

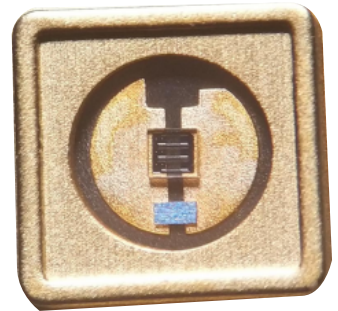
DATA SHEET

ES-3535-106V-XX-UV-275

ES-3535-106V-XX-UV-275 Datasheet



Everstar 3535 Deep Ultraviolet series is a highly reliable and grade ceramic substrate, is widely applied to sterilization and purification in the field of industry and medical with very low calorific value and high optical power. Its light efficacy is up to 12.0 mw with higher forward currents. This series is optimized for UV Sterilizers, UV curing, and Germicidal lamps, etc.



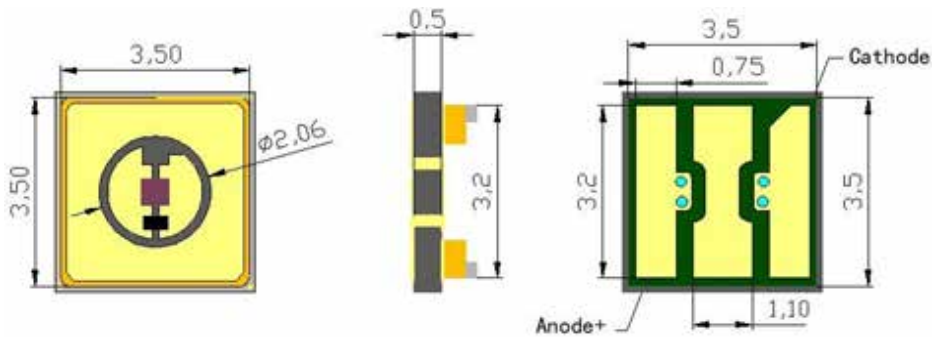
FEATURES

- Extremely wide viewing angle
- Suitable for all SMT assembly and Solder process
- Available on tape and reel
- Ceramic Substrate
- RoHS compliant
- Super Effective; Energy Saving; Environment Friendly.

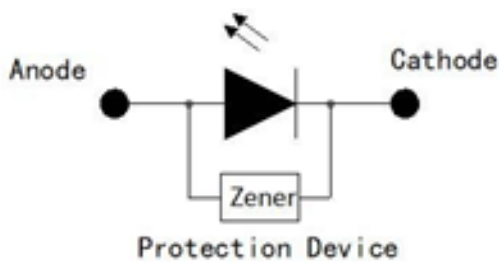
APPLICATIONS

- Air&Water Purification;
- Disinfection/Sterilization;
- Medical treatment and Personal Care;
- Ink Curing&Nail Curing;
- Bio-analysis/detection;

TOLERANCE +/-0.2mm



ELECTRICAL CONNECTION



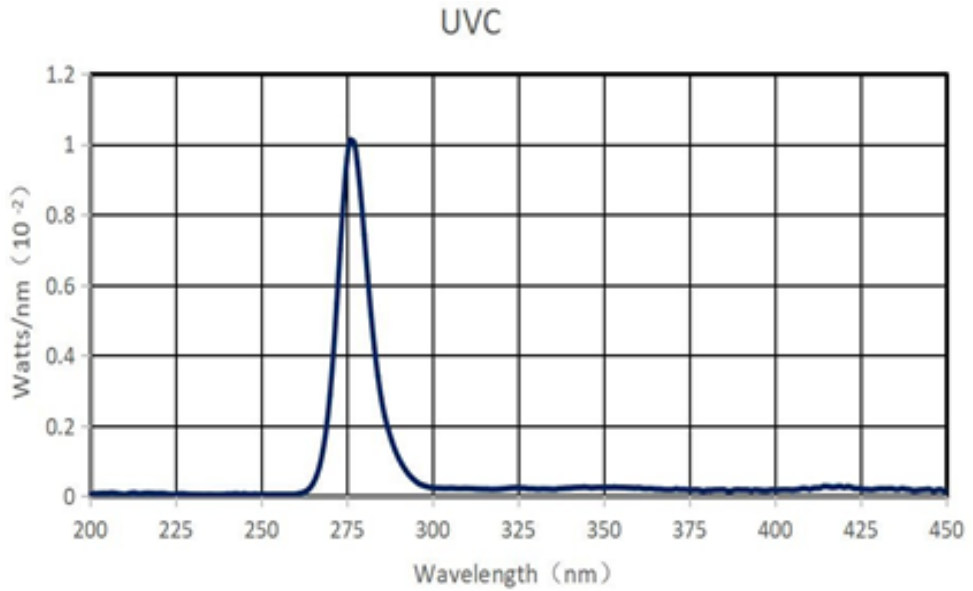
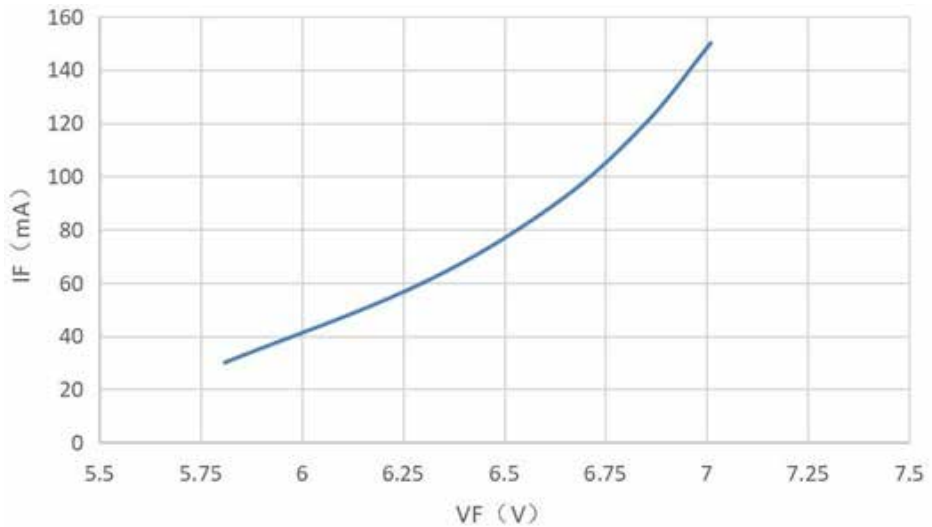
Zener diode is only used to provide ESD protection to prevent UVC LED chip from electrostatic breakdown

CHARACTERISTIC

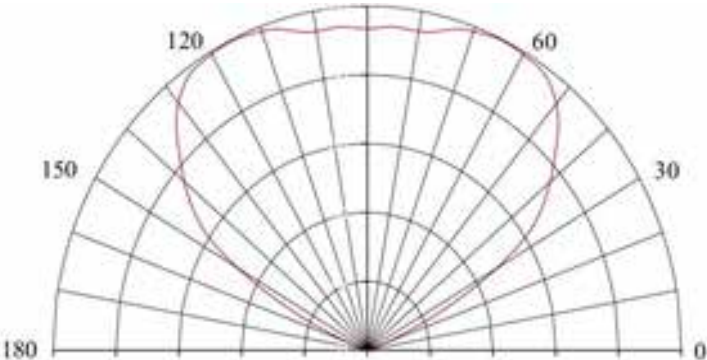
Characteristics	Unit	Min	Typical	Max
Dimension L*W	mm		3.5*3.5*1.5	
Beam Angle θ	deg.		120	
Half-wavelength $\Delta\lambda$	nm	8	11	14
Wavelength λ_p	nm	270	275	280
Optical Power	mW	10		12
Power Dissipation	W		1	
DC Forward Current IF	mA	5.0	150	180
Forward Voltage VF	V	-30	6.0	8.0
Operating Temperature Top	°C	-40		+65
Storage Temperature Tst	°C			+85
Junction Temperature Tj	°C			90
ESD (HBM)	V			2000
Reflow Soldering (Lead-Free) ST	°C			260

SPECIFICATIONS ($T_c = 25^\circ\text{C}$)

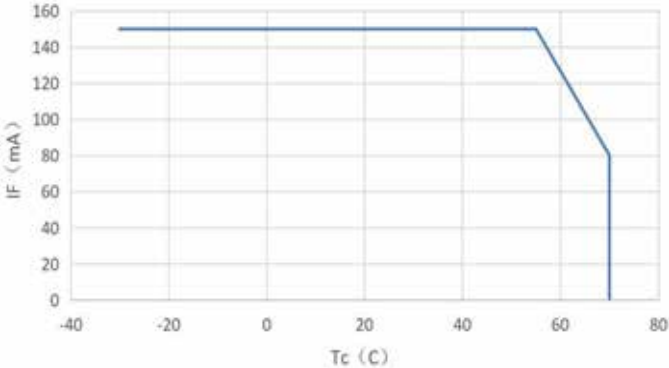
Product Type	Part Number	Viewing Angle (°)	Wavelength (λ_p nm)	$\Delta\lambda$ (nm)	Optical Power (mW)	VF (V)	IF (ma)
Deep UV LED	ES-3535-106V-XX-UV-275	120	275±5nm	11±3nm	10-12	5.0-8.0	150

SPECTRAL FEATURES ($T_c = 25^\circ\text{C}$)ELECTRICAL FEATURES ($T_c = 25^\circ\text{C}$)

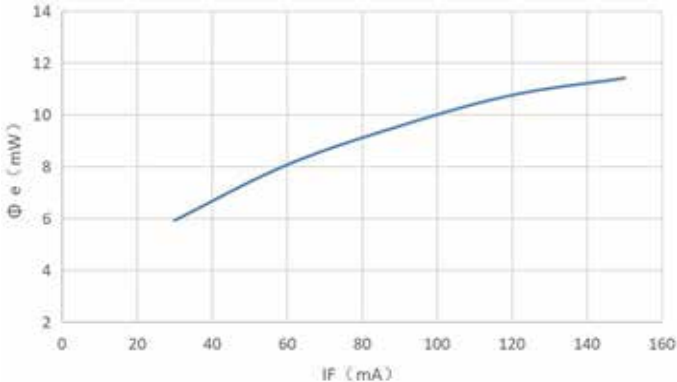
TYPICAL SPATIAL DISTRIBUTION ($T_c = 25^\circ\text{C}$)



DERATING CURVE ($T_c = 25^\circ\text{C}$)



RELATIVE POWER VS CUREENT ($T_c = 25^\circ\text{C}$)



RELIABILITY TEST

Test Items	Test Conditions
Indoor Temperature Aging Test	1W/IF=150mA Ta=25°C×1000hrs
High Temperature Aging Test	1W/IF=150mA Ta=85°C×1000hrs
High Temperature Storage	100°C × 1000 hours
Low Temperature Storage	-30°C × 1000 hours
High Temp & Humidity	IF=150mA 85°C, 85 %RH for 1000 hours
Temperature Shock/Cycle	-45°C × 15 minutes – +85°C × 10 minutes, 200 cycle
ESD (HBM)	4000V HBM/Time

CRITERIA FOR JUDGING LED FAILURE(Tc=25°C)

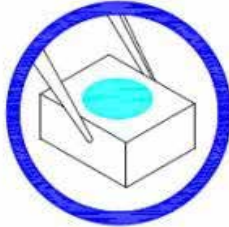
Item	Symbol	Test Condition	Criteria for Judging LED Failure
Forward Voltage	V _F	0.5W/IF=150mA	L.S.L.x0.9-U.S.L.x1.1
Optical Power	φ _v	0.5W/IF=150mA	L.S.L.x0.7-U.S.L.x1.3
*U.S.L.:Upper Standard Level L.S.L.:Lower Standard Level			

HANDLING PRECAUTIONS

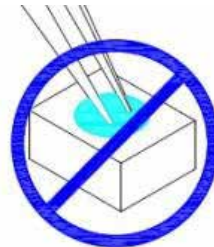
Compare to epoxy encapsulant that is hard and brittle, silicone is softer and flexible. Although its characteristic significantly reduces thermal stress, it is more susceptible to damage by external mechanical force. As a result, special handling precautions need to be observed during assembly using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

Failure to comply might lead to damage and premature failure of the LED.

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



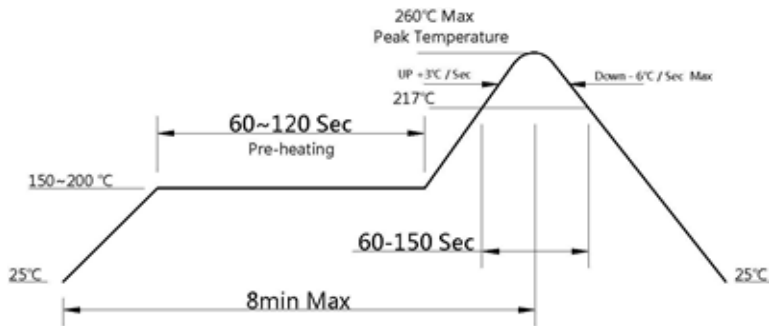
2. Do not directly touch or handle the silicone lens surface. It may damage the internal circuitry



3. Do not stack together assembled PCBs containing LEDs. Not available in the situation of acidity for PH Impact may scratch the silicone lens or damage the internal circuitry



- 1) Heat stress during soldering will influence the reliability of LEDs, however that effect will vary with heating method. Also, if components with different shapes need to be mounted together, it is recommended to set the soldering pad temperature according to the component most vulnerable to heat stress (ex. chip type LED)
- 2) The LEDs constituent parts, including the resin, do not stabilize immediately after the soldering. Any mechanical stress may cause damage to the products. Please avoid stacking the PCBs, or any other storage method which may cause the PCBs to bend, also, prevent contact of LED with any materials.
- 3) The recommended temperature profile for reflow soldering is listed as the top surface temperature. This is due to the fact that temperature distribution varies on heating method, PCB material, other components in the assembly, and concentration of the parts mounted. Typically, when FR-4 PCB is mounted with one single LED and heated via far infrared and hot air, the difference in temperature between PCB and LED resin will be around 5-10°C. Please do not repeat the heating process during reflow more than three times.



Notes1: Temperature Profile for the reflow should be set to LED top resin surface temperature, which is the maximum temperature for Soldering

Notes2: The reflow soldering process should be done max2 times. The interval between first and second process should be as short as possible to prevent absorption of moisture to LED resin. Please cool down the LED temperature at room temperature after soldering, then start the second process.

- 4) When using a metal PCB, the solder may crack and problems may occur due to major stress on the soldered portion caused by thermal shock. Please carry out a thorough advance verification before use. For the metal PCB's insulation, it is recommended to use stress-reducing materials.
- 5) The products can not be used for hand soldering and dipping (Through the Wave) soldering .
- 6) When cleaning, using isopropyl alcohol is recommended. Some chemicals, including Freon substitute detergent could corrode the surface or the products, which cause discoloration, clouding, crack and so on. If water is used to clean (including the final cleaning process), please use pure water (not tap water), and completely dry the LED before using. Cleaning with ultrasonic is not recommended.