



HONGLI ZHIHUI
鸿利智汇

BYTECH

Technical Data Sheet

Specification

CMH268A4V145Z1V2-S4P1

(365nm)

RoHS

BYTECH

Bytech Electronics CO., Ltd is the first company in China to launch the real inorganic package UV LED devices and core components for application based on CMH technology.

CMH technology platform is a kind of package technology which adopts ceramic, metal, hard glass as package materials. CMH technology platform originates independent intellectual property owned by Bytech Electronics CO., LTD, which is suitable for vacuum encapsulation, especially suitable for ensuring reliability of deep UV products.



DESIGN	CHECKED	APPROVED
2018.01.05	2018.01.10	2018.01.10
XIONG	HE	TANG

By technology, for people.



Under Development	
Mass Production	●



ATTENTION
OBSERVE PRECAUTIONS
FOR HANDLING
ELECTROSTATIC
DISCHARGE
SENSITIVE
DEVICES



Features

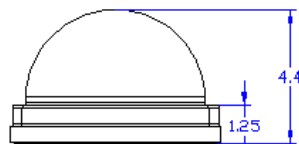
- CMH real inorganic package
- Dimension 7.0mm×7.0mm×4.4mm
- Long operating life
- High reliability
- Superior ESD protection
- RoHS compliant

Applications

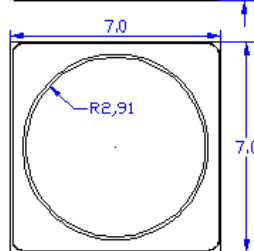
- Fluorescent spectroscopy
- Sensors and monitors
- Bio-analysis/detection
- Phototherapy
- UV curing
- Printing
- Coating

Package Dimensions (Unit: mm)

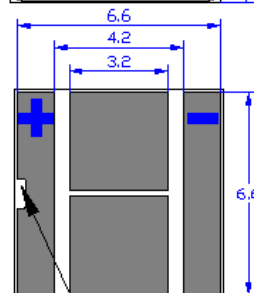
Side View



Top View



Bottom View



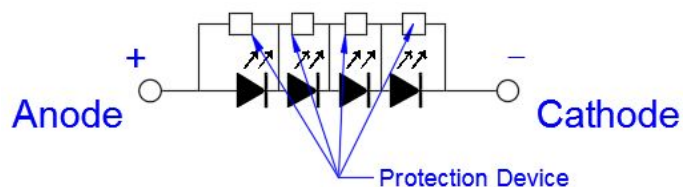
INDEX MARK

Tolerance : $\pm 0.20\text{mm}$

Product ID:

365nm: CMH268A4V145Z1V2-S4P1

Circuit:





Characteristics of UV LED

1. Electrical / Optical Characteristics (Ta=25°C,RH=40%)

Parameter	Symbol	Units	CMH268A4V145Z1V2-S4P1 (IF=1500mA)
Peak Wavelength [1]	λ_p	nm	360-370
Radiant Flux [2]	Φ_e [3]	mW	9000-10000
Forward Voltage [4]	VF	V	13.8-16.2
Thermal Resistance [5]	R _{th}	°C/W	1.0-2.0
Spectrum Half Width	$\Delta\lambda$	nm	14
View Angle	2 $\theta_{1/2}$	deg	60

Notes:

- [1].Peak wavelength measurement tolerance:±3nm
 [2].Radiant flux measurement tolerance:±10%
 [3]. Φ_e is the total radiant flux as measured with an integrated sphere
 [4].Forward voltage measurement tolerance:±3%
 [5].R_{th} is the thermal resistance between junction to substrate.

2. Absolute Maximum Ratings (Ta=25°C,RH=40%)

Parameter	Symbol	Units	CMH268A4V145Z1V2-S4P1
Maximum Rating Forward Current	I _{Fmax}	mA	1625
Maximum Rating Junction Temperature	T _{jmax}	°C	125
Operating Temperature Range	T _{opr}	°C	-10 ~ +85
Storage Temperature Range	T _{stg}	°C	-40 ~ +100

Notes:

Operating the LED beyond the listed maximum ratings may affect device's reliability and cause permanent damage.
 These or any other conditions beyond those indicated under recommended operating conditions are not implied.
 The exposure to the absolute maximum rated conditions may affect device reliability.



3.Ranks (IF=1500mA, Ta=25℃,RH=40%)

波长 (nm)	电压 (V)	光功率 (mw)					
		4000-5000	5000-6000	6000-7000	7000-8000	8000-9000	9000-10000
360-365	13.8-14.0	A4174	A4175	A4176	A4177	A4178	A4630
	14.0-14.2	A4179	A4180	A4181	A4182	A4183	A4631
	14.2-14.4	A4184	A4185	A4186	A4187	A4188	A4632
	14.4-14.6	A4189	A4190	A4191	A4192	A4193	A4633
	14.6-14.8	A4194	A4195	A4196	A4197	A4198	A4634
	14.8-15.0	A4199	A4200	A4201	A4202	A4203	A4635
	15.0-15.2	A4204	A4205	A4206	A4207	A4208	A4636
	15.2-15.4	A4209	A4210	A4211	A4212	A4213	A4637
	15.4-15.6	A4214	A4215	A4216	A4217	A4218	A4638
	15.6-15.8	A4219	A4220	A4221	A4222	A4223	A4639
	15.8-16.0	A4224	A4225	A4226	A4227	A4228	A4640
	16.0-16.2	A4229	A4230	A4231	A4232	A4233	A4641
	16.2-16.4	A4234	A4235	A4236	A4237	A4238	A4642
365-370	13.8-14.0	A4354	A4355	A4356	A4357	A4358	A4666
	14.0-14.2	A4359	A4360	A4361	A4362	A4363	A4667
	14.2-14.4	A4364	A4365	A4366	A4367	A4368	A4668
	14.4-14.6	A4369	A4370	A4371	A4372	A4373	A4669
	14.6-14.8	A4374	A4375	A4376	A4377	A4378	A4670
	14.8-15.0	A4379	A4380	A4381	A4382	A4383	A4671
	15.0-15.2	A4384	A4385	A4386	A4387	A4388	A4672
	15.2-15.4	A4389	A4390	A4391	A4392	A4393	A4673
	15.4-15.6	A4394	A4395	A4396	A4397	A4398	A4674
	15.6-15.8	A4399	A4400	A4401	A4402	A4403	A4675
	15.8-16.0	A4404	A4405	A4406	A4407	A4408	A4676
	16.0-16.2	A4409	A4410	A4411	A4412	A4413	A4677

Notes:

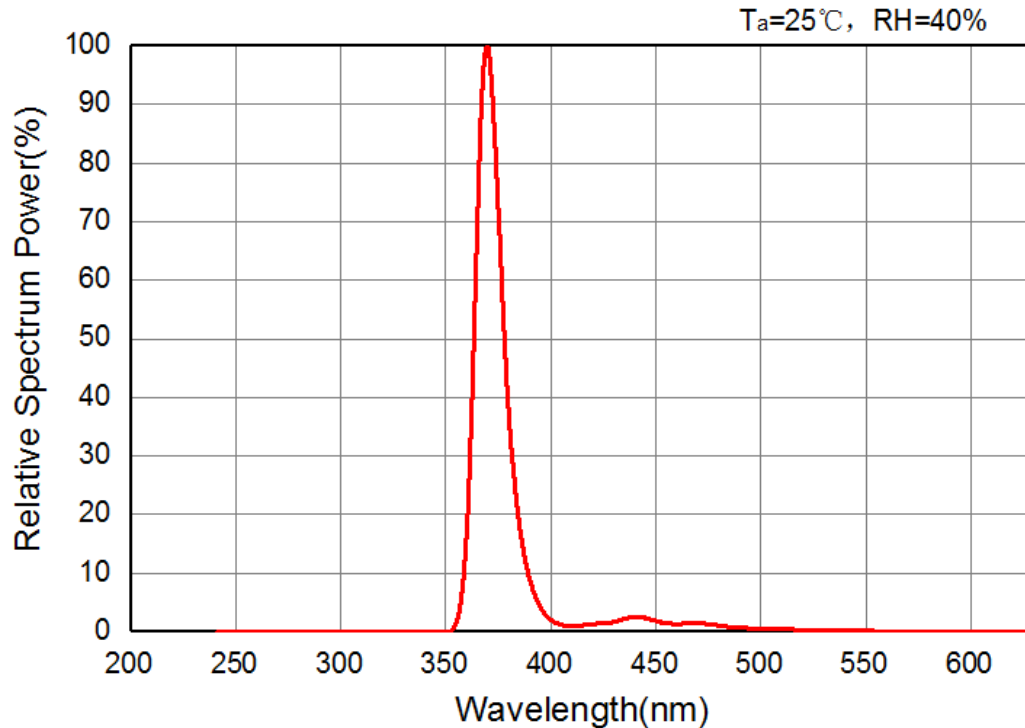
- *Forward voltage measurement tolerance:±3%
- *Radiant flux measurement tolerance:±10%
- *Φ_e is the total radiant Flux as measured with an integrated sphere
- *LEDs from the above ranks will be shipped.
- *The rank combination ratio per shipment will be decided by Bytech.
- *Peak wavelength measurement tolerance:±3nm



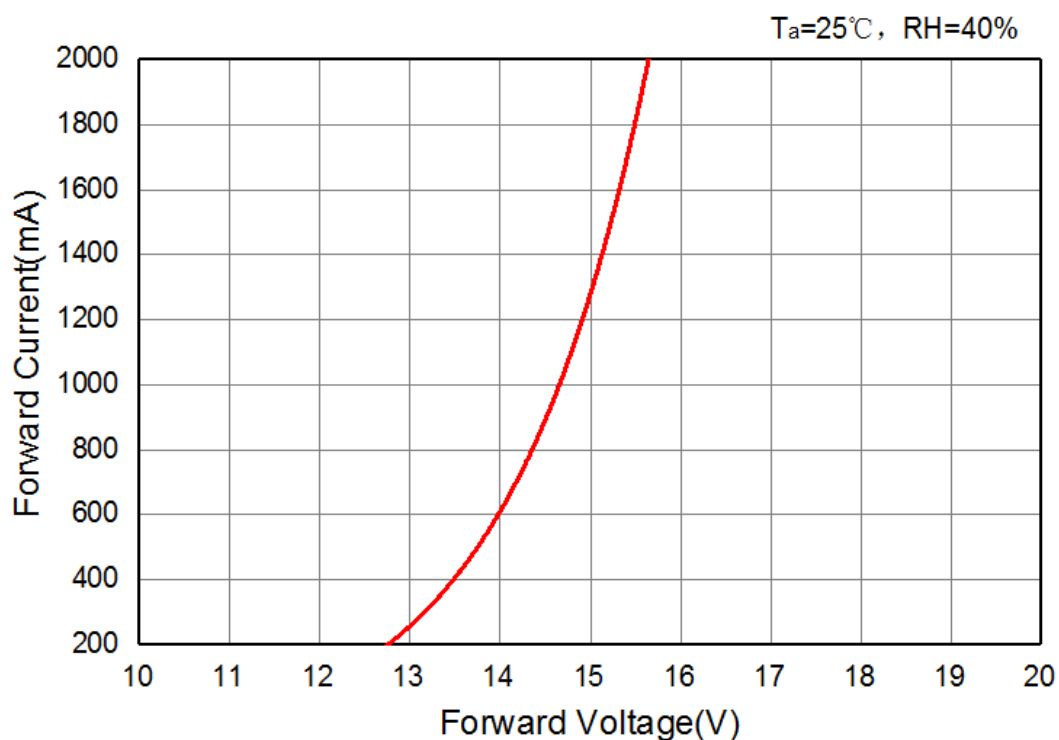
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Characteristics Diagrams

1. Relative Spectrum Power Distribution



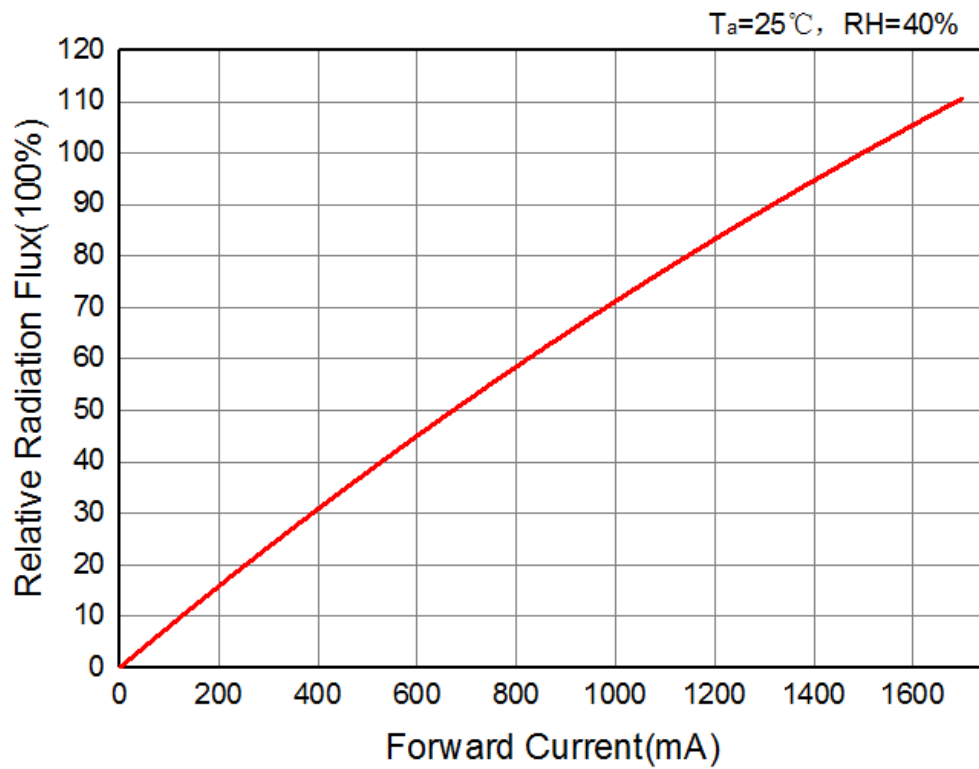
2. Forward Voltage vs Forward Current



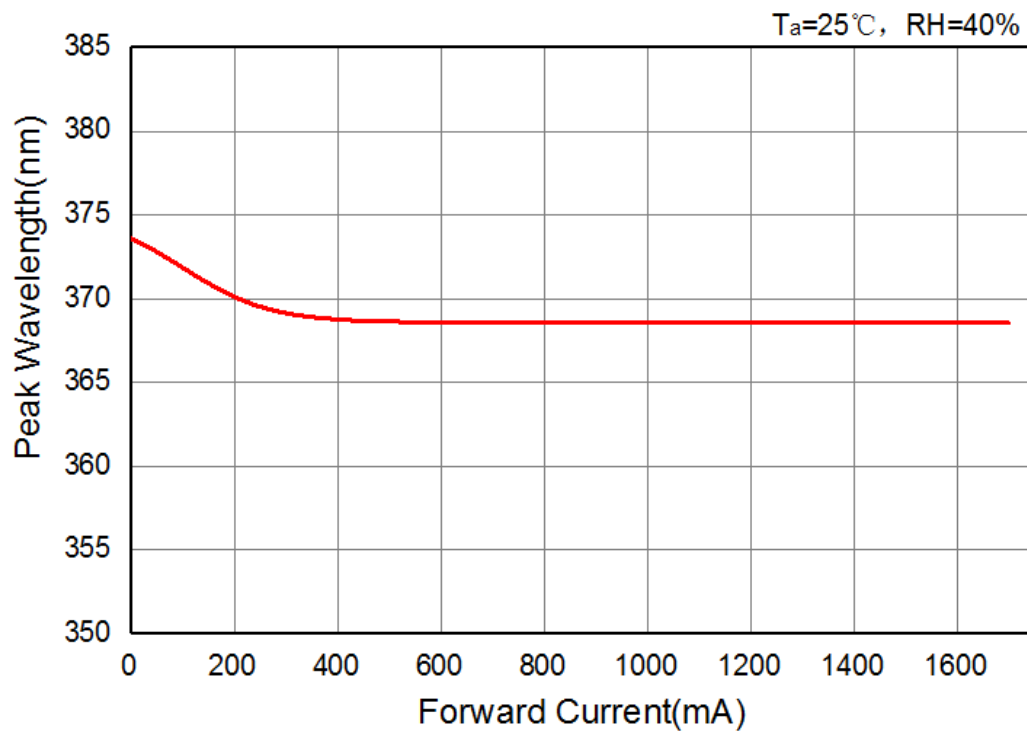


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3.Relative Radiation Flux vs Forward Current



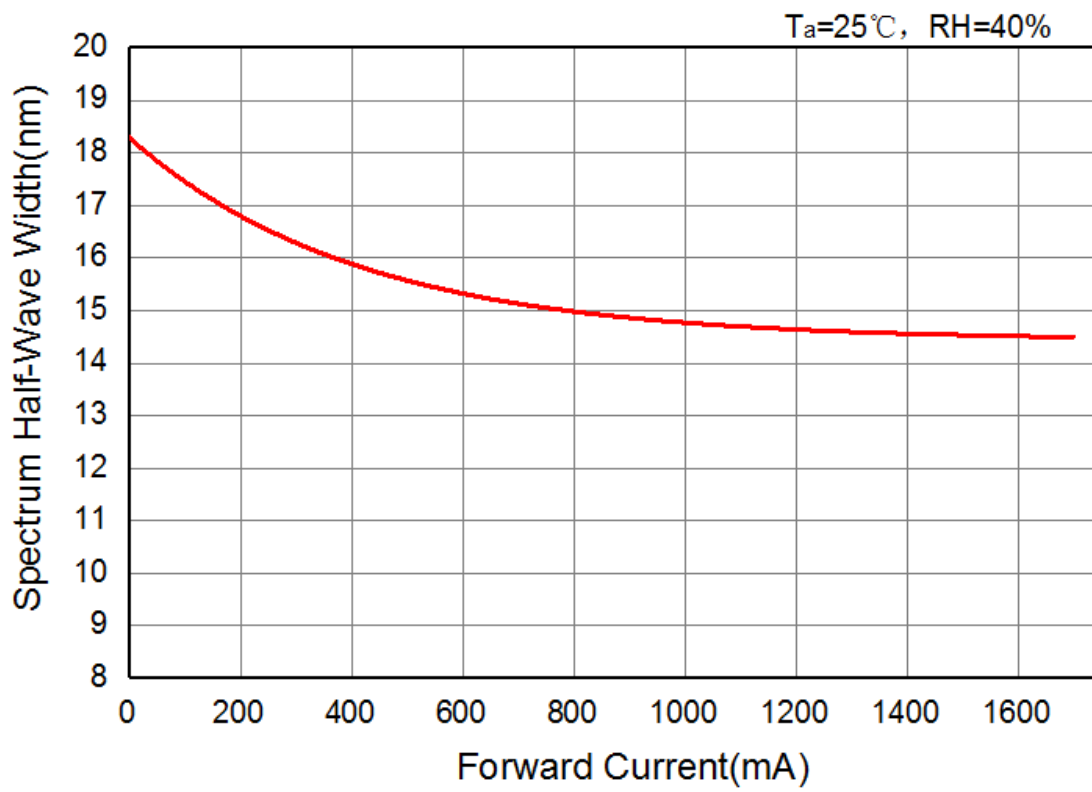
4.Peak Wavelength vs Forward Current



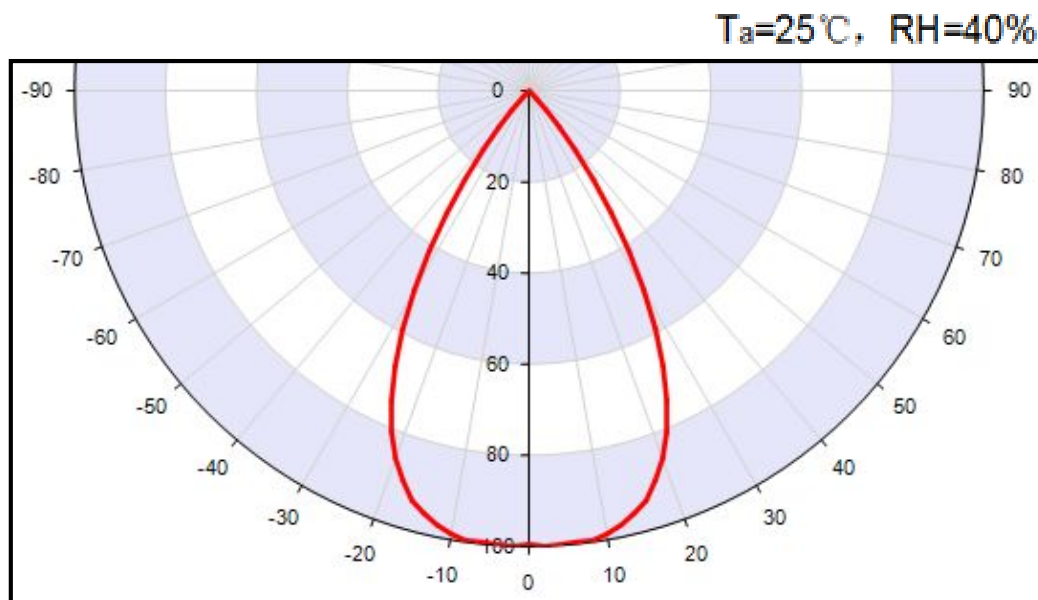


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5. Spectrum Half-Wave Width vs Forward Current



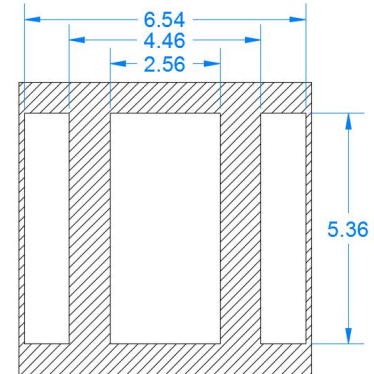
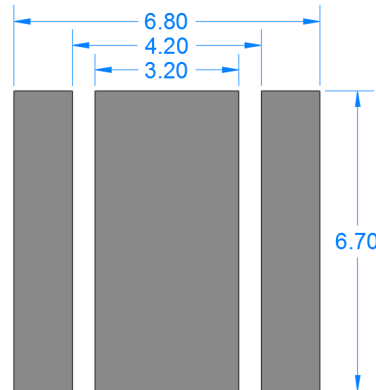
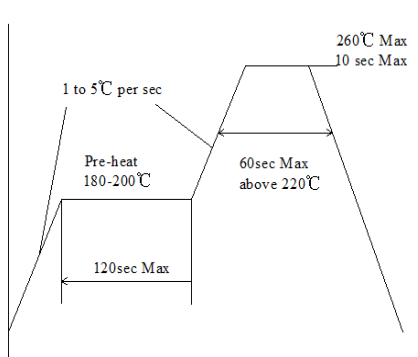
6. Spatial Distribution Graph





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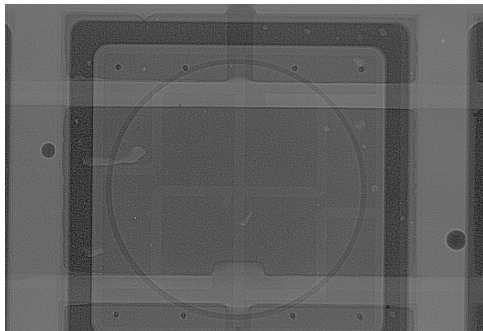
Product Application Information



Recommended Reflow Soldering Condition
(Lead-free solder)

Recommended Soldering pad Layout
(Unit: mm)

Recommended Soldering Mask Layout
Thickness: 0.12mm
(Unit: mm)



Recommended the void rate should be less than 15%; otherwise, Bytech cannot guarantee its reliability.

Notes:

- *This LED is designed to be reflow soldered on to a PCB. If dip soldered or hand soldered, Bytech cannot guarantee its reliability.
- *Recommended the void rate should be less than 15%; otherwise, Bytech cannot guarantee its reliability.
- *Reflow soldering must not be performed more than twice.
- *Avoid rapid cooling. Ramp down the temperature gradually from the peak temperature.
- *Nitrogen reflow soldering is recommended. Air flow soldering conditions can cause optical degradation, caused by heat and/or atmosphere.
- *Since the glass used in the encapsulating glass is fragile, do not press on the encapsulant glass. pressure can cause nicks, chip-outs, encapsulant delamination and deformation, and wire breaks, decreasing reliability
- *Repairing should not be done after the LEDs have been soldered.
It should be confirmed beforehand whether the characteristics of the LEDs will or will not be damaged by repairing.
- *The Die Heat Sink should be soldered to customer PCB. If it is difficult or impossible, use high heat-dissipating adhesive.
- *When soldering, do not apply stress to the LED while the LED is hot.
- *When using a pick and place machine, choose an appropriate nozzle for this product.
- *When flux is used, it should be a halogen free flux. Ensure that the manufacturing process is not designed in a manner Where the flux will come in contact with the LEDs.
- *Make sure that there are no issues with the type and amount of solder that is being used.

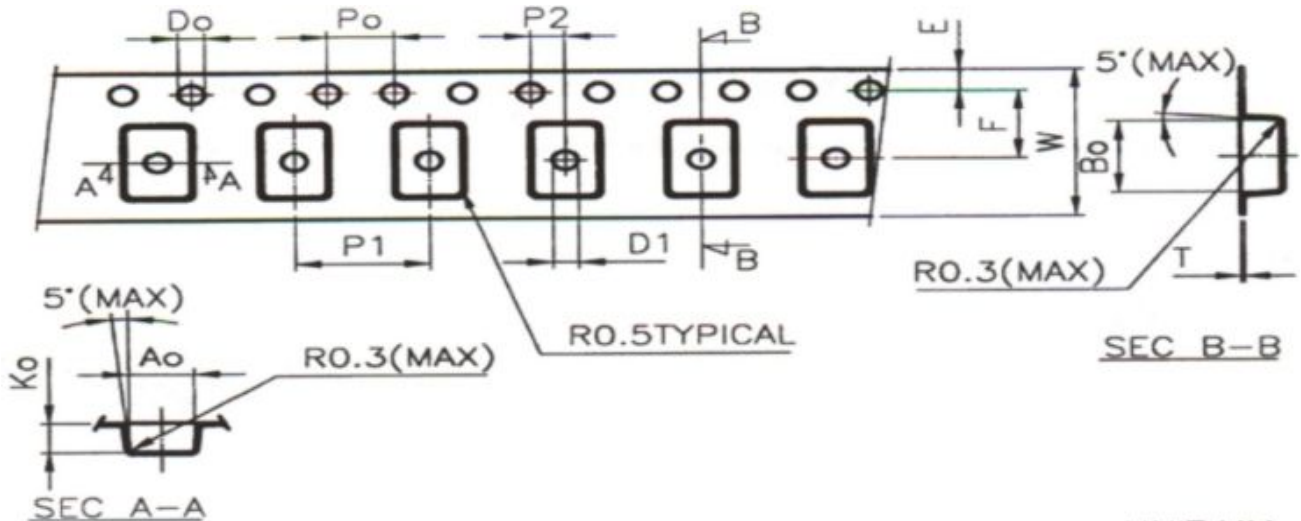


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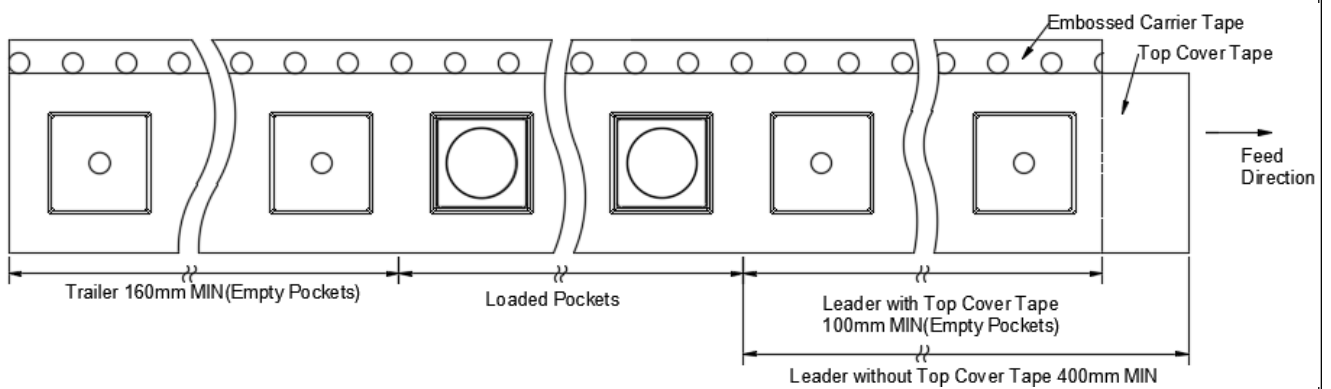
Packing Information

Unit : mm

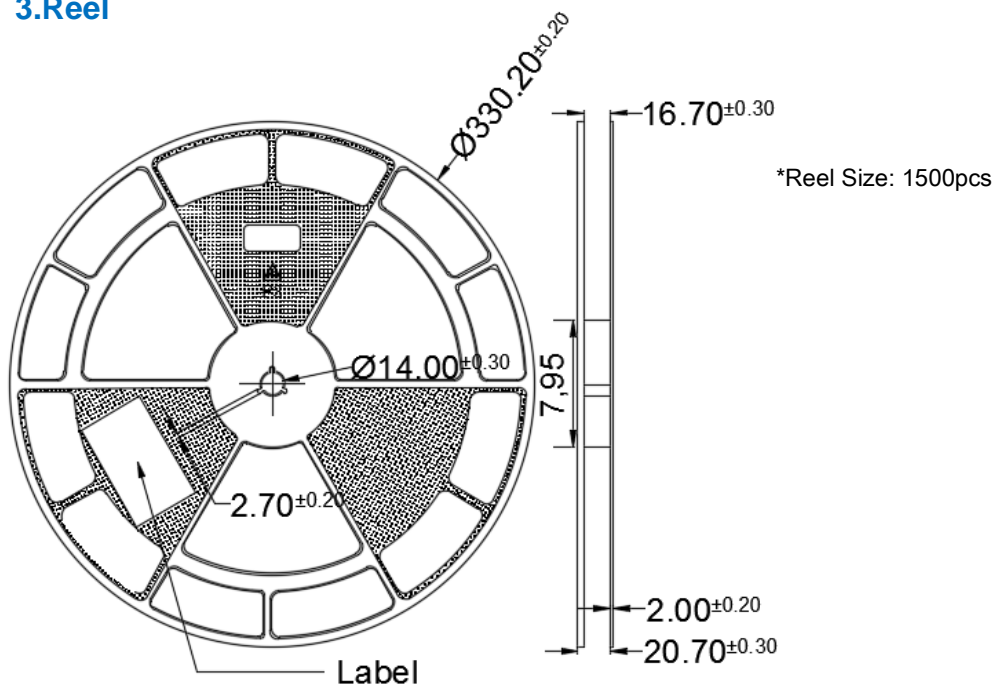
1.Tape



2.Trailer and Leader



3.Reel

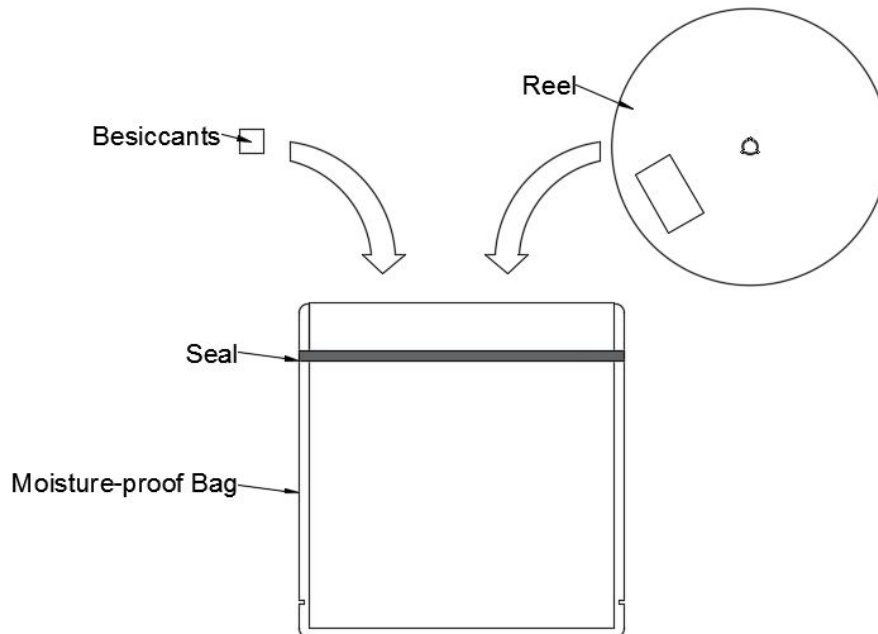




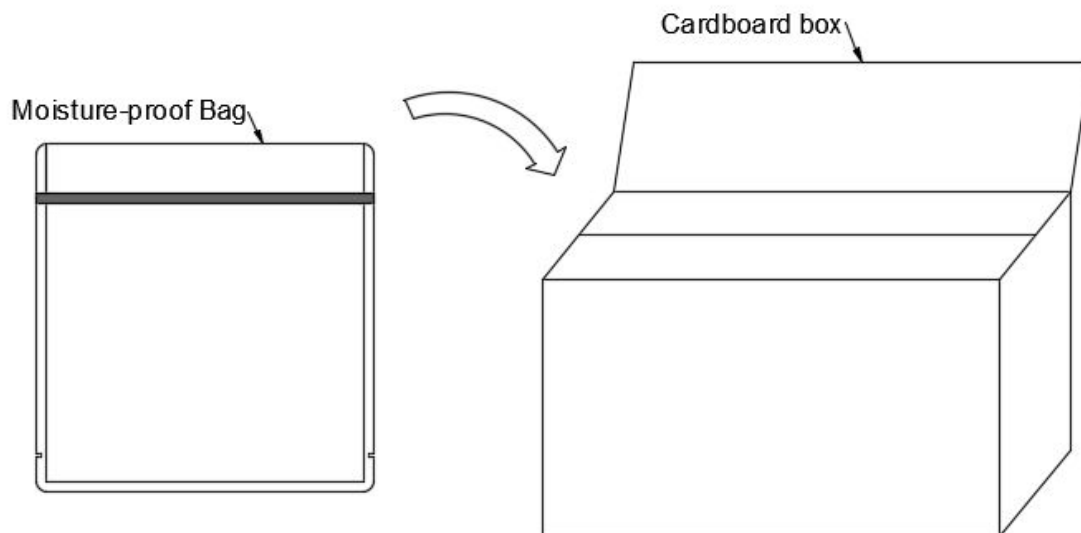
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Packing Information

4. Reels are shipped with desiccants in heat-sealed moisture-proof bags.



5. Moisture-proof bags are packed in cardboard boxes.





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CAUTIONS

1. Handling Precautions

- Do not handle the LEDs with bare hands as it will contaminate the LEDs surface and may affect the optical characteristics.
- When handling the product with tweezers, be careful not to apply excessive force to the glass. Otherwise, the glass can be cut, chipped, delaminate or deformed, causing wire-bond breaks and catastrophic failures.
- Dropping the product may cause damage.

2. Electrostatic Discharge (ESD)

- The product are sensitive to static electricity or surge voltage. ESD can damage a die and its reliability. When handling the products, the following measure against electrostatic discharge are strongly recommended:

Eliminating wrist strap, ESD footwear, clothes, and floors

Grounded workstation equipment and tools

ESD table/shelf mat made of conductive materials

- Ensure that tools, jigs and machines that are being used are properly grounded and that proper grounding techniques are used in work areas. For devices/equipment that mount the LEDs, protection against surge voltages should also be used.

- The customer is advised to check if the LEDs are damage by ESD

When performing the characteristics inspection of the LEDs in the application.

Damage can be detected with a forward voltage measurement at low current($\leq 1\text{mA}$).

3. Eye Safety

- Please proceed with caution when handling any UVLEDs driven at low or high current. Since UV light can be harmful to eyes, do Not look directly into the UV light, even through an optical instrument.
- UV protective glasses are required to use in order to avoid damage by UV light in case of viewing UV light directly.





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History of Revision

Revision	Date	Contents of Revision Change	Remark
REV NO: 1.0	2018.01.05	New Establishment	
REV NO: 2.0	2018.04.08	Increase the ranks	