Kingbright

3.5x2.8mm SURFACE MOUNT LED LAMP

Part Number: AAAF3529LSEEZGKQBKS

Hyper Red
Green
Blue

ATTENTION
OBSERVE PRECAUTIONS
FOR HANDLING
ELECTROSTATIC
DISCHARGE
SENSITIVE
DEVICES

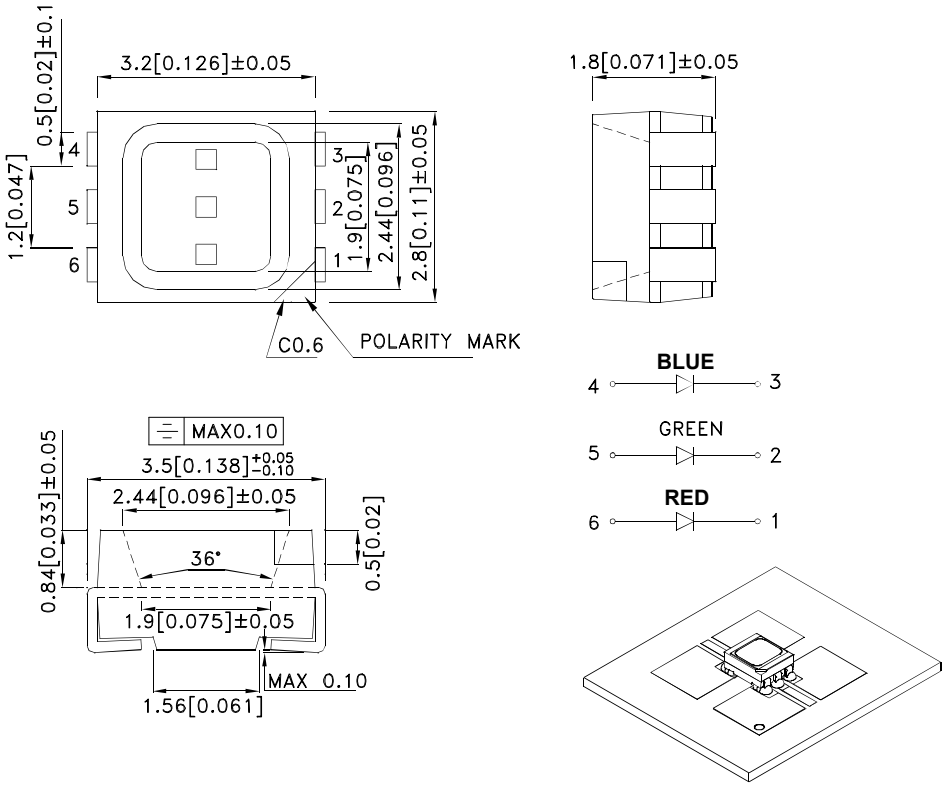
Features

- Outstanding material efficiency.
- Low power consumption.
- Can produce any color in visible spectrum, including white light.
- Suitable for all SMD assembly and solder process.
- Available on tape and reel.
- Package: 2000pcs / reel .
- Moisture sensitivity level : level 3.
- Low current IF=2mA operating.
- RoHS compliant.

Descriptions

- The Hyper Red source color devices are made with AlGaInP on GaAs substrate Light Emitting Diode.
- The Green source color devices are made with InGaN on Sapphire Light Emitting Diode.
- The Blue source color devices are made with InGaN on Sapphire Light Emitting Diode.
- Electrostatic discharge and power surge could damage the LEDs.
- It is recommended to use a wrist band or anti-electrostatic glove when handling the LEDs.
- All devices, equipments and machineries must be electrically grounded.

Package Dimensions

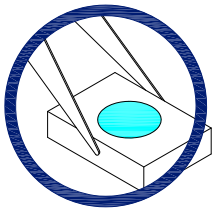


Notes:
1. All dimensions are in millimeters (inches).
2. Tolerance is ±0.25(0.01") unless otherwise noted.
3. The specifications, characteristics and technical data described in the datasheet are subject to change without prior notice.
4. The device has a single mounting surface. The device must be mounted according to the specifications.

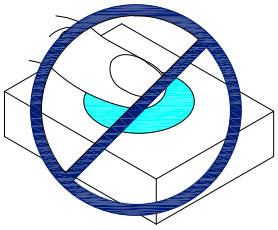
Handling Precautions

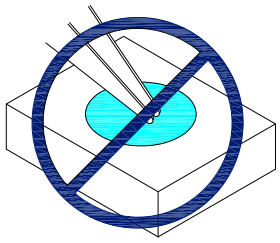
Compare to epoxy encapsulant that is hard and brittle, silicone is softer and flexible. Although its characteristic significantly Orangeuces thermal stress, it is more susceptible to damage by external mechanical force.
As a result, special handling precautions need to be observed during assembly using silicone encapsulated LED products. Failure to comply might lead to damage and premature failure of the LED.

1. Handle the component along the side surfaces by using forceps or appropriate tools.

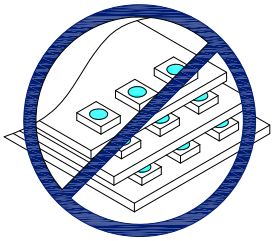


2. Do not directly touch or handle the silicone lens surface. It may damage the internal circuitry.

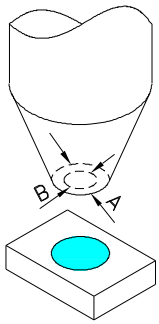




3. Do not stack together assembled PCBs containing exposed LEDs. Impact may scratch the silicone lens or damage the internal circuitry.



4.1. The inner diameter of the SMD pickup nozzle should not exceed the size of the LED to prevent air leaks.
4.2. A pliable material is suggested for the nozzle tip to avoid scratching or damaging the LED surface during pickup.
4.3. The dimensions of the component must be accurately programmed in the pick-and-place machine to insure precise pickup and avoid damage during production.



5. As silicone encapsulation is permeable to gases, some corrosive substances such as H_2S might corrode silver plating of leadframe. Special care should be taken if an LED with silicone encapsulation is to be used near such substances.

Selection Guide

Part No.	Emitting Color (Material)	Lens Type	Iv (mcd) [2] @ 2mA		Viewing Angle [1]
			Min.	Typ.	2θ1/2
AAAF3529LSEEZGKQBKS	Hyper Red (AlGaInP)	Water Clear	10	20	130°
	Green (InGaN)		80	180	
	Blue (InGaN)		12	30	

Notes:
1. θ1/2 is the angle from optical centerline where the luminous intensity is 1/2 of the optical peak value.
2. Luminous intensity / luminous Flux: +/-15%.
3. Luminous intensity value is traceable to CIE127-2007 standards.

Electrical / Optical Characteristics at TA=25°C

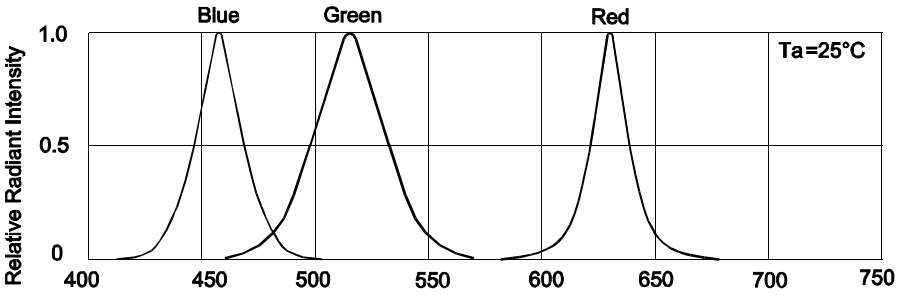
Symbol	Parameter	Emitting Color	Typ.	Max.	Units	Test Conditions
λpeak	Peak Wavelength	Hyper Red Green Blue	630 515 460		nm	I_F=2mA
λD [1]	Dominant Wavelength	Hyper Red Green Blue	621 525 465		nm	I_F=2mA
Δλ1/2	Spectral Line Half-width	Hyper Red Green Blue	20 35 25		nm	I_F=2mA
C	Capacitance	Hyper Red Green Blue	25 45 100		pF	V_F=0V;f=1MHz
V_F [2]	Forward Voltage	Hyper Red Green Blue	1.8 2.65 2.65	2.1 3.1 3.1	V	I_F=2mA
I_R	Reverse Current	Hyper Red Green Blue		10 50 50	uA	V_R=5V

Notes:
1.Wavelength: +/-1nm.
2.Forward Voltage: +/-0.1V.
3.Wavelength value is traceable to CIE127-2007 standards.
4.Excess driving current and/or operating temperature higher than recommended conditions may result in severe light degradation or premature failure.

Absolute Maximum Ratings at TA=25°C

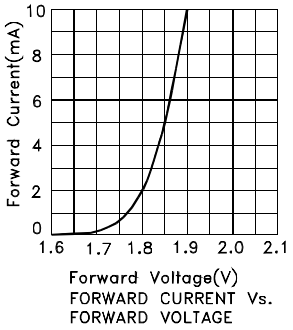
Parameter	Hyper Red	Green	Blue	Units
Power dissipation	105	93	93	mW
DC Forward Current	50	30	30	mA
Peak Forward Current [1]	195	150	150	mA
Electrostatic Discharge Threshold (HBM)	3000	450	250	V
Reverse Voltage	5			V
Operating Temperature	-40°C To +85°C			
Storage Temperature	-40°C To +85°C			

Notes:
1. 1/10 Duty Cycle, 0.1ms Pulse Width.
2. Relative humidity levels maintained between 40% and 60% in production area are recommended to avoid the build-up of static electricity – Ref JEDEC/JESD625-A and JEDEC/J-STD-033.

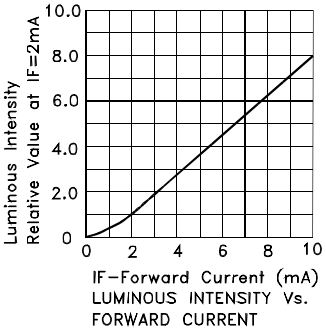


Relative Intensity Vs. Wavelength

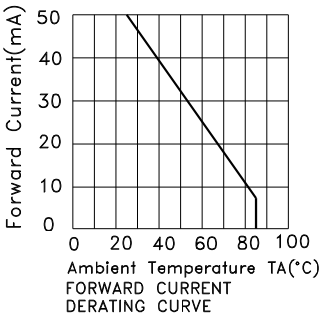
AAAF3529LSEEZGKQBKS
Hyper Red



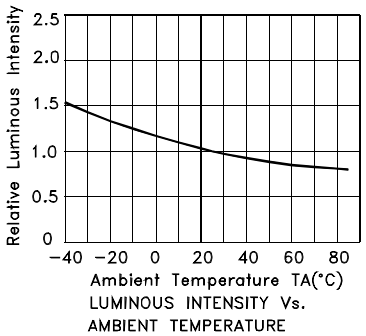
FORWARD CURRENT Vs.
FORWARD VOLTAGE



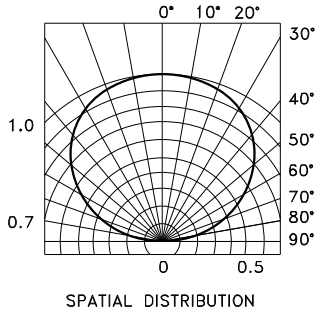
LUMINOUS INTENSITY Vs.
FORWARD CURRENT



FORWARD CURRENT
DERATING CURVE

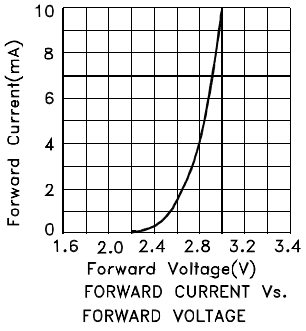


LUMINOUS INTENSITY Vs.
AMBIENT TEMPERATURE

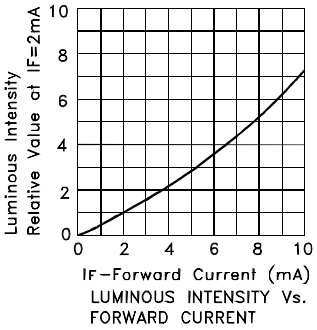


SPATIAL DISTRIBUTION

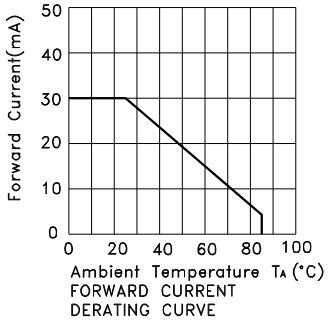
Green



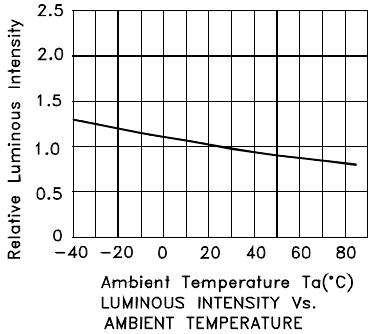
FORWARD CURRENT Vs.
FORWARD VOLTAGE



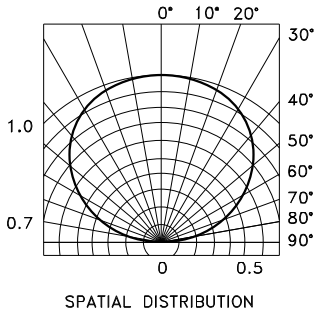
LUMINOUS INTENSITY Vs.
FORWARD CURRENT



FORWARD CURRENT
DERATING CURVE

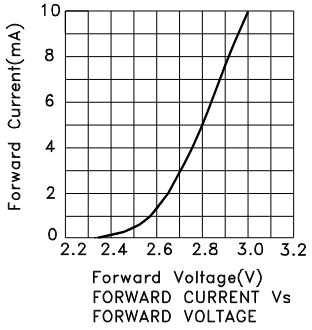


LUMINOUS INTENSITY Vs.
AMBIENT TEMPERATURE

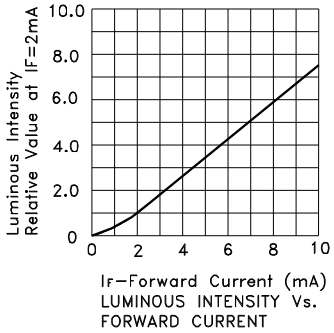


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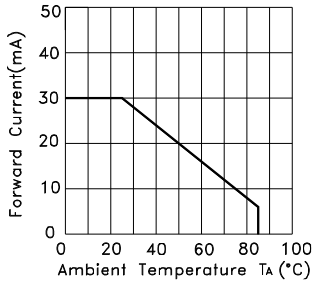
Blue



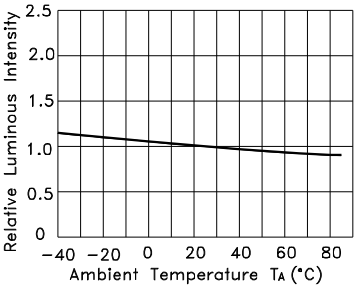
FORWARD CURRENT Vs
FORWARD VOLTAGE



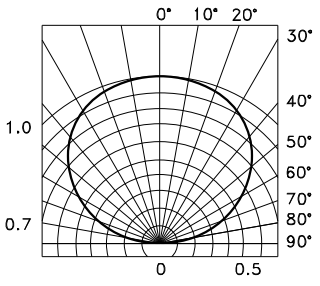
LUMINOUS INTENSITY Vs.
FORWARD CURRENT



FORWARD CURRENT
DERATING CURVE



LUMINOUS INTENSITY Vs.
AMBIENT TEMPERATURE

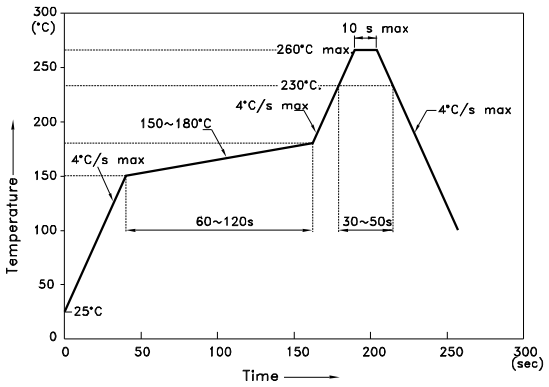


SPATIAL DISTRIBUTION

AAAF3529LSEEZGKQBKS

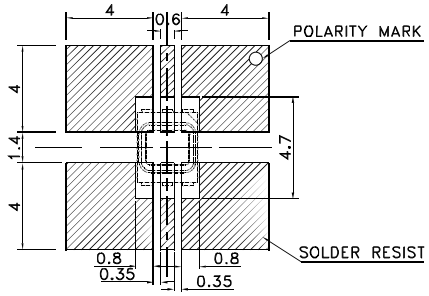
Reflow soldering is recommended and the soldering profile is shown below.
Other soldering methods are not recommended as they might cause damage to the product.

Reflow Soldering Profile For Lead-free SMT Process.

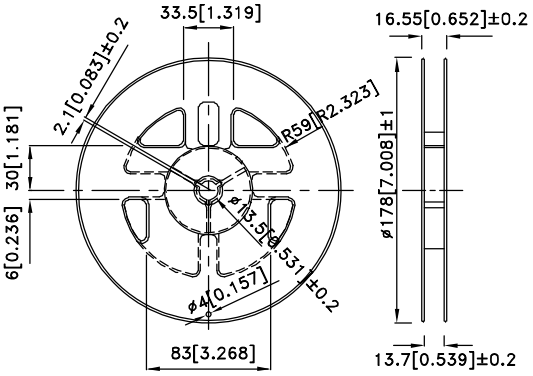


NOTES:
1. We recommend the reflow temperature 245°C(+/-5°C).The maximum soldering temperature should be limited to 260°C.
2. Don't cause stress to the epoxy resin while it is exposed to high temperature.
3. Number of reflow process shall be 2 times or less.

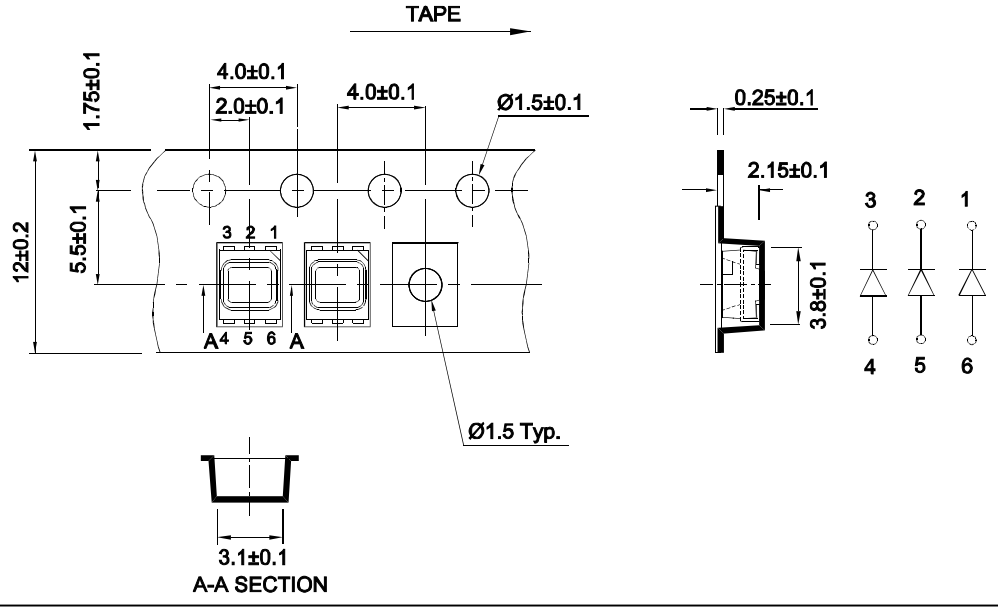
Recommended Soldering Pattern (Units : mm; Tolerance: ± 0.1)



Reel Dimension

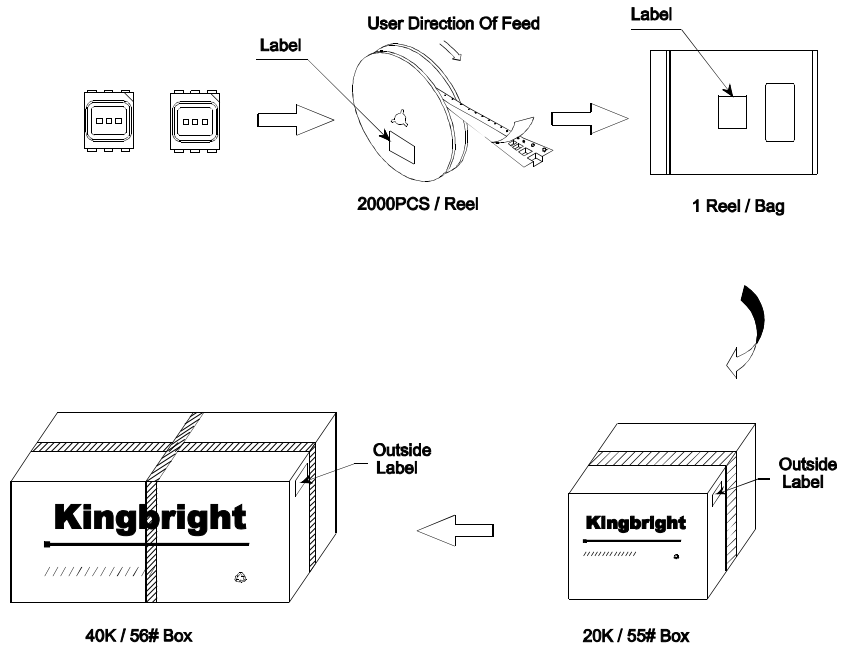


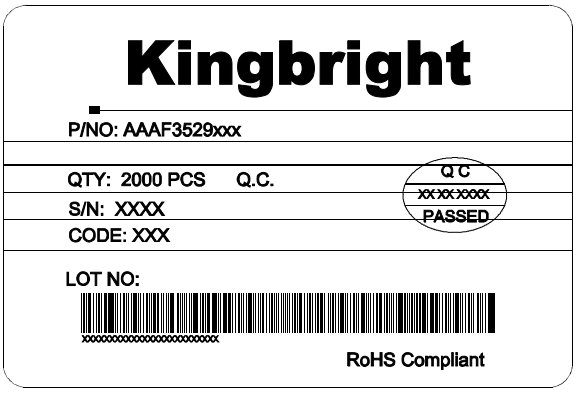
Tape Dimensions (Units : mm)



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PACKING & LABEL SPECIFICATIONS **AAAF3529LSEEZGKQBKS**





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