

Mini Top View LEDs EAPL3527BA1

PRELIMINARY



Features

- P-LCC-2 package.
- White package.
- Optical indicator.
- Colorless clear window.
- Wide viewing angle.
- Suitable for vapor-phase reflow.
- Computable with automatic placement equipment.
- Available on tape and reel (8mm Tape).
- Pb-free
- The product itself will remain within RoHS compliant version

Applications

- Automotive: backlighting in dashboard and switch.
- Telecommunication: indicator and backlighting in telephone and fax.
- Flat backlight for LCD, switch and symbol.
- Light pipe application.
- General use.

Device Selection Guide

Chip Materials	Emitted Color	Resin Color
InGaN	Blue	Water Clear

Absolute Maximum Ratings (Ta=25℃)

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	110	mW
Electrostatic Discharge (HBM)	ESD	1000	V
Operating Temperature	T_{opr}	-40 ~ +85	℃
Storage Temperature	T_{stg}	-40 ~ +90	℃
Soldering Temperature	T_{sol}	Reflow Soldering : 260 ℃ for 10 sec. Hand Soldering : 350 ℃ for 3 sec.	

Electro-Optical Characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Luminous Intensity	I _v	225	-----	565	mcd	I _F =20mA
Viewing Angle	2θ1/2	-----	120	-----	deg	I _F =20mA
Peak Wavelength	λ _p	-----	468	-----	nm	I _F =20mA
Dominant Wavelength	λ _d	464.5	-----	476.5	nm	I _F =20mA
Spectrum Radiation Bandwidth	Δλ	-----	25	-----	nm	I _F =20mA
Forward Voltage	V _F	2.70	-----	3.70	V	I _F =20mA
Reverse Current	I _R	-----	-----	50	μA	V _R =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
S2	225	285	mcd	I _F =20mA
T1	285	360		
T2	360	450		
U1	450	565		

Note: Tolerance of Luminous Intensity: ±11%

Bin Range of Dominant Wavelength

Group	Bin Code	Min.	Max.	Unit	Condition
A	A9	464.5	467.5	nm	I _F =20mA
	A10	467.5	470.5		
	A11	470.5	473.5		
	A12	473.5	476.5		

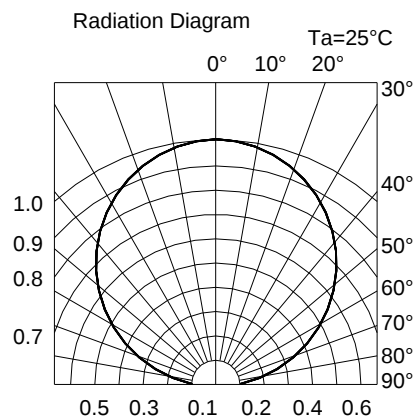
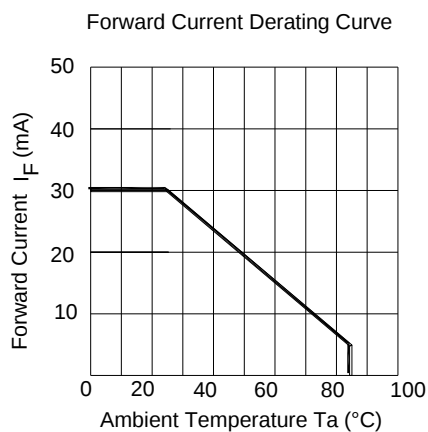
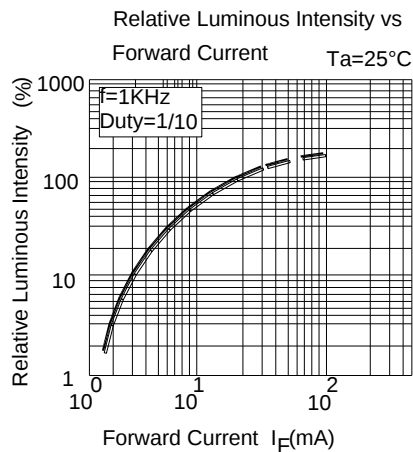
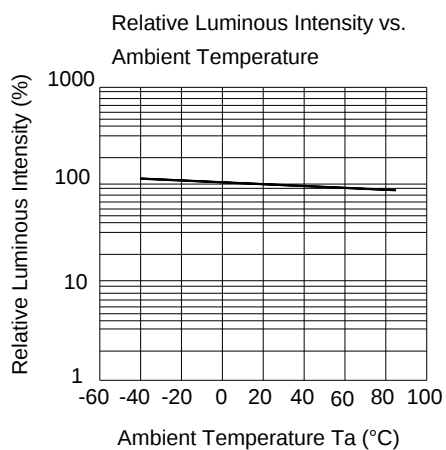
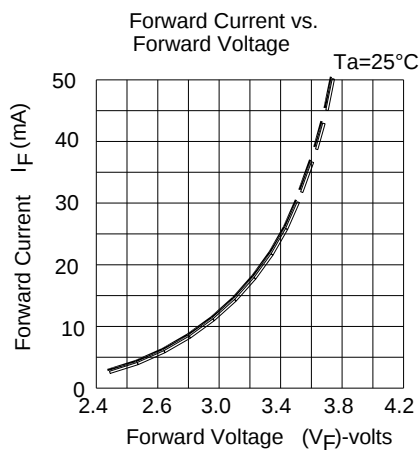
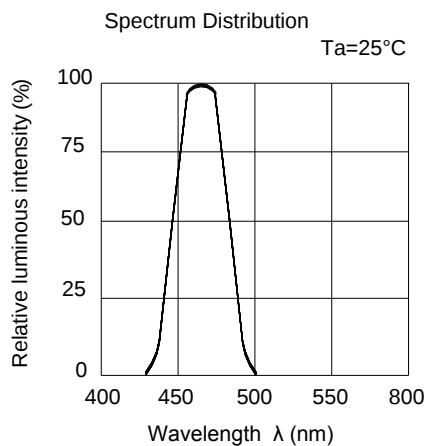
Note: Tolerance of Dominant Wavelength ±1nm

Bin Range of Forward Voltage

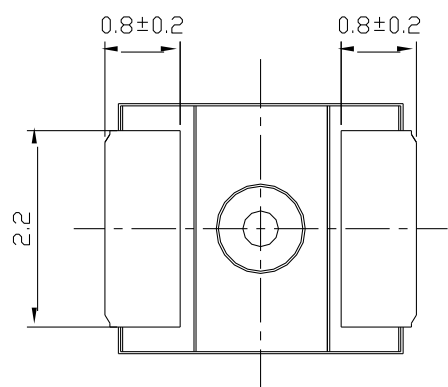
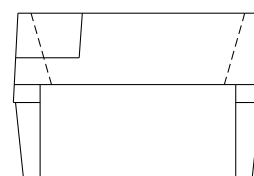
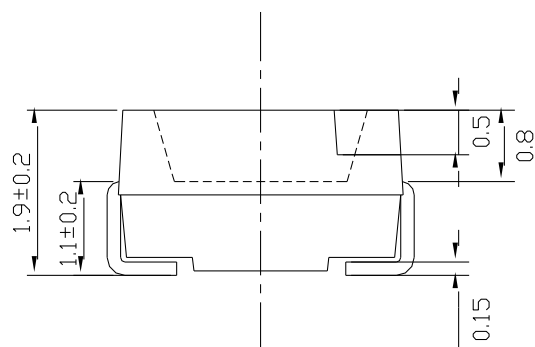
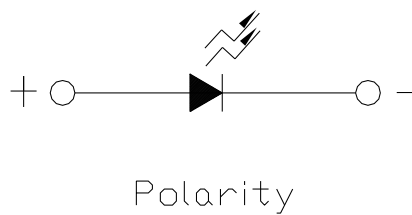
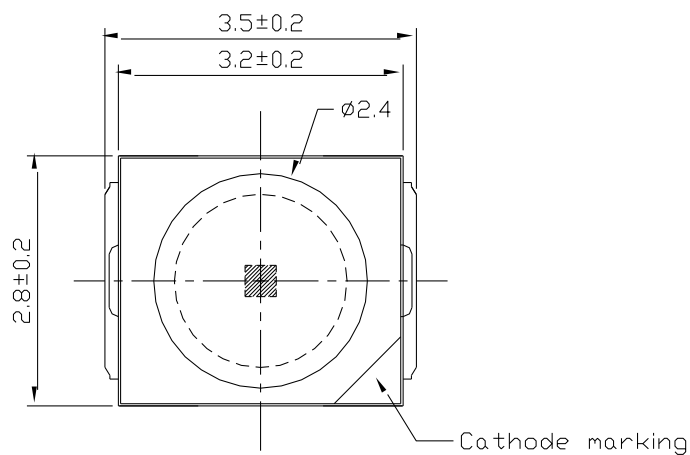
Group	Bin Code	Min.	Max.	Unit	Condition
N	10	2.70	2.90	V	$I_F=20\text{mA}$
	11	2.90	3.10		
	12	3.10	3.30		
	13	3.30	3.50		
	14	3.50	3.70		

Note: Tolerance of Forward Voltage : $\pm 0.1\text{V}$

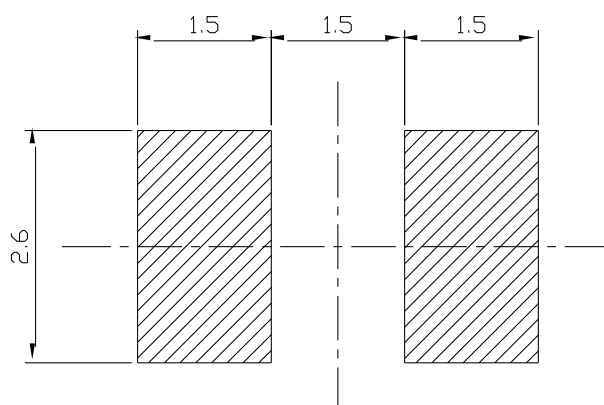
Typical Electro-Optical Characteristics Curves



Package Dimension

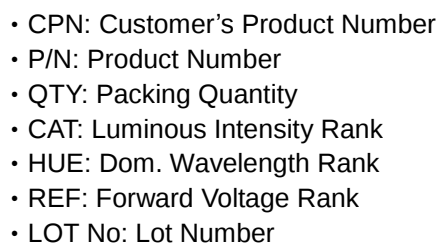


Recommended Solder Pad



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

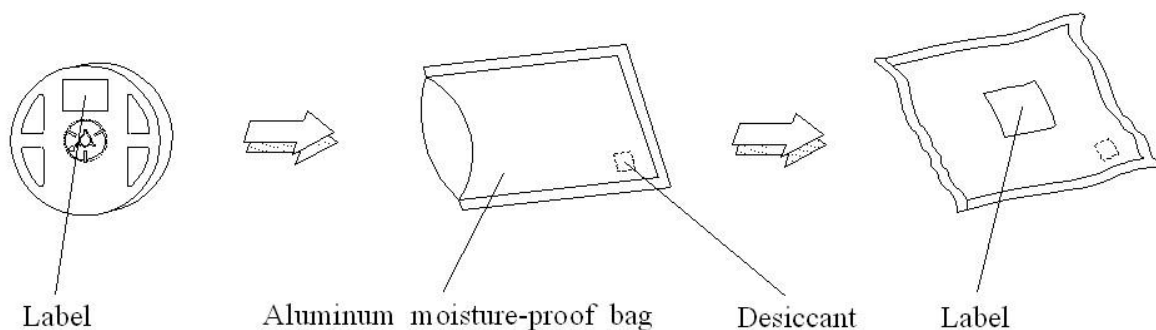
Label Explanation



Technical drawing of a 5-pin D-subminiature connector. The drawing includes a top view and a side view. The top view shows the connector's footprint with dimensions: 1.75, 2.0 ± 0.05, 4.0, 1.55 ± 0.1, 3.5 ± 0.05, 8.0 ± 0.3, 4.0, and 3.12. The side view shows the connector's profile with dimensions: 0.23, 3.84, and 2.24. A polarity symbol is shown at the bottom left, indicating pin 1. The drawing is labeled "Progressive direction" at the top.

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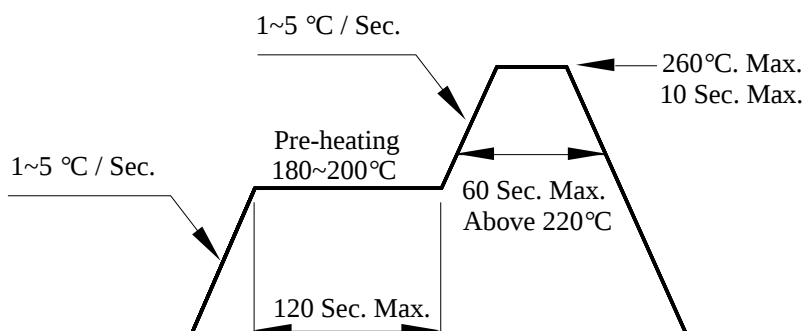
Moisture Resistant Packing Process



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

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°C or less and 90%RH or less.
 - 2.3 After opening the package: The LED's floor life are 168 hours under 30°C 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 : $60\pm 5^{\circ}\text{C}$ 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 280°C 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.

