

### SMD ■ Top View LEDs EAPL3527BA2-AM

PRELIMINARY



#### Features

- P-LCC-2 package.
- Colored diffused resin.
- Wide viewing angle 120°.
- Inner reflector and white package.
- Brightness: 710 to 1800 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
InGaN	Ice Blue	Slightly Green Dotted

## Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Rating	Unit
Reverse Voltage	$V_R$	5	V
Forward Current	$I_F$	30	mA
Peak Forward Current (Duty 1/10 @1KHz)	$I_{FP}$	100	mA
Power Dissipation	$P_d$	120	mW
Junction Temperature	$T_j$	125	°C
Operating Temperature	$T_{opr}$	-40 ~ +100	°C
Storage Temperature	$T_{stg}$	-40 ~ +110	°C
Thermal resistance	$R_{th\ J-A}$	600	K/W
	$R_{th\ J-S}$	400	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 <sub>v</sub>	710	-----	1800	mcd	I <sub>F</sub> =20mA
Viewing Angle	2θ <sub>1/2</sub>	-----	120	-----	deg	I <sub>F</sub> =20mA
Forward Voltage	V <sub>F</sub>	2.7	-----	3.8	V	I <sub>F</sub> =20mA
Reverse Current	I <sub>R</sub>	-----	-----	10	μA	V <sub>R</sub> =5V

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
V1	710	900	mcd	I <sub>F</sub> =20mA
V2	900	1120		
AA	1120	1400		
AB	1400	1800		

Note:

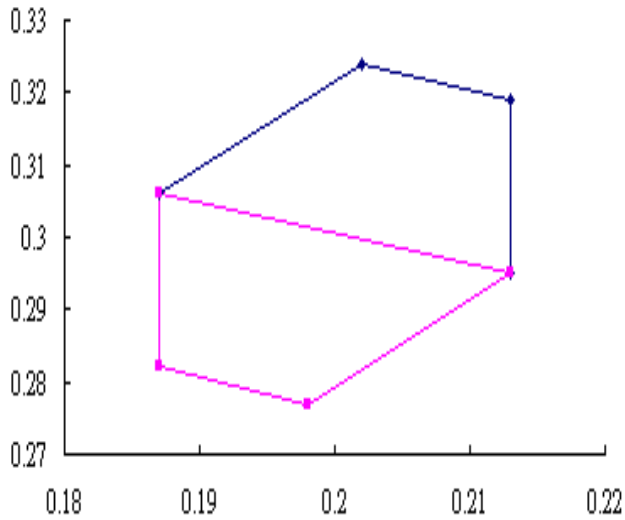
Tolerance of Luminous Intensity: ±11%

### Bin Range of Chromaticity Coordinates

Bin Code	CIE_x	CIE_y	Condition
Z9-1	0.202	0.324	I <sub>F</sub> =20mA
	0.213	0.319	
	0.213	0.295	
	0.187	0.306	
Z9-2	0.213	0.295	
	0.198	0.277	
	0.187	0.282	
	0.187	0.306	

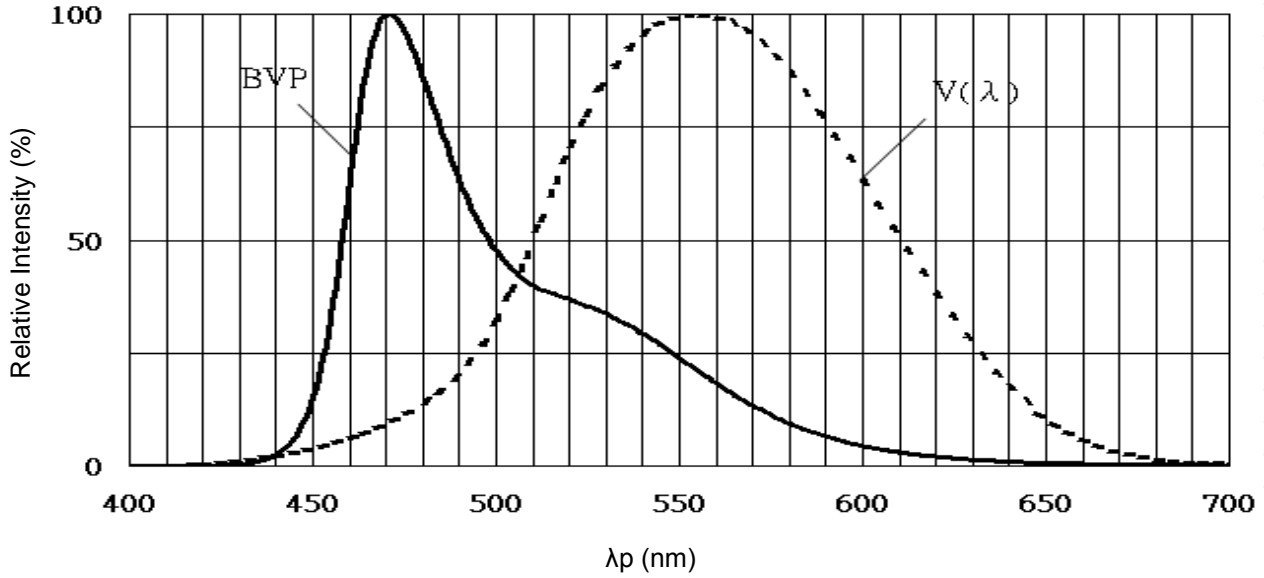
Notes : Tolerance Chromaticity Coordinates : ±0.01

### The C.I.E. 1931 Chromaticity Diagram



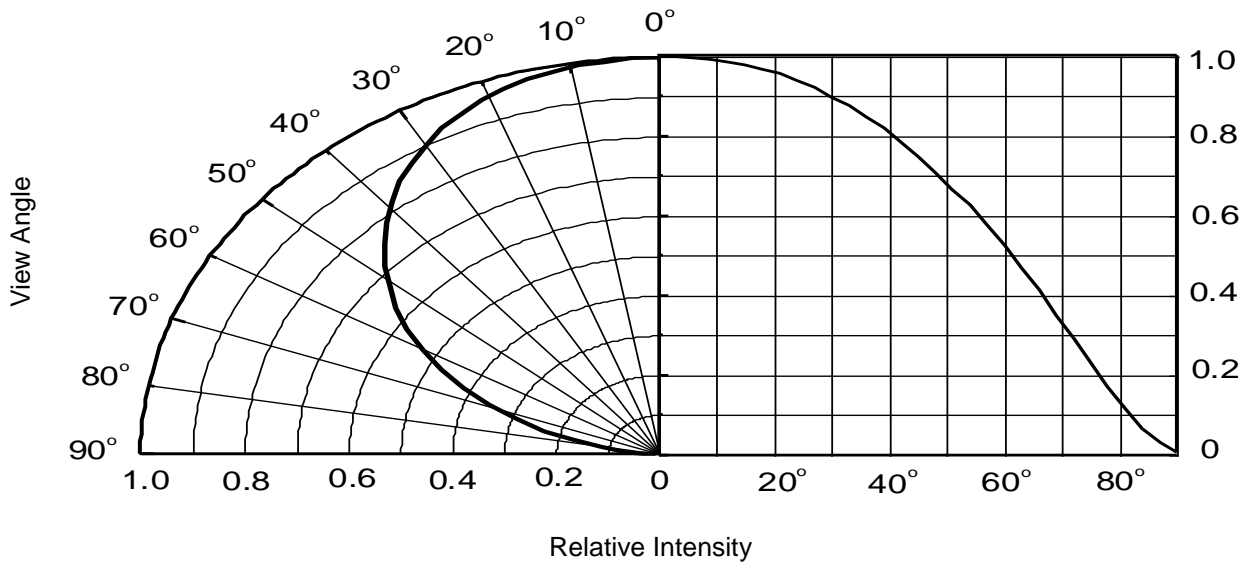
## Typical Electro-Optical Characteristics Curves

### Typical Curve of Spectral Distribution

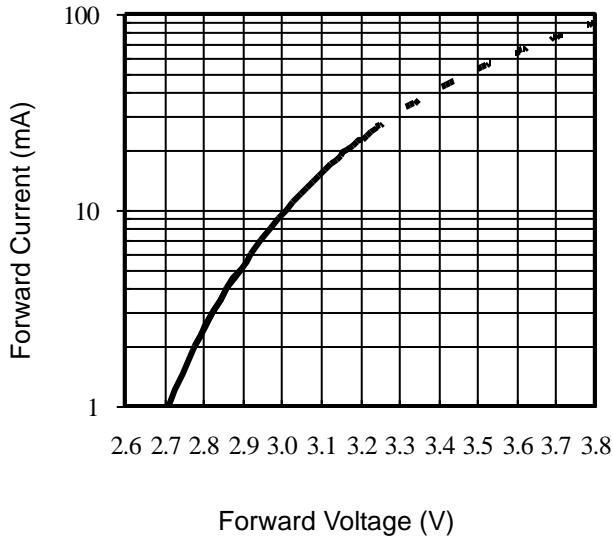


Note:  $V(\lambda)$ =Standard eye response curve

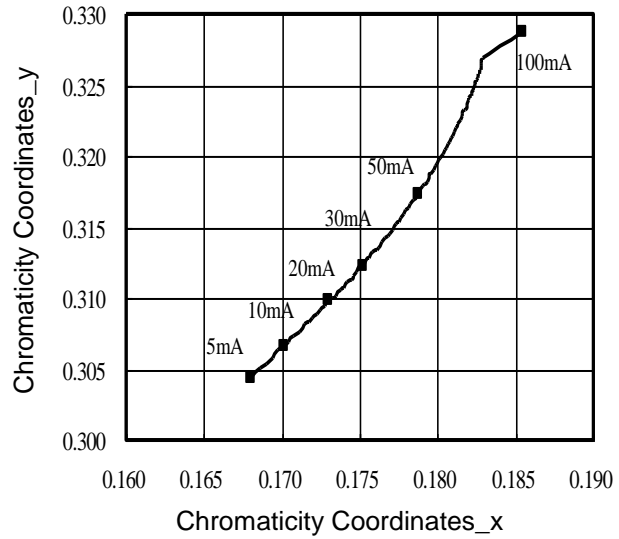
### Diagram Characteristics of Radiation



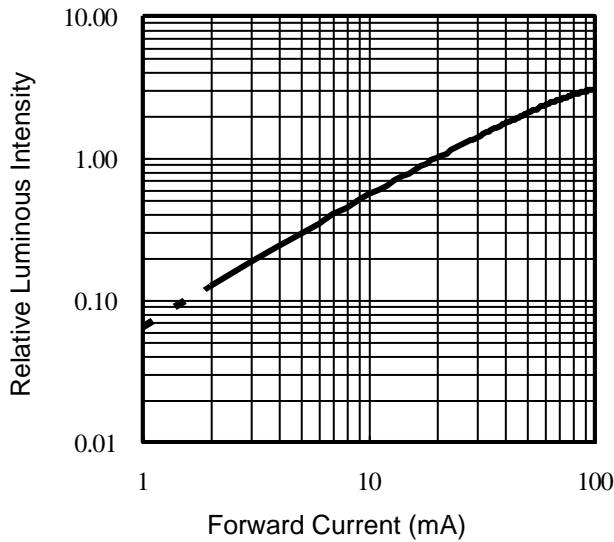
**Forward Current vs. Forward Voltage**  
 (Ta=25°C)



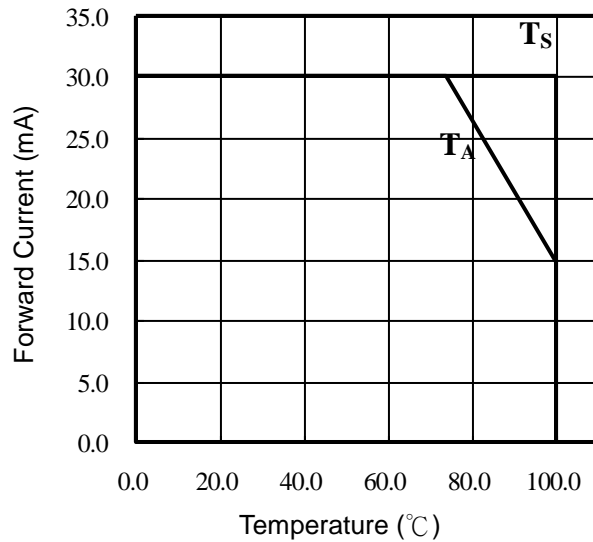
**Chromaticity Coordinates vs. Forward Current (Ta=25°C)**



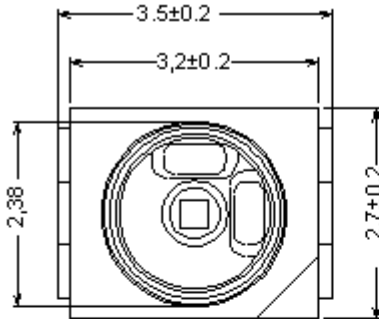
**Relative Luminous Intensity vs. Forward Current (Ta=25°C)**



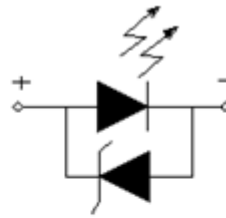
**Forward current vs. Ambient and Solder Temperature**



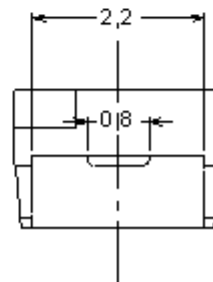
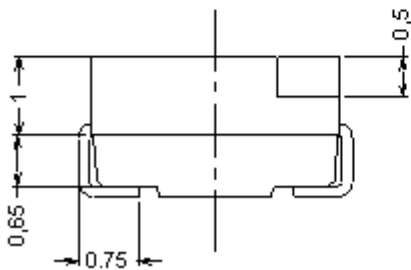
## Package Dimension



Chip position



Polarity

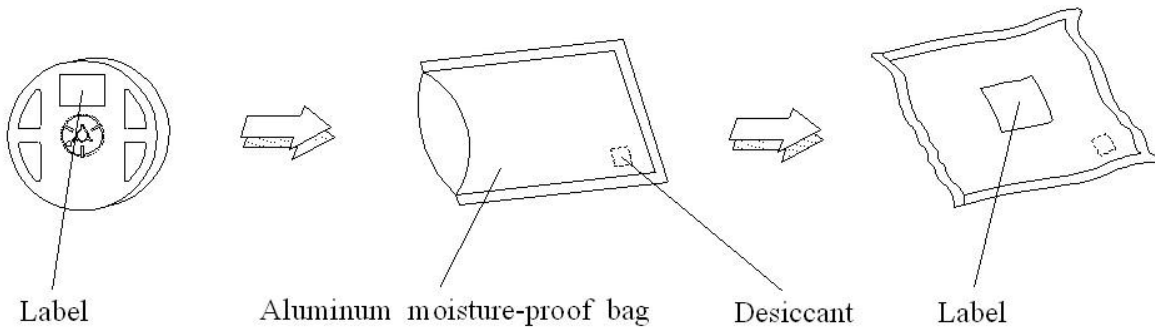


Note: Tolerances unless mentioned  $\pm 0.1$  mm. Unit = mm





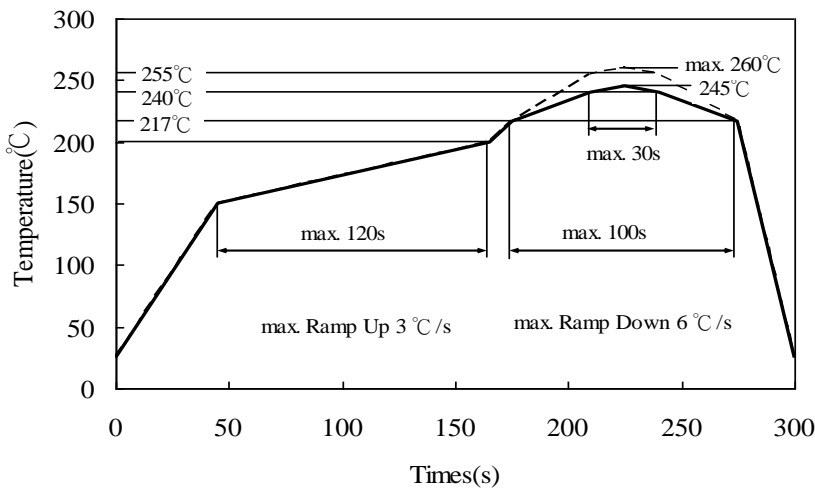
**Moisture Resistant Packing Process**



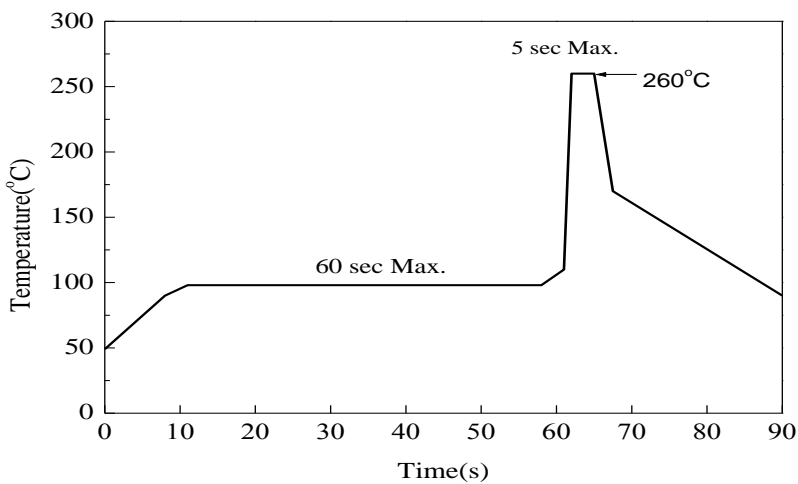
Note: Tolerances unless mentioned  $\pm 0.1\text{mm}$ . Unit = mm

**Precautions for Use**

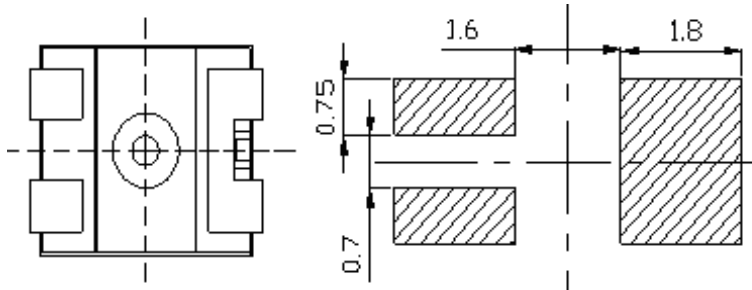
1. Soldering Condition (Reference: IPC/JEDEC J-STD-020D)
  - a. IR reflow



- b. Wave soldering reflow



(B) Recommend soldering pad



Note: Tolerances unless mentioned  $\pm 0.1$ 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  $\pm 5$ deg 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.