UV-CHIPS-2020A UV LED Chip Specification Sheet

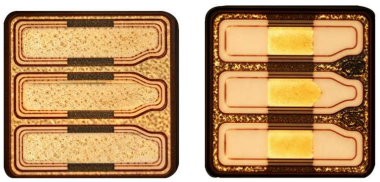
Manufacturer: Anhui UV-CHIPS Semiconductor Technology Co., Ltd.

Product Model: UV-CHIPS-2020A

Product Type: Surface Mount UV LED Chip

Chip Format: 2020mil

Revision: Official Release



1. Features & Applications

1.1 Key Features

- Broad peak wavelength range: 250 – 320 nm
- Standard 2020 chip footprint: 0.508 × 0.508 × 0.40 mm
- AuSn (Gold-Tin alloy) P & N electrodes for high reliability
- Sapphire substrate with AlGaN/AlN/GaN MQW epitaxial structure
- High radiant power output up to 35mW @ 100mA driving current
- Precision multi-parameter binning (voltage, power, wavelength)
- Compatible with high-volume SMT assembly

1.2 Typical Applications

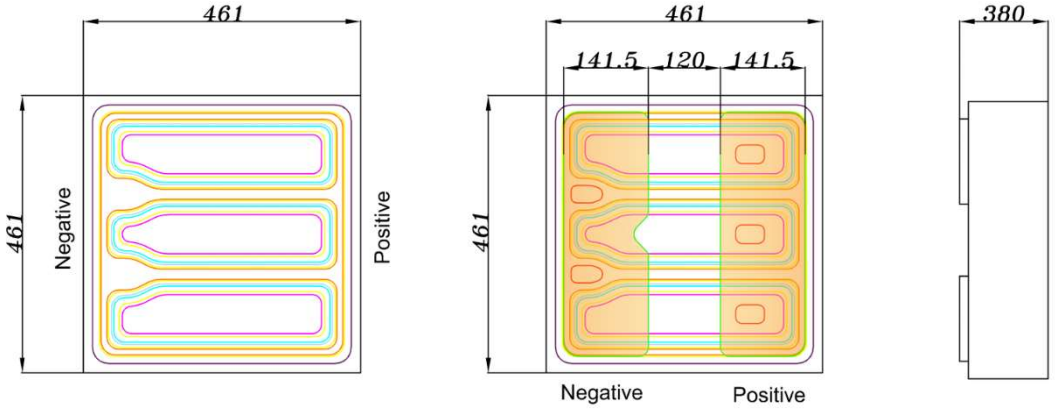
- Water sterilization systems & portable purifiers
- Air purification & HVAC disinfection modules
- Surface disinfection & medical sterilization equipment
- UV curing for adhesives, inks and coatings
- Laboratory analytical instruments & photochemical reactors
- Portable consumer sterilization products

2. Mechanical Dimensions & Structure

Reference Condition: Ta = 25°C

Parameter	Value	Tolerance	Unit
Chip Size (L × W)	0.508 × 0.508	±0.025	mm
Chip Thickness	0.40	±0.02	mm
P Pad Size	0.41 × 0.16	±0.025	mm
N Pad Size	0.41 × 0.16	±0.025	mm
Pad Spacing	0.15	±0.01	mm
Substrate Material	Sapphire	—	—
Epitaxial Structure	AlGaN/AlN/GaN MQW	—	—
P Electrode	AuSn	—	—
N Electrode	AuSn	—	—

Unit:μm



3. Absolute Maximum Ratings

Ta = 25°C unless otherwise noted

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
DC Forward Current	IF	TC = 220°C	—	100	150	mA
Junction Temperature	Tj	—	—	—	85	°C
Operating Temperature	Topr	—	-30	55	60	°C

4. Electro-Optical Characteristics

Standard Test Condition: Ta = 22°C, If = 100 mA

Parameter	Symbol	Unit	Min.	Typ.	Max.
Peak Wavelength	λp	nm	250	—	310
Radiant Flux	Φe	mW	10	—	30
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 = 100 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 = 100 mA

Level	B01	B02	B03	B04	B05	B06
Min. Power (mW)	5.0	10.0	15.0	20.0	25.0	30.0
Max. Power (mW)	10.0	15.0	20.0	25.0	30.0	35.0

5.3 Dominant Wavelength Binning

Test Condition: Ta = 22°C, If = 100 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

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