JS35AE Product Specification

SPECIFICATIONS OF JS35AE

File N0.：**JS-OP-RD-304** Version：**B/1** Effective Date：**2023-01-06**

RoHS Halogen Free

Approved by	Checked By	Prepared by
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Features

- AlN Ceramic
- EUTECTIC welding process
- Size:3.5*3.5*1.47mm
- Wide viewing angle:120°
- High output radiant power

Applications

- Disinfection
- Water/Air Purification
- Ultraviolet detection
- Food & Pharmaceutical Processing
- Health care

Performance Characteristics

Electro-Optical Characteristics @100mA Tc=22℃ Main Bin

	Parameter	Symbol	Minimum	Maximum	Unit
UVC	Forward Voltage	Vf1	5	5.5	V
			5.5	6	
			6	6.5	
			6.5	7	
	Output Radiant Power	Φe	12	15	mW
			15	20	
			20	25	
	Peak Wavelength	WLP	265	270	nm
			270	275	
			275	280	
			280	285	
	Spectrum Half Width	HW	8	14	nm

Notes：

✓ These values measured by the Jason optical spectrum analyzer
And tolerances are followings as below.
- Forward Voltage(Vf1): ±0.2V
- Output Radiant Power(Φe): ±10%
- Peak Wavelength(WLP): ±3nm

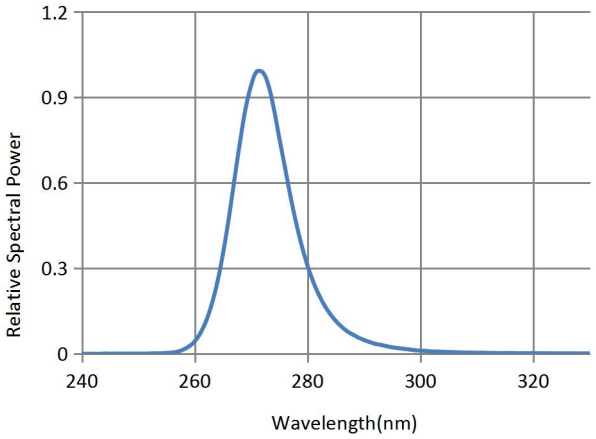
Absolute Maximum Ratings

Parameter	Symbol	Condition	Max Rating	Unit
Forward Current	If	Ta = 22˚C	120	mA
Reverse Voltage	Vr	Ta = 22˚C	10	V
Operating Temperature	T	—	-30-60	℃
Storage Temperature	Tstg	Sealed Package	-40-100	℃
Soldering Temperature	T	Reflow Soldering	250-260	℃

Typical Characteristic Curves

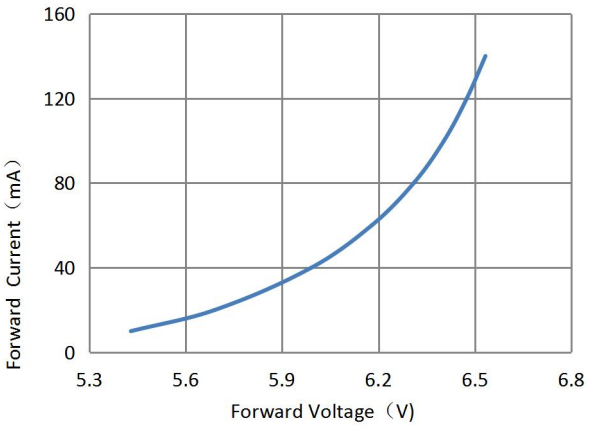
- Spectrum

Ta=22℃
If=100mA



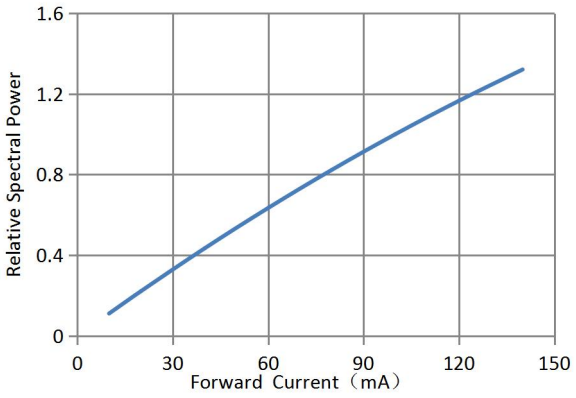
- Forward Current vs. Forward Voltage

Ta=22℃



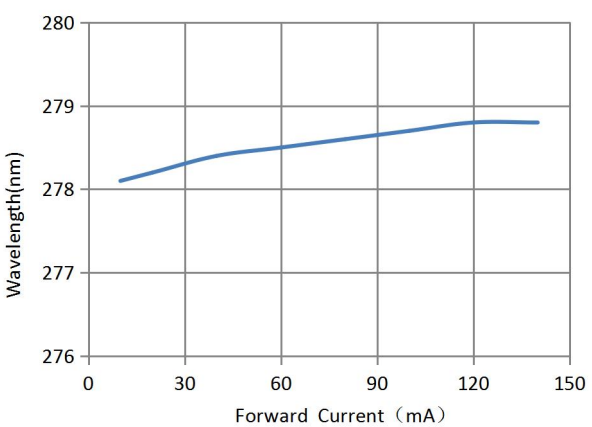
- Relative Spectral Power vs. Forward Current

Ta=22℃



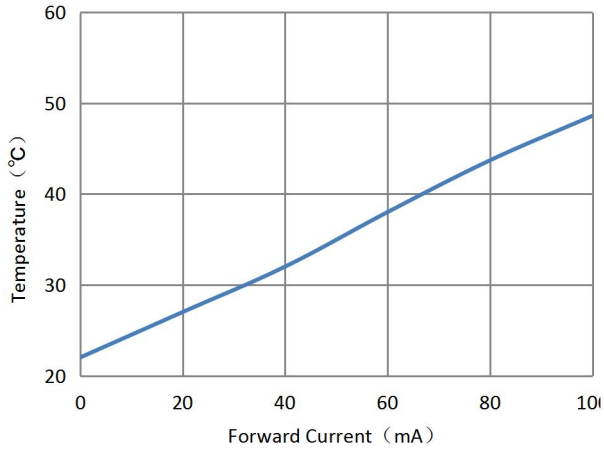
- Wavelength vs. Forward Current

Ta=22℃



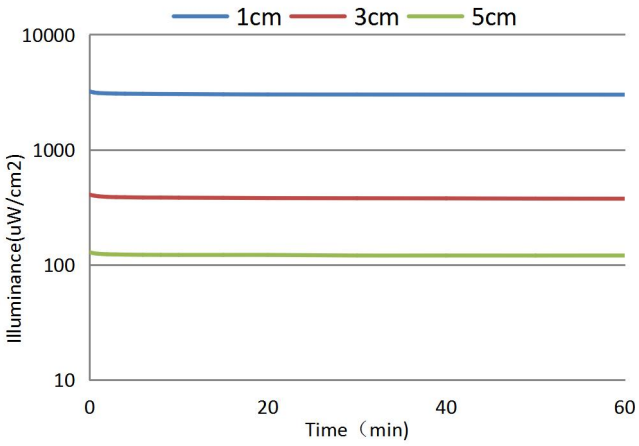
■ Temperature vs. Forward Current

Ta=22℃



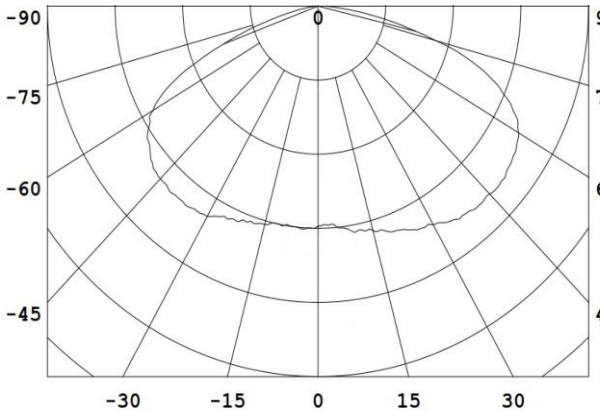
■ Illumination vs. Time

Ta=22℃ If=100mA



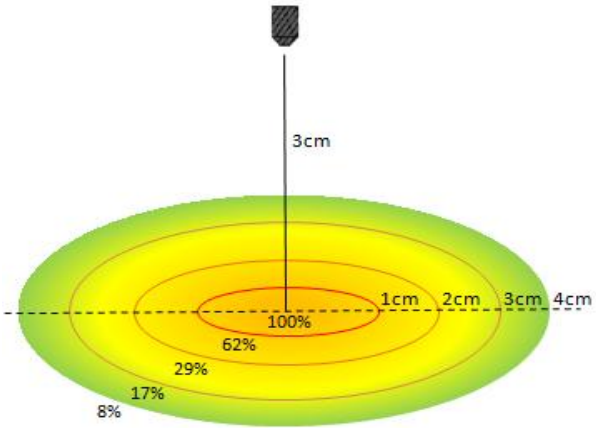
■ Radiant Pattern

Ta=22℃



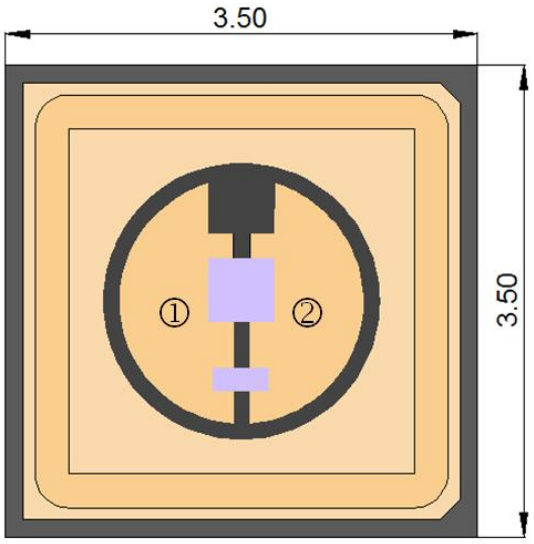
■ Illumination Pattern

Ta=22℃ If=100mA

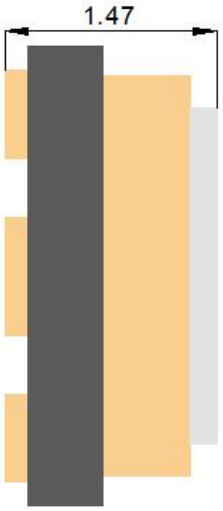


Mechanical Dimension

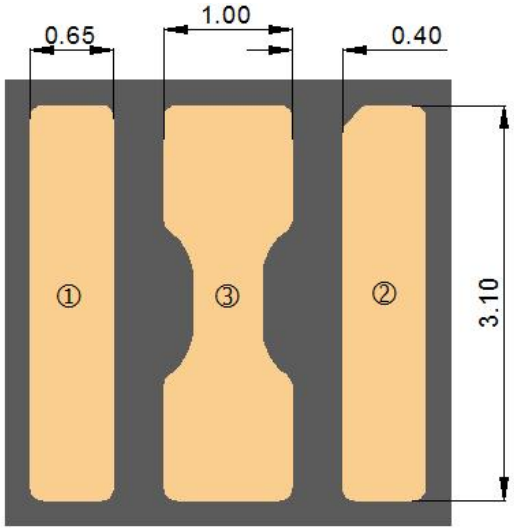
Top View



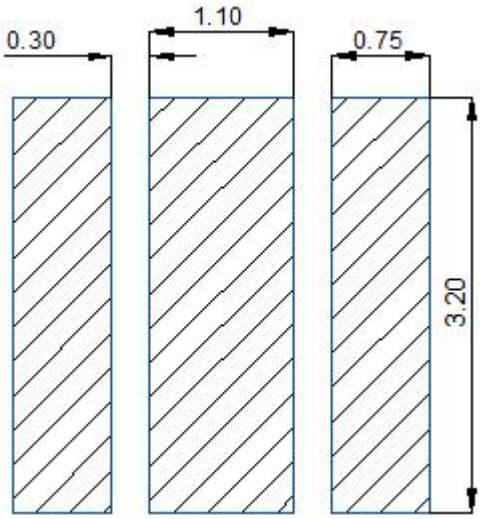
Side View



Bottom View



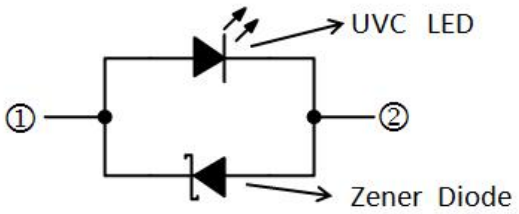
Recommend PCB Solder Pad



notes：

- ✓ ①Anode Pad ②Cathode Pad ③Thermal Pad
- ✓ All dimensions are in mm, Undefined tolerances are ±0.20mm
- ✓ In addition to UV LED chip, a zener diode is welded in the device to provide ESD protection. The connection mode between LED chip and zener diode is shown in the figure below:

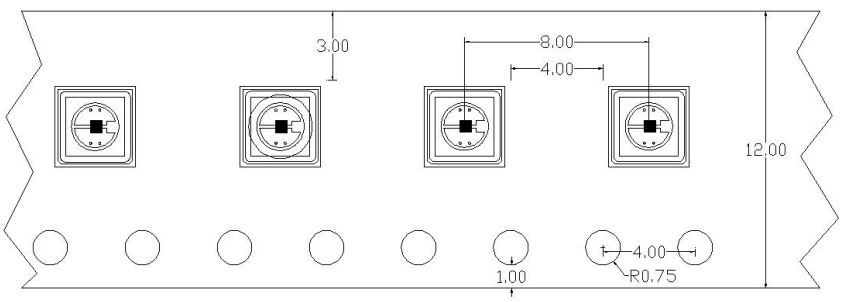
Internal Circuit

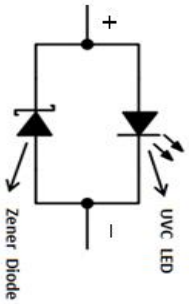


Packaging and Labeling of Products

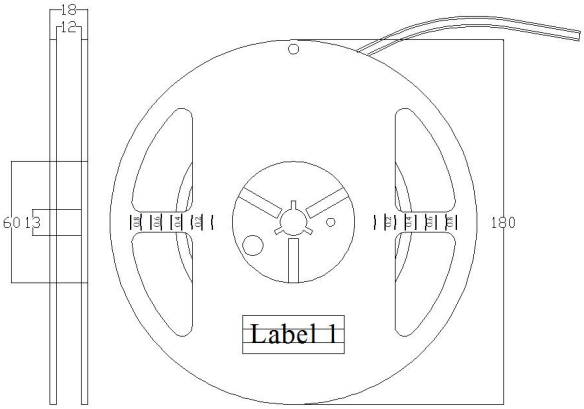
Taping Outline Dimensions：

Tape：





Reel ：



-Reel：Conductive PS(Black)

- Embossed Carrier Tape: conductive PS (Black)

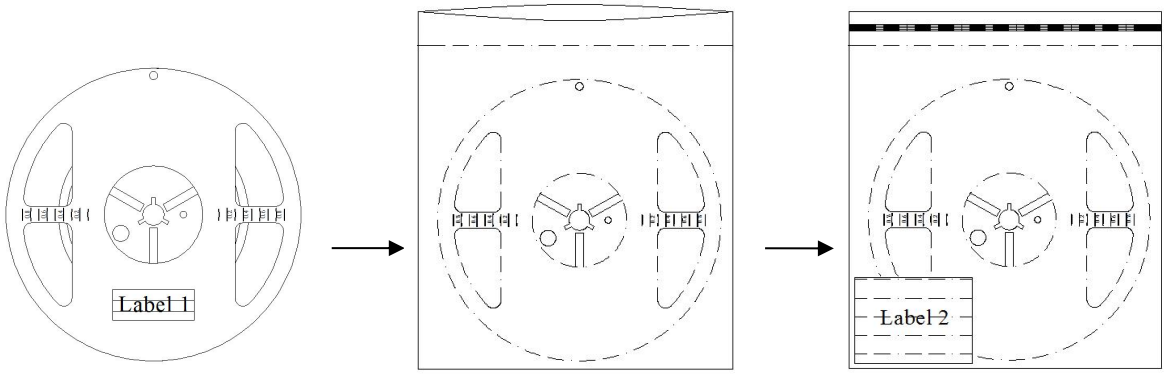
-Cover Tape: Conductive PET Base

Notes：

- ✓ Quantity：1000pcs/Reel
- ✓ All dimensions are in mm, Undefined tolerances are ±0.2mm

Labeling of Products

Reeled products packed in a sealed-off and moisture-proof aluminum bag with desiccants(Silica Gel)



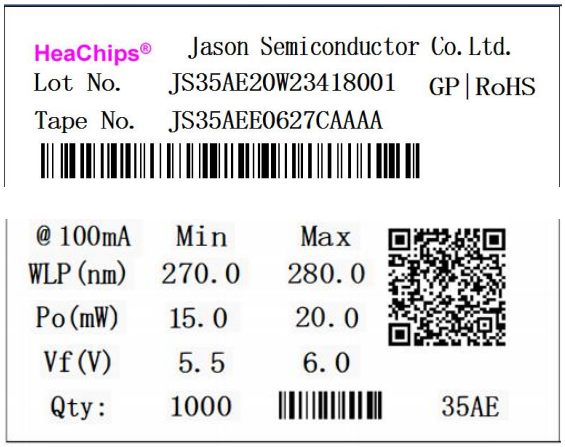
Taping Reel　　Aluminum moisture proof bag　　Vacuum Packing

Label

<Label 1>—size:30*60mm:

WLP(nm)	270.0	280.0	EA06
Po(mW)	15.0	20.0	
Vf(V)	5.5	6.0	
@100mA	Qty:	1000	

<Label 2 >– size:55*75mm:



Lot No. Indication:

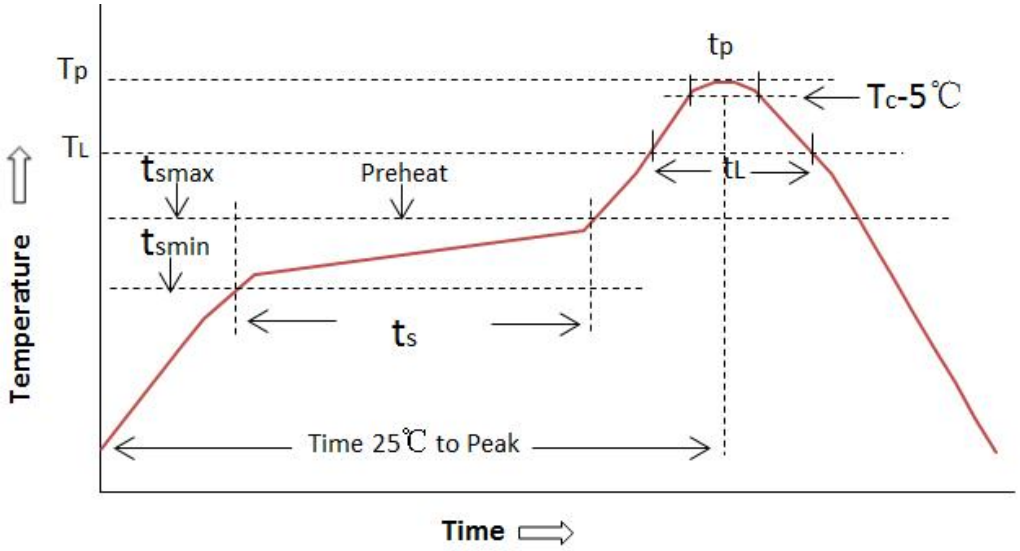
JS	35AE	20W	23418	001
Manufacturer Code	Product Model	Chip Model	Date	Serial No.

Tape No. Indication:

Tape No. Code	Description
JS	Manufacturer Code
35AE	Product Model
E06	Bin No.
27C	Peak Wavelength
A	Luminous Power Min.
A	Luminous Power Max.
A	Voltage Code
A	Parameter Grade
A	Appearance Grade

Reflow Soldering

The maximum tolerance temperature of the ball is 260℃ (short time), Reflow welding can be performed with high and low temperature solder welding. The parameters can be performed with reference to the JEDEC J-STD-020D standard. The temperature curve refers to the following chart.



Profile Feature	Sn-Pb Eutectic Assembly	Pb-Free Assembly
Ts_min	100℃	150℃
Ts_max	150℃	200℃
Ts(Ts_min to Ts_max)	60~120sec	60~120sec
Ramp-Up Rate（Ts_max To Tp）	3℃/sec Max	3℃/sec Max
Liquidus Temperature	183℃	217℃
Peak Temperature (Tp)	235℃	260℃
Peak temperature duration（Tp）	20 sec	30sec
Ramp-Down Rate	6℃/sec Max	6℃/sec Max
25 ℃ to peak temperature time	6 minutes Max	8 minutes Max

Notes：

- ✓ Temperature Profile should be the scene of the solder paste used type, proportion, reflow soldering equipment to change and adjust accordingly.
- ✓ Inappropriate reflux temperature, reflux time may cause the LEDs welding failure. Suggest to do more testing before mass production, to ensure optimum technological parameters.
- ✓ Reflow soldering should not be done more than two times.
- ✓ When soldering, do not put stress on the LEDs during heating.
- ✓ After soldering, do not warp the circuit board.

Cautions on Use

Moisture-Proof Package

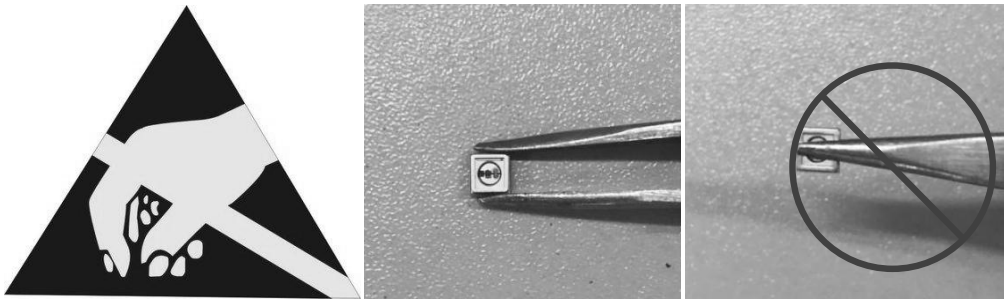
The moisture in the SMD package may vaporize and expand during soldering. The moisture can damage the optical characteristics of the LEDs due to the encapsulation.

During Storage

Conditions		Temperature	Humidity	Time
Storage	Before Opening Aluminum Bag	5℃~30℃	＜50%RH	Within 1 Year from the Delivery Date
	After Opening Aluminum Bag	5℃~30℃	＜60%RH	≤672hours
Baking		65℃±5℃	＜10%RH	10~24hours

During Usage

- The LED should avoid direct contact with hazardous materials such as sulfur , chlorine, phthalate, HF, etc.
- The metal parts on the LED can rust when exposed to corrosive gases. Therefore, exposure to corrosive gases must be avoided during operation and storage.
- Extreme environments such as sudden ambient temperature changes or high humidity that can cause condensation must be avoided.



Product cleaning

If the product needs to be cleaned, (IPA) is recommended as a cleaning agent for surface cleaning, Do not use any acid solution for surface cleaning, especially (BOE).

Suggestions for Circuit design

The distribution of current and voltage should be fully considered in the circuit design to avoid exceeding the absolute maximum rated parameters of the product. In order to ensure the best use effect, it is suggested to assign a resistor series connection to each product in the Matrix circuit.

Important Safety Guidelines

- Do not Look straight at the light when the LEDs are on.
- Be careful not to damage your eyes when observe the LEDs with optical instruments.