HK308S68CG-Z406-4P-4R



Specification Datasheet

CFCL Optoelectronics (Shenzhen) Co., Ltd.

Model No.: HK308S68CG-Z406-4P-4R

Product: Dual-wavelength UVB + Red SMD LED module (4 × UVB + 4 × Red chips)

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1. General Description

The HK308S68CG-Z406-4P-4R is a dual-wavelength UVB and red LED module that integrates four UVB chips (peak wavelength 308 nm) and four red chips (peak wavelength 620 nm) in a single surface-mount package of 42.10 × 24.40 × 3.54 mm. The UVB channel delivers a typical radiant flux of 2000 mW at 2800 mA, and the red channel delivers 64 mW at 20 mA.

The two channels are electrically independent and can be driven and controlled separately, which makes the module suitable for fluorescence excitation and spectral analysis where a 308 nm UVB source and a 620 nm red reference source are needed in the same optical path. Every unit is tested and sorted by peak wavelength, radiant flux and forward voltage before shipment.

2. Key Features

- Dual-wavelength emission: 308 nm (UVB) + 620 nm (red)
- 4 × UVB chips + 4 × red chips integrated in one package
- Compact SMD package: 42.10 × 24.40 × 3.54 mm
- Typical radiant flux: 2000 mW (UVB, IF = 2800 mA) / 64 mW (red, IF = 20 mA)
- Wide viewing angle: 120°
- Low thermal resistance: 130 °C/W (junction to board)
- Independent electrode pads for each channel: R+, R-, C+, C-

3. Application Fields

- Fluorescence excitation and spectroscopic analysis
- Mineral, gemstone and forensic fluorescence inspection
- UVB photochemical treatment and skin irradiation equipment
- Photochemical disinfection and surface treatment
- Sensing light source for gas, flame and UV detection
- UV curing and specialty photochemical processes
- Light source for optical instruments and analyzers

4. Absolute Maximum Ratings

(Test condition: Ambient temperature Ta = 25°C)

Parameter	Symbol	Rating	Unit
Forward Current (UVB channel)	IF	2800	mA
Forward Current (Red channel)	IF	20	mA
Power Dissipation	PD	52 (max)	W
Operating Temperature Range	TOPR	-30 ~ +60	°C
Storage Temperature Range	TSTG	-40 ~ +95	°C

5. Electro-Optical Characteristics

(Test condition: Ta = 25°C, IF (UVB) = 2800 mA, IF (red) = 20 mA)

Parameter	Symbol	Min.	Typ.	Max.	Unit
Peak Wavelength (UVB)	λp	305	308.9	310	nm
Peak Wavelength (Red)	λp	615	620	625	nm
Radiant Flux (UVB)	Φe	1920	2000	2160	mW
Radiant Flux (Red)	Φe	56	64	80	mW
Forward Voltage (UVB)	VF	15	16	18	V
Forward Voltage (Red)	VF	8.0	8.8	9.6	V
Spectral Half-Width (UVB)	Δλ	-	12	-	nm
Viewing Angle (Half Intensity)	2θ1/2	-	120	-	deg
Thermal Resistance (Junction to Board)	Rθj-b	-	130	-	°C/W

6. Binning Specifications

(Test condition: Ta = 25°C, IF (UVB) = 2800 mA, IF (red) = 20 mA)

6.1 Peak Wavelength Binning

Rank	UVB (X)	Red
Min.	305.0 nm	615.0 nm
Max.	310.0 nm	625.0 nm

6.2 Radiant Flux Binning

Rank	UVB (Z406)	Red (4R)
Min.	1920 mW	56 mW
Max.	2160 mW	80 mW

6.3 Forward Voltage Binning

Channel	UVB	Red
Min.	15.0 V	8.0 V
Max.	18.0 V	9.6 V

7. Outline Dimensions

- Package type: surface-mount dual-wavelength LED module, metal substrate
- Overall dimensions: 42.10 × 24.40 × 3.54 mm (Length × Width × Height)
- Mounting hole pitch: 35.30 mm (Length) × 18.50 mm (Width), 4 holes
- Electrode pads: R+, R-, C+, C- (independent anode / cathode of each channel)
- Side view: 3.54 mm total height, chips mounted on the metal substrate

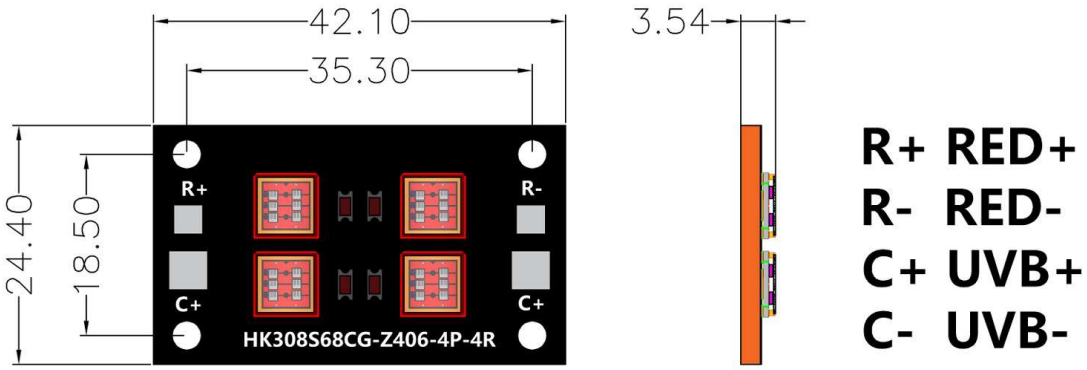

Fig. 1 Outline dimensions (unit: mm)

8. Packaging & Storage

8.1 Packaging

- Supplied in anti-static trays sealed in moisture-barrier bags with desiccant
- Packing quantity: 20 pcs per anti-static tray
- Do not open the sealed bag before production use

8.2 Storage Conditions

- Store sealed at 10 °C ~ 55 °C and 30% ~ 65% RH
- Use within 1 year from the production date
- Use within 28 days after the bag is opened; reseal the bag after each opening to prevent pin oxidation
- Avoid direct sunlight, corrosive gases and high humidity

9. Notes & Precautions

- Peak wavelength tolerance: ± 3.5 nm

- Radiant flux measurement tolerance: ± 10%
- Forward voltage tolerance: ± 10%
- Typical values are measured at Ta = 25 °C unless otherwise specified.
- This product emits UVB radiation at 308 nm. Avoid direct exposure of eyes and skin; wear protective clothing, gloves and UV goggles during operation.
- The device is sensitive to electrostatic discharge (ESD). Grounded workstations, wrist straps and anti-static gloves are required during handling and assembly.
- Recommended reflow: low-temperature solder paste, peak 230 ~ 260 °C, 50 s max above 230 °C, cooling rate 2 ~ 5 °C/s. Operating beyond the absolute maximum ratings may cause permanent damage.