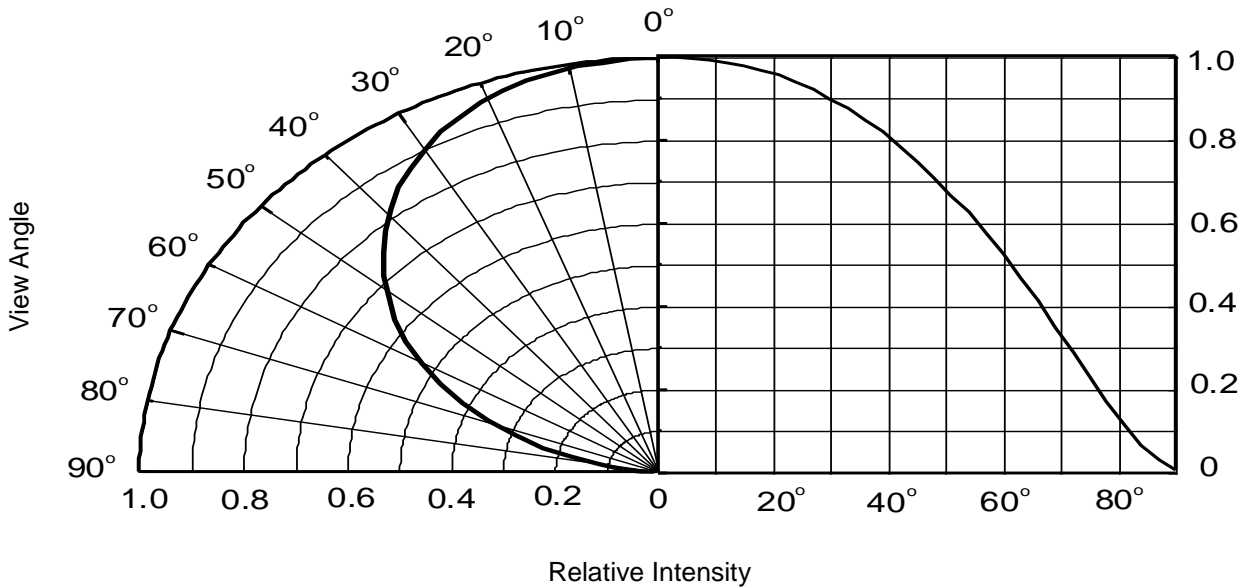
Typical Electro-Optical Characteristics Curves

Typical Curve of Spectral Distribution

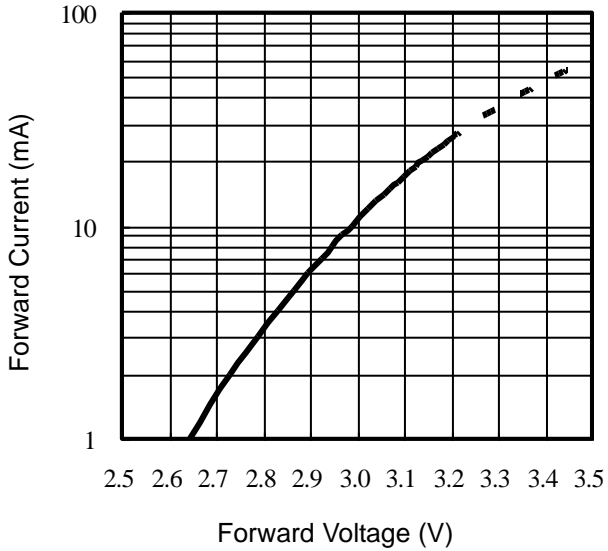


Note: $V(\lambda)$ =Standard eye response curve

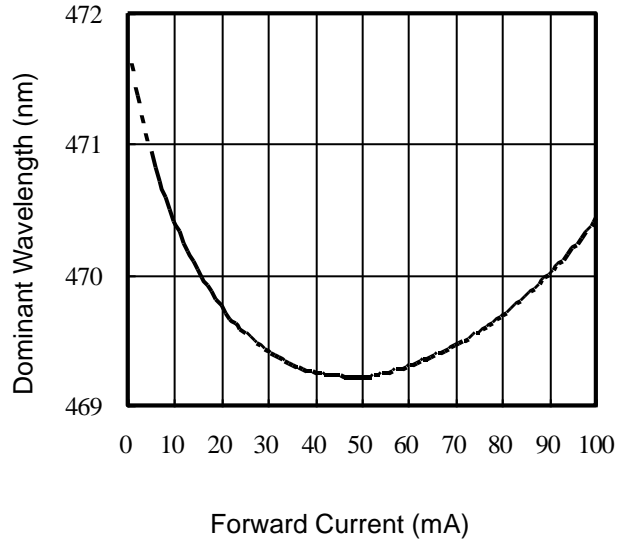
Diagram Characteristics of Radiation



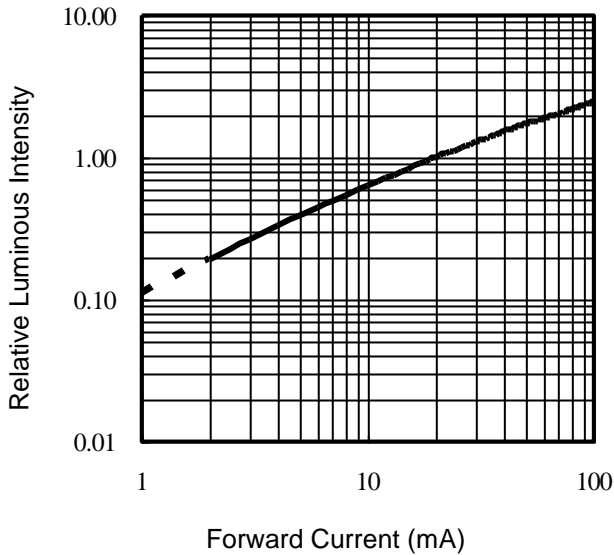
Forward Current vs. Forward Voltage
 (Ta=25°C)



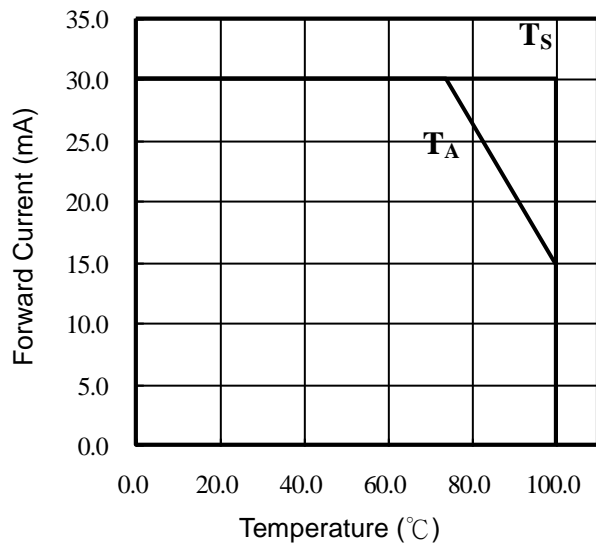
Dominant Wavelength vs. Forward Current
 (Ta=25°C)



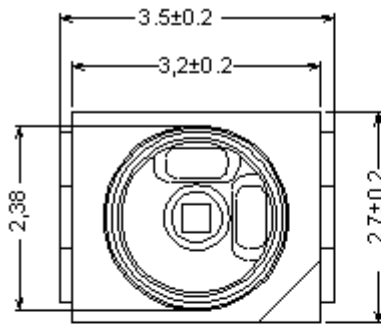
Relative Luminous Intensity vs. Forward Current
 (Ta=25°C)



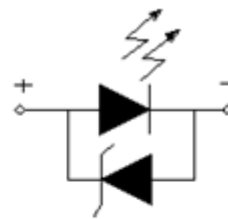
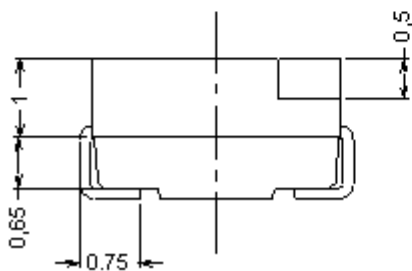
Forward current vs. Ambient and Solder Temperature



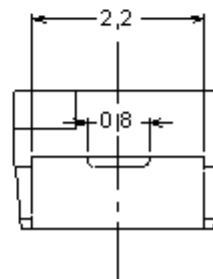
Package Dimension



Chip position



Polarity



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

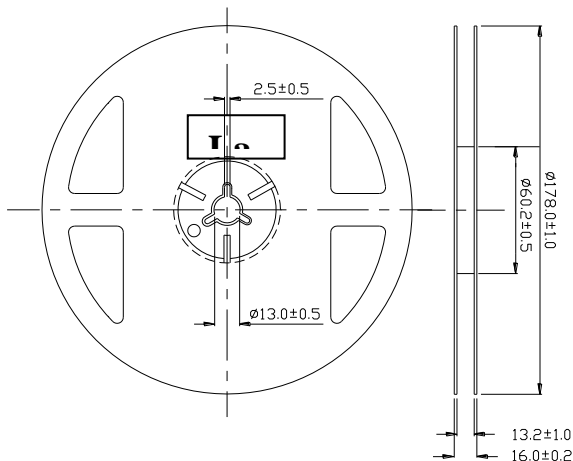
Moisture Resistant Packing Materials

Label Explanation

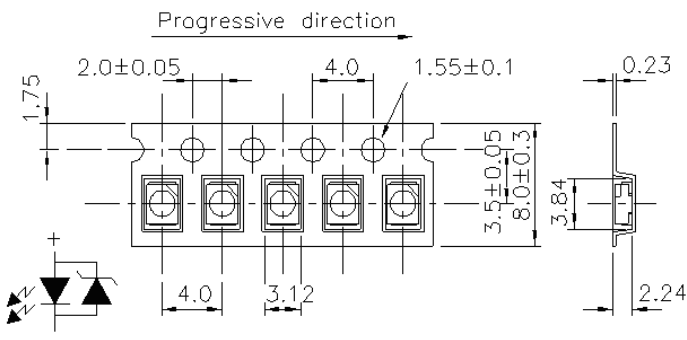


- CPN: Customer's Product Number
- P/N: Product Number
- QTY: Packing Quantity
- CAT: Luminous Intensity Rank
- HUE: Dom. Wavelength Rank
- REF: Forward Voltage Rank
- LOT No: Lot Number

Reel Dimensions



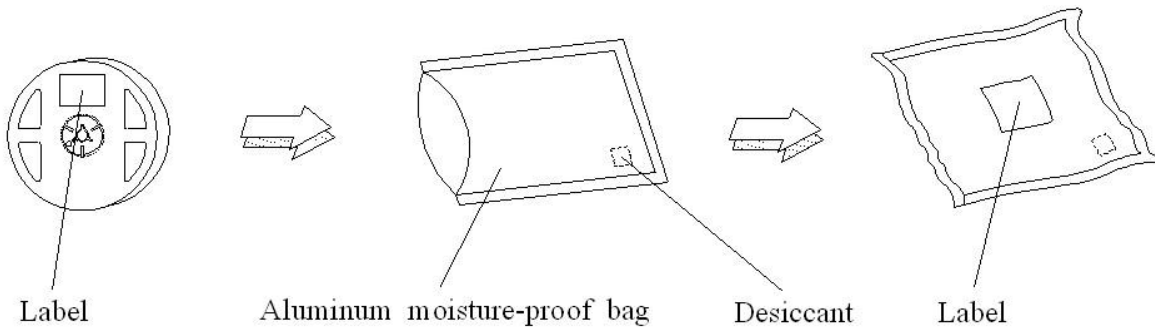
Carrier Tape Dimensions: Loaded Quantity 2000 pcs Per Reel



Polarity

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

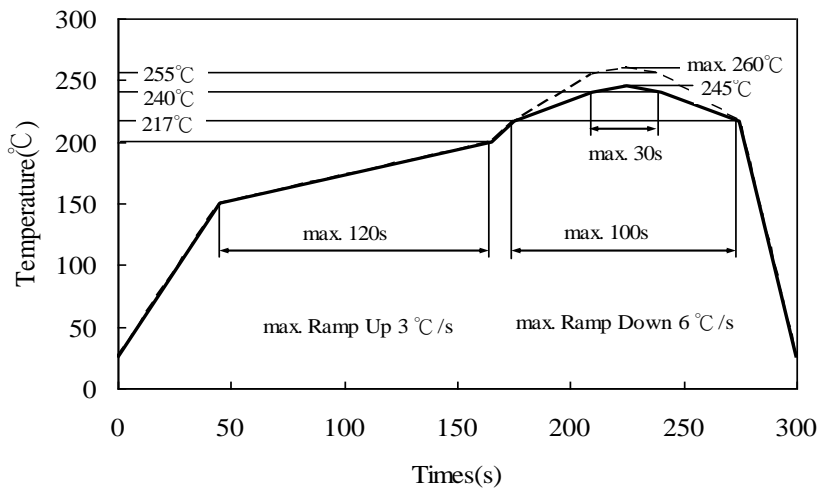
Moisture Resistant Packing Process



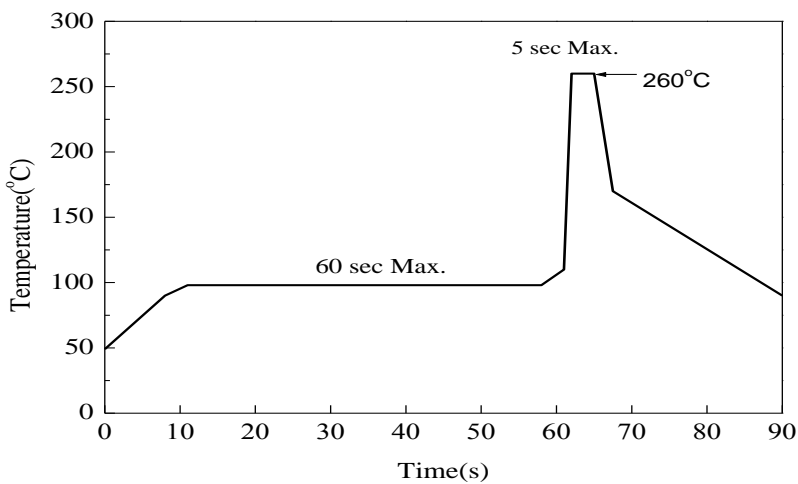
Note: Tolerances unless mentioned $\pm 0.1\text{mm}$. Unit = mm

Precautions for Use

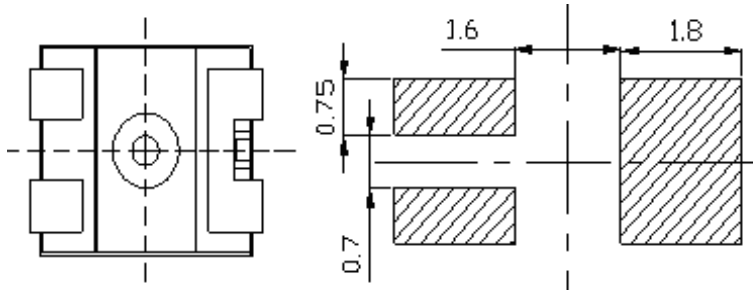
1. **Soldering Condition (Reference: IPC/JEDEC J-STD-020D)**
 - a. **IR reflow**



- b. **Wave soldering reflow**



(B) Recommend soldering pad



Note: Tolerances unless mentioned ± 0.1 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.