UV-CHIPS-1020A UV LED Chip Specification Sheet

Manufacturer: Anhui UV-CHIPS Semiconductor Technology Co., Ltd.

Product Model: UV-CHIPS-1020A

Product Type: Surface Mount UV LED Chip

Chip Format: 1020mil

Revision: Official Release



1. Features & Applications

1.1 Key Features

- Broad peak wavelength range: 250 – 320 nm
- Compact chip dimensions: 460.0 × 230.0 × 250.0 μm
- AuSn (Gold-Tin alloy) P & N electrodes for high reliability
- Sapphire substrate with AlGaN/AlN/GaN MQW epitaxial structure
- Precision multi-parameter binning (voltage, power, wavelength)
- Compatible with high-volume SMT assembly

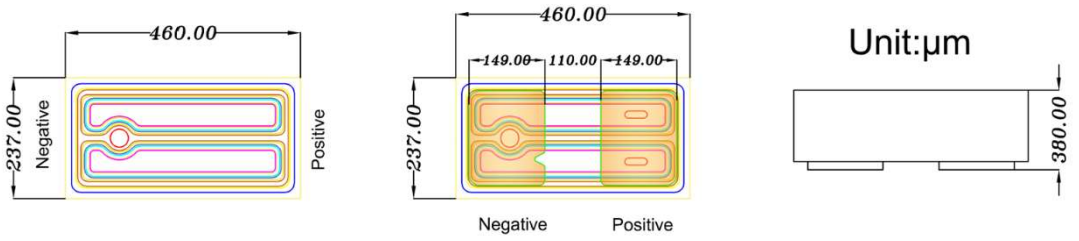
1.2 Typical Applications

- Water sterilization systems & portable purifiers
- Air purification & HVAC disinfection modules
- Surface disinfection & medical sterilization equipment
- UV curing for adhesives, inks and coatings
- Laboratory analytical instruments & photochemical reactors
- Portable consumer sterilization products

2. Mechanical Dimensions & Structure

Reference Condition: Ta = 25°C

Parameter	Value	Tolerance	Unit
Chip Size (L × W)	460.0 × 230.0	±25.0	μm
Chip Thickness	250.0	±20.0	μm
P Pad Size	148.0 × 182.0	±25.0	μm
N Pad Size	148.0 × 182.0	±25.0	μm
Pad Spacing	110.0	±25.0	μm
Substrate Material	Sapphire	—	—
Epitaxial Structure	AlGaN/AlN/GaN MQW	—	—
P Electrode	AuSn	—	—
N Electrode	AuSn	—	—



3. Absolute Maximum Ratings

Ta = 25°C unless otherwise noted

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
DC Forward Current	IF	TC = 220°C	—	40	80	mA
Junction Temperature	Tj	—	—	—	85	°C
Operating Temperature	Topr	—	-30	55	60	°C

4. Electro-Optical Characteristics

Standard Test Condition: Ta = 22°C, If = 40 mA

Parameter	Symbol	Unit	Min.	Typ.	Max.
Peak Wavelength	λp	nm	250	—	320
Radiant Flux	Φe	mW	6	—	12
Forward Voltage	VF	V	4.8	5.2	6.0
Spectrum Half-Width	Δλ	nm	11	12.3	13

5. Parameter Binning Specifications

5.1 Forward Voltage Binning

Test Condition: Ta = 22°C, If = 40 mA

Level	A01	A02	A03	A04	A05	A06
Min. Voltage (V)	4.8	5.0	5.2	5.4	5.6	5.8
Max. Voltage (V)	5.0	5.2	5.4	5.6	5.8	6.0

5.2 Radiant Power Binning

Test Condition: Ta = 22°C, If = 40 mA

Level	B01	B02	B03	B04	B05
Min. Power (mW)	6.0	8.0	10.0	12.0	14.0
Max. Power (mW)	8.0	10.0	12.0	14.0	16.0

5.3 Dominant Wavelength Binning

Test Condition: Ta = 22°C, If = 40 mA

Level	C255	C265	C275	C285	C295	C310	C315
Min. Wavelength (nm)	250.0	260.0	270.0	280.0	290.0	300.0	315.0
Max. Wavelength (nm)	260.0	270.0	280.0	290.0	300.0	315.0	320.0

6. Notes

1. Peak wavelength tolerance: ±3.5 nm
2. Radiant flux measurement tolerance: ±10%
3. Forward voltage tolerance: ±10%
4. All characteristics are measured and calibrated by ROOTIN under standard test conditions.

7. Manufacturer Information

Company Name: Anhui UV-CHIPS Semiconductor Technology Co., Ltd.

Address: Fengshu Street, Liufan Village, Liufan Township, Taihu County, Anhui Province, China

Tel: +86 400-860-1710

Fax: +86 0556-4371082

Website: www.ahuvc.cn