

IBT-L6868-UV-395nm

UV 395nm LED



Product Descriptions

- This product is UVA LED diode.
- Package size: 7.0X 7.0X 4.9mm.
- quartz glass package.
- Wavelength: 390 - 400 nm.
- The package design coupled with careful selection of component materials allows the products to perform with good reliability.

Features:

- High power UVA LED with emission wavelength between 390nm and 400nm
- Compact form factor: 7.0mm x 7.0 mm package
- Beam angle of 60 degrees
- High Reliability package
- Standard SMD process
- RoHS and REACH compliant

Applications

- Dental Curing
- Inking Whitening
- Printing

L6868-UV Binning Structure

L6868-UV LEDs are tested for radiometric flux and wavelength at a drive current of 2400mA, 20ms single pulse at 25 °C and placed into one of the following radiometric flux (FF) and wavelength (WWW) bins:

Radiometric Flux Bins

Flux Bin (FF)	Minimum Flux (mW)	Maximum Flux (mW)
61	8500	9000
62	9000	9500
63	9500	10000
64	10000	12500

Wavelength Bins

Wavelength Bin (WWW)	Minimum Wavelength (nm)	Maximum Wavelength (nm)
UF	360	365
UG	365	370
UH	370	375
UI	375	380
UJ	380	385
UK	385	390
UL	390	395
UM	395	400
UN	400	405
UO	405	410

Note 1: Luminus maintains a +/- 10% tolerance on flux measurements and +/- 2 nm on wavelength measurements.

Note 2: Individual bins are not orderable. Please refer to product ordering information on page 3 for a list of ordering part numbers.

**IBT****IBT-L6868-UV-395nm
Product Datasheet****Part Number Nomenclature****IBT — L6868 — <UV> — <A> — <###>**

Product Family	Package Type	Color	Wavelength	Bin kit
IBT: UV L6868	6868: 6.8 mm x 6.8mm	Ultraviolet	320 - 405nm	Flux and Wavelength bin kit code - See ordering information

Ordering Part Numbers

The table below lists ordering part numbers available for IBT-L6868-UV-395nm LEDs. The part number includes a bin kit, a group of flux and wavelength bins described in page 2, that are shippable for a given ordering part number. **Individual flux or wavelength bins are not orderable**. Flux bin listed is minimum bin shipped - higher bins may be included at Luminus' discretion.

Wavelength Range	Wavelength Bins	Radiometric Flux		Ordering Part Number
		Bin Kit Flux Code	Min. Flux	
390-400nm	UL, UM	61	8500	IBT-L6868-UV-395nm-UL61-00
		62	9000	IBT-L6868-UV-395nm-UM62-00

Optical and Electrical Characteristics

Parameter	Symbol	Typical	Unit
Forward Current	I_f	2400	mA
Output Radiant Power	P_{opt}	9500	mW
Minimum Forward Voltage	V_{f-min}	6.5	V
Typical Forward Voltage	V_{f-typ}	7.2	V
Maximum Forward Voltage	V_{f-max}	7.8	V
Wavelength	λ_p	390-400	nm
Reverse Current($V_R=10\mu V$)	I_R	10	μA
FWHM	$\Delta\lambda$	13-15	nm
Viewing Angle	$2\theta_{1/2}$	60	°
Thermal Resistance (junction-solder point)	R_{th}	0.6	°C/W

Absolute Maximum Ratings

Parameter	Symbol	Value	Unit
Maximum Forward Current	I_{f-max}	3200	mA
Junction Temperature	T_j	120	°C
Operating Temperature	T_{opr}	-30 ~ +60	°C
Storage Temperature	T_{stg}	-30 ~ +80	°C

Note1: Ratings are based on operation at a constant junction temperature of $T = 25^\circ C$ Test conditions: 2400 mA, 20 ms pulse at $25^\circ C$

Note2: Tolerance: $V_f: \pm 0.1V$, $I_V: \pm 5\%$, $\lambda_p: \pm 3nm$.

Note3: L6868-UV-395nm LEDs are designed for operation up to an absolute maximum forward drive current as specified above. Product lifetime data is specified at typical forward drive currents. Sustained operation at absolute maximum currents will result in a reduction of device lifetime compared to typical forward drive currents. Actual device lifetimes will also depend on junction temperature.

Note4: Caution must be taken not to stare at the radiation emitted from UV LEDs.



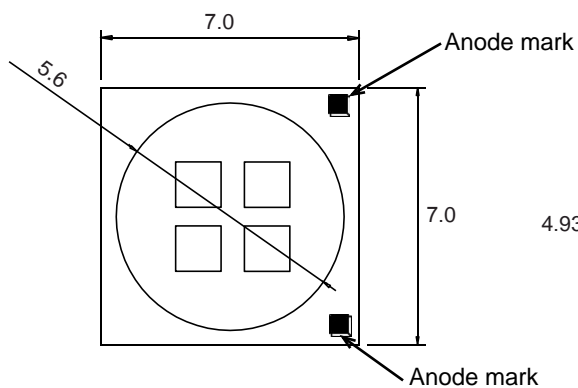
IBT

IBT-L6868-UV-395nm

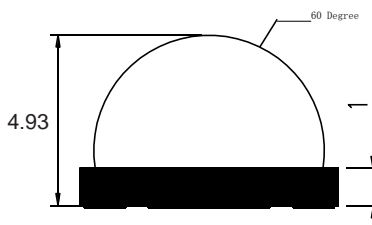
Product Datasheet

Mechanical Dimensions

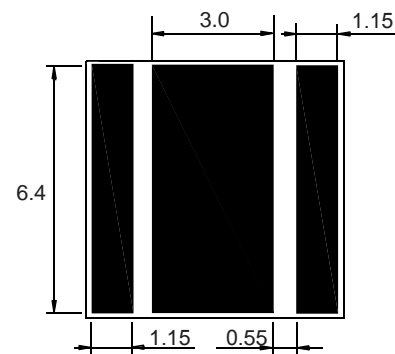
Top View



Side View

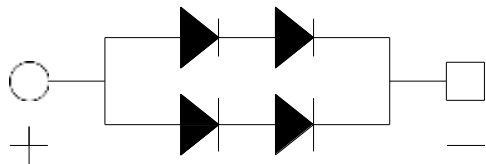


Bottom View

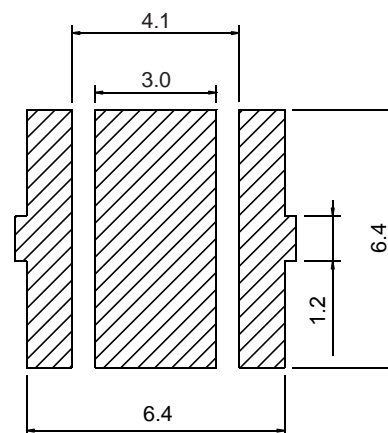


(Tolerance: ± 0.2 , Unit: mm)

Circuit



Recommend Soldering Padlayout

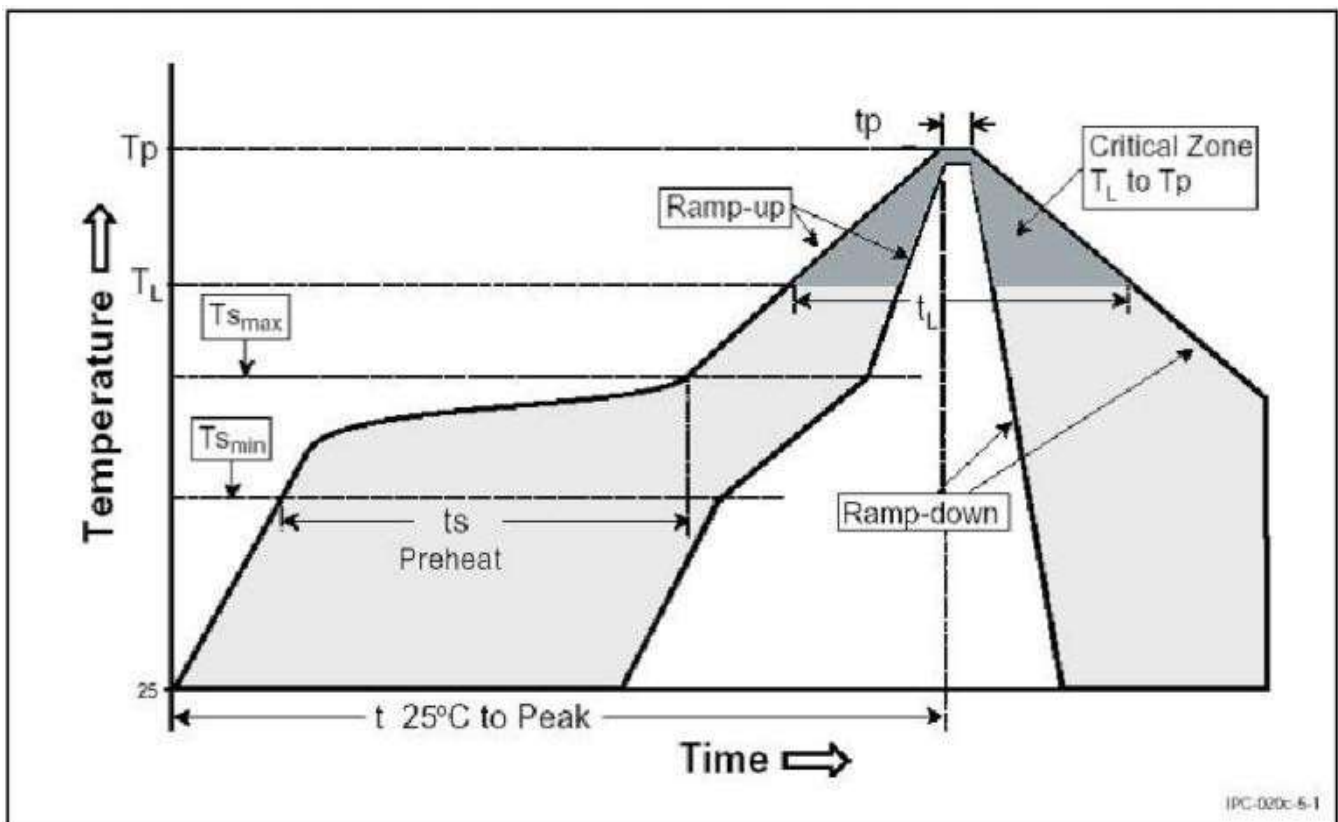




Soldering Profile

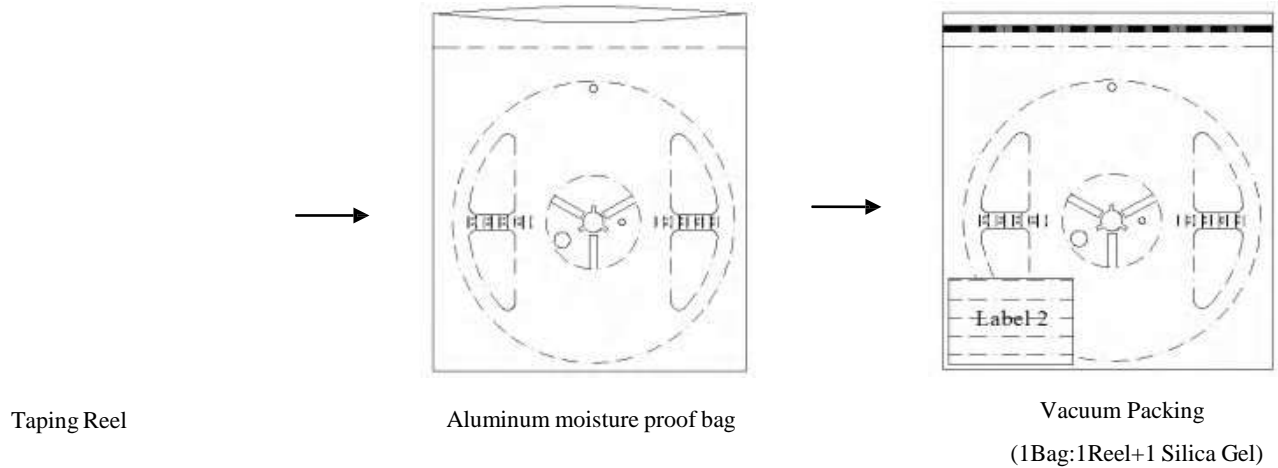
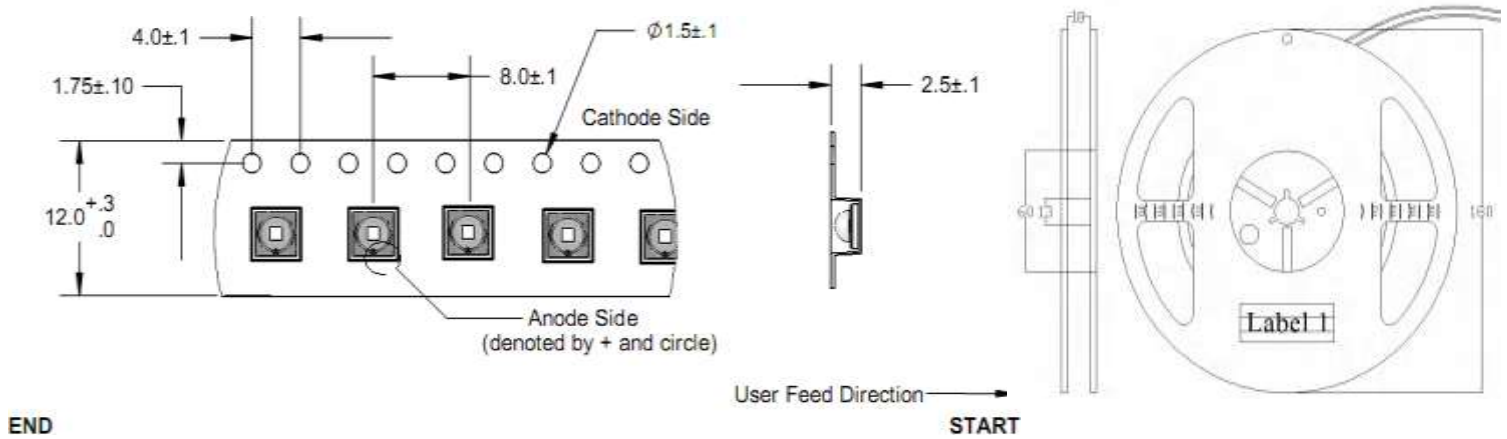
Profile Setting	Pb-Free Profile
Average Ramp-up Rate ($T_{s_{max}}, T_p$)	1 °C/sec
Preheat Temperature Min ($T_{s_{min}}$)	100-150 °C
Preheat Temperature Max ($T_{s_{max}}$)	180-200 °C
Preheat Time ($t_{s_{min}} \text{ to } t_{s_{max}}$)	60-120 sec
Liquidus Temperature (T_L)	260 °C
Time Maintained Above T_L (t_L)	50-80 sec
Peak / Classification Temperature (T_p)	260 °C
Time within 5°C of Actual Peak Temp (t_p)	Max 10 sec
Ramp-Down Rate	2-3 °C /sec
25°C to Peak Temperature time	4 mins

IBTLED recommends that users follow the recommended soldering profile provided by the manufacturer of the solder paste used. Note that this general guideline may not apply to all PCB designs and configurations.

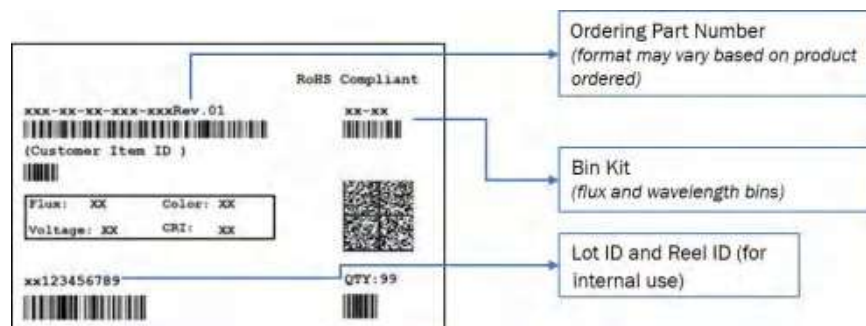


Product Shipping & Labeling Information

All L6868 products are packaged and labeled with their respective bin as outlined in the tables on pages 2 & 3. Each reel will only contain one flux and one wavelength bin



L6868-UV Label Information



Precautions for storage, handling and use of UV LEDs

1. UV Light

L6868-UV LEDs are short wavelength, deep UV LEDs. During operation, the LED emits high intensity UV radiation, which is harmful to skin and eyes. UV light is also hazardous to skin and may cause cancer. Avoid exposure to deep UV light when LED is operational.

Precautions must be taken to avoid looking directly at the UV light without the use of UV light protective glasses. Do not look directly at the front or at the LED's lens when LED is operational.

2. Static Electricity (ESD)

While L6868 LEDs have built-in Zener protection diodes, they are particularly sensitive to ESD (Electrostatic Discharge). Static electricity and surge voltages seriously damage UV LEDs and can result in complete failure of the device. Precautions must be taken against ESD when handling or operating these devices.

3. Operating Conditions

In order to ensure the correct functioning of these LEDs, compliance to maximum allowed specifications is important. UV LEDs are particularly sensitive to drive currents that exceed the max operating specifications and may be damaged by such drive currents. The use of current regulated drive circuits is strongly recommended when operating these devices. Customers should also provide adequate thermal management to ensure LEDs do not exceed maximum recommended temperatures. Operating LEDs at temperatures in excess of specification will result in damage and possibly complete failure of the device.

**IBT**

History of Changes

Rev		Description of Change
01	09/07/2018	Initial Release
02	09/07/2018	Tape and Reel drawing
03	30/11/2021	Model No. & Bin Code