



**ATTENTION**  
OBSERVE PRECAUTIONS  
FOR HANDLING  
ELECTROSTATIC  
DISCHARGE  
SENSITIVE  
DEVICES

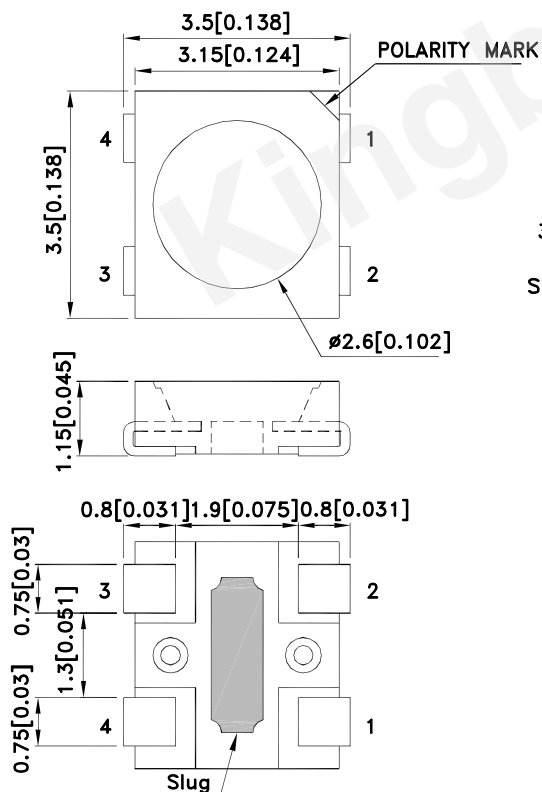
Part Number: KA-3535SEL2Z4S

Hyper Red

### Features

- White SMD package, silicone resin.
- Low thermal resistance.
- Compatible with IR-reflow processes.
- ESD protection.
- Package: 2000pcs / reel.
- Moisture sensitivity level : level 2a.
- RoHS compliant.

### Package Dimensions

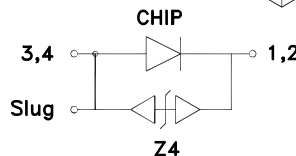
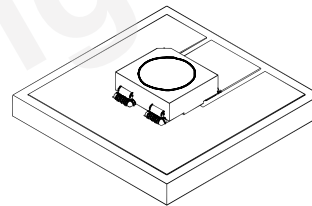


### Descriptions

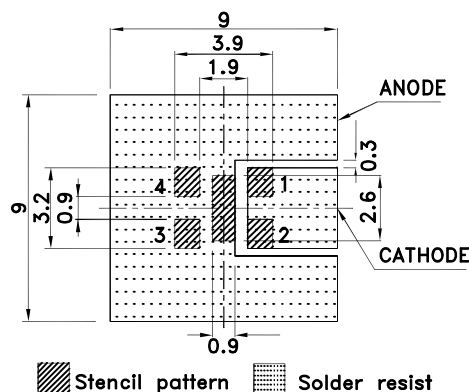
- The Hyper Red device is based on light emitting diode chip made from AlGaInP.
- Electrostatic discharge and power surge could damage the LEDs.
- It is recommended to use a wrist band or anti-electrostatic glove when handling the LEDs.
- All devices, equipments and machineries must be electrically grounded.

### Applications

- Signal and symbol luminaire for orientation.
- Marker lights (e.g. steps, exit ways, etc).
- Decorative and entertainment lighting.
- Commercial and residential lighting.
- Automotive interior lighting.



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



#### 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.

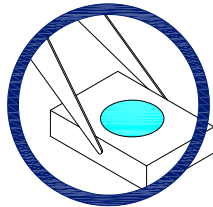


## Handling Precautions

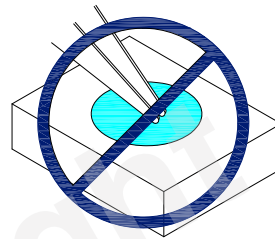
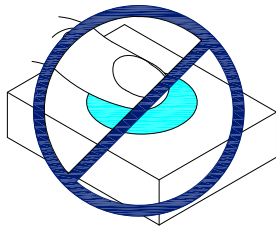
Compare to epoxy encapsulant that is hard and brittle, silicone is softer and flexible. Although its characteristic significantly reduces thermal stress, it is more susceptible to damage by external mechanical force.

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.

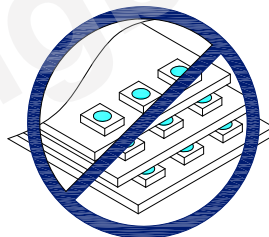
1. Handle the component along the side surfaces by using forceps or appropriate tools.



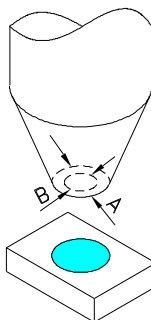
2. Do not directly touch or handle the silicone lens surface. It may damage the internal circuitry.



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 (cd) [2] @ 150mA		Φv (lm) [2] @ 150mA*		Viewing Angle [1]
			Min.	Typ.	Min.	Typ.	2 θ 1/2
KA-3535SEL2Z4S	Hyper Red (AlGaInP)	Water Clear	2.3	3.1	10	13	120 °

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%.\*LEDs are binned according to their luminous flux.
3. Luminous intensity / Luminous flux value is traceable to CIE127-2007 standards.

## Absolute Maximum Ratings at TA=25°C

Parameter	Symbol	Value	Unit
Power Dissipation	P <sub>D</sub>	450	mW
Junction Temperature [1]	T <sub>J</sub>	110	°C
Operating Temperature	T <sub>op</sub>	-40 To +85	°C
Storage Temperature	T <sub>stg</sub>	-40 To +85	°C
DC Forward Current [1]	I <sub>F</sub>	150	mA
Reverse Voltage	V <sub>R</sub>	5	V
Peak Forward Current [2]	I <sub>FM</sub>	270	mA
Thermal Resistance [1] (Junction/ambient)	R <sub>th j-a</sub>	180	°C/W
Thermal Resistance [1] (Junction/solder point)	R <sub>th j-s</sub>	50	°C/W
Electrostatic Discharge Threshold (HBM)		8000	V

Notes:

1. Results from mounting on PC board FR4 (pad size ≥ 70mm<sup>2</sup>), mounted on pc board-metal core PCB is recommend for lowest thermal Resistance.
2. 1/10 Duty Cycle, 0.1ms Pulse Width.
3. 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.

## Electrical / Optical Characteristics at TA=25°C

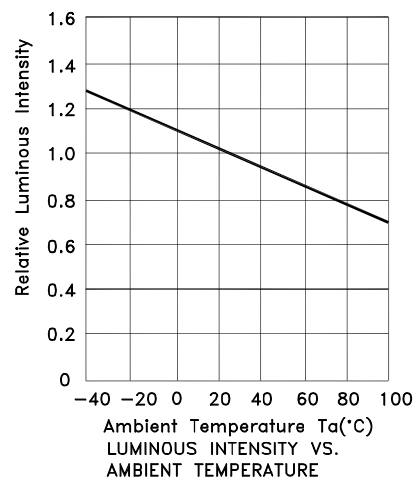
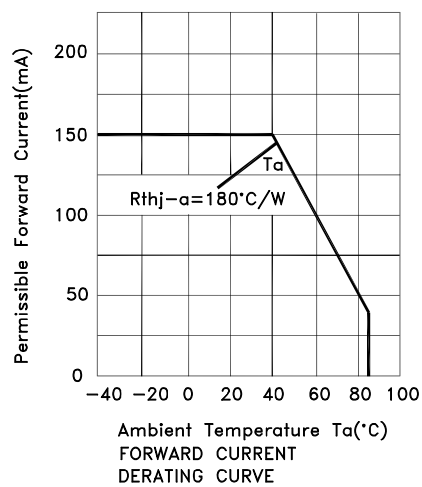
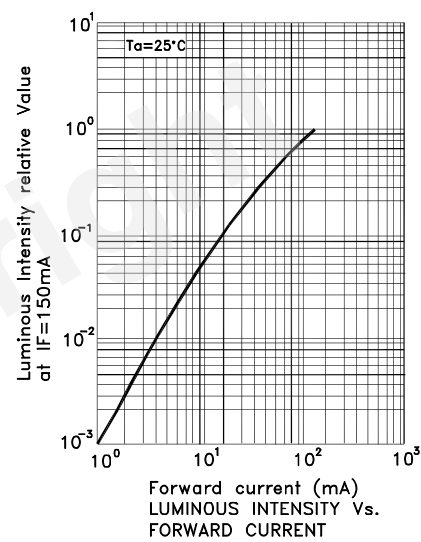
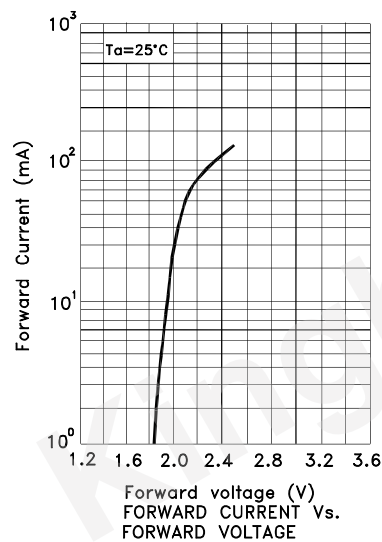
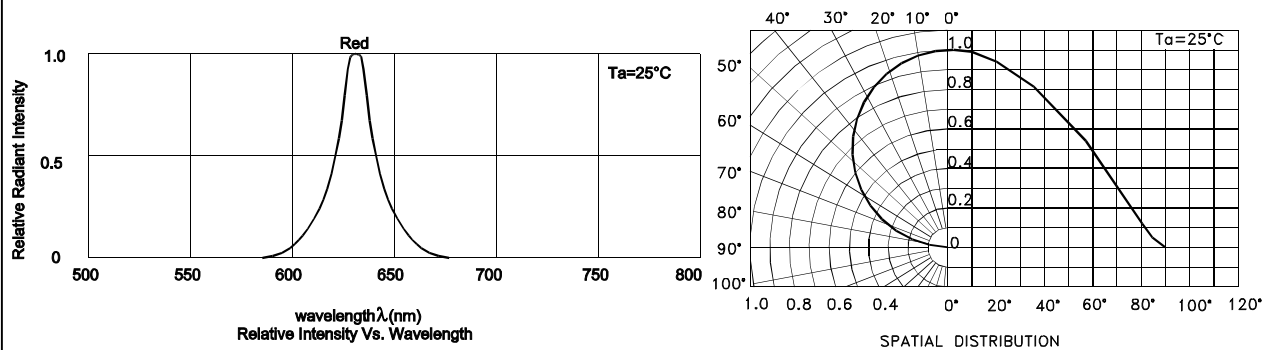
Parameter	Symbol	Value	Unit
Wavelength at peak emission I <sub>F</sub> =150mA [Typ.]	λ <sub>peak</sub>	631	nm
Dominant Wavelength I <sub>F</sub> =150mA [Typ.]	λ <sub>dom</sub> [1]	623	nm
Spectral Line Half-width I <sub>F</sub> =150mA [Typ.]	Δλ	25	nm
Forward Voltage I <sub>F</sub> =150mA [Min.]	V <sub>F</sub> [2]	2.0	V
Forward Voltage I <sub>F</sub> =150mA [Typ.]		2.5	
Forward Voltage I <sub>F</sub> =150mA [Max.]		3.0	
Allowable Reverse Current [Max.]	I <sub>R</sub>	85	mA
Temperature coefficient of λ <sub>peak</sub> I <sub>F</sub> =150mA, -10 ° C ≤ T ≤ 100 ° C [Typ.]	TC λ <sub>peak</sub>	0.11	nm/° C
Temperature coefficient of λ <sub>dom</sub> I <sub>F</sub> =150mA, -10 ° C ≤ T ≤ 100 ° C [Typ.]	TC λ <sub>dom</sub>	0.09	nm/° C
Temperature coefficient of V <sub>F</sub> I <sub>F</sub> =150mA, -10 ° C ≤ T ≤ 100 ° C [Typ.]	TC <sub>V</sub>	-2.5	mV/° C

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.

## Hyper Red

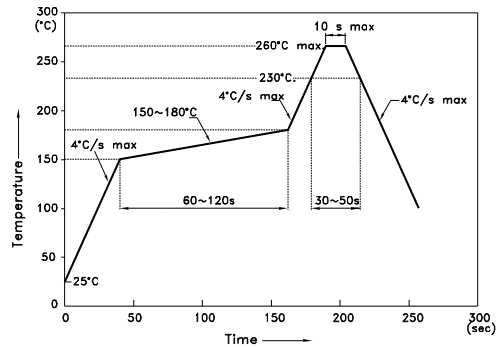
KA-3535SEL2Z4S



## KA-3535SEL2Z4S

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.

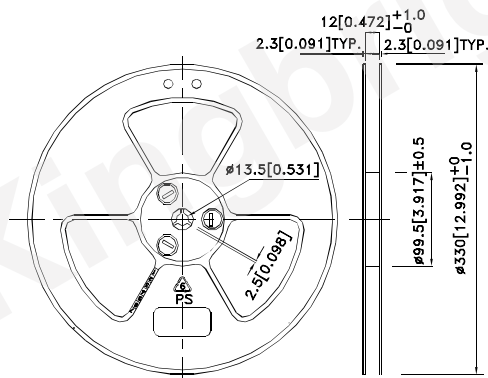
Reflow Soldering Profile For Lead-free SMT Process.



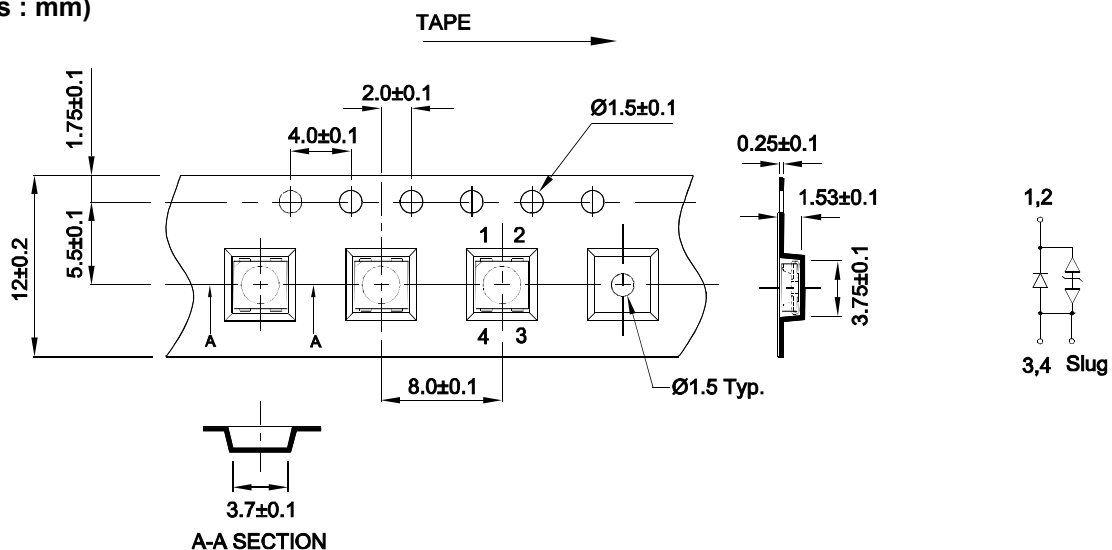
### NOTES:

1. We recommend the reflow temperature  $245^{\circ}\text{C} (+/-5^{\circ}\text{C})$ . The maximum soldering temperature should be limited to  $260^{\circ}\text{C}$ .
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.

## Reel Dimension

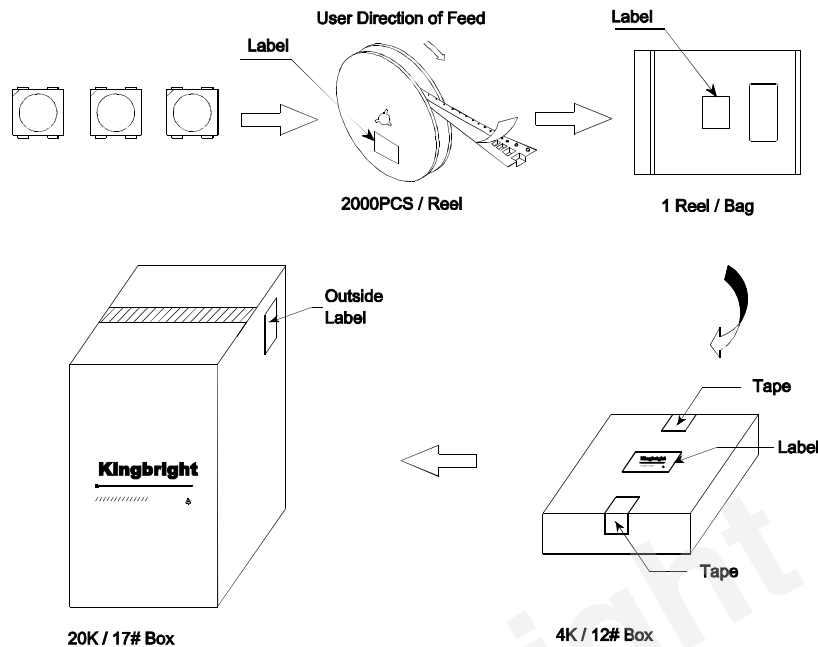



## Tape Specifications (Units : mm)



## PACKING & LABEL SPECIFICATIONS

KA-3535SEL2Z4S



<b>Kingbright</b>	
P/NO: KA-3535xxx	
QTY: 2000 pcs	Q.C.
S/N: XXXX	Q C xxxxxxx PASSED
CODE: XXX	
LOT NO:	
	
RoHS Compliant	

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