WINGER® WEEBL03-B1S LED 5 mm blue blinking, typ. 465 nm, up to 3,000 mcd

Item number	509465102
Type	WEEBL03-B1S
Brand	WINGER®
Package	5 mm, water clear, blinking (internal IC)
Emitted colour	blue blinking, typ. 465 nm
Luminous intensity	1,700–3,000 mcd
Viewing angle	20°



The WINGER® WEEBL03-B1S is a through-hole blinking LED in the widely used 5 mm standard package with a water-clear lens and an internal blinking IC. It emits blue light at a typical dominant wavelength of 465 nm, with a luminous intensity of 1,700–3,000 mcd and a viewing angle of 20°. Typical flash frequency is 1.5 Hz (ON/OFF ratio typ. 1:1). It may be connected to a DC supply within the rated operating-voltage range V_{DD} (typ. 3.3 V; 3.0–4.5 V).

Typical uses are signalling, warning lights and eye-catching displays, depending on the number and arrangement of the LEDs.

1 Optical and Electrical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Operating voltage [2]	V_{DD}	3,0 [1]	3,3 [1]	4,5	V	DC
Viewing angle (50 % power angle)	2θ½		20		°	
Luminous intensity	I_V	1,700 [1]		3,000	mcd	
Dominant wavelength [5]	λ_D	465	465	470 [1]	nm	
Flash frequency	f		1,5 [1]		Hz	
ON/OFF ratio	t_c		1:1 [1]		—	
Recommended forward current	$I_{F(rec)}$			40	mA	

[1] Value according to the previous datasheet version.
[2] Operating voltage V_{DD} min. 3.0 V, typ. 3.3 V, max. 4.5 V according to the previous datasheet version [1]. The shop lists “forward voltage” / “Vorwärtsspannung” 4.5 V without min./typ./max.; that value equals the PDF maximum, not the typical value, and is used as max. (shop takes precedence for the maximum). Symbol V_{DD} as in the previous datasheet (internal IC).
[5] Typical wavelength 465 nm according to the shop (takes precedence). The previous datasheet version stated λ_D 465–470 nm with no typical value; the shop typ. value equals the PDF minimum.
Unless otherwise stated, values at typ. V_{DD}, T_A = 25 °C.
This LED has an internal blinking IC. It may be connected to a DC supply within the rated operating-voltage range V_{DD}.
Measurement tolerances [1]: operating voltage ±0.1 V; luminous intensity ±15 %; viewing angle ±15 %; wavelength ±2.0 nm.
It is strongly recommended to limit the die temperature to 55 °C [1].

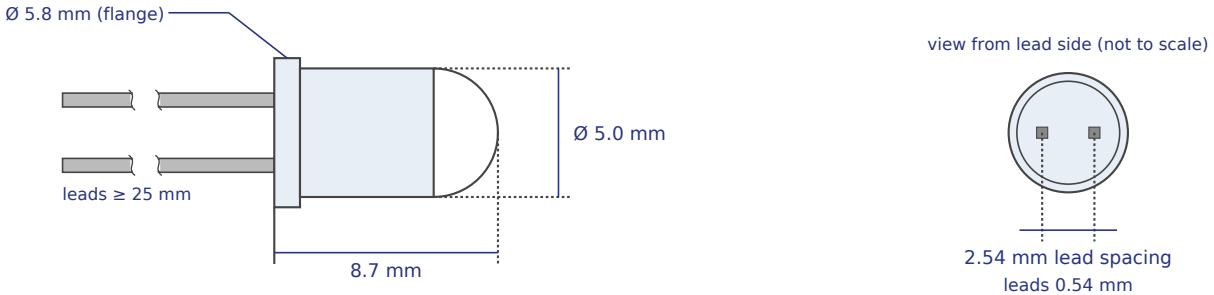
2 Absolute Maximum Ratings

Parameter	Symbol	Rating
Forward current	I_F	40 mA
Peak forward current (duty cycle 1/10, pulse width 0.1 ms) [6]	I_{FP}	on request
Reverse voltage	V_R	on request
Max. power dissipation	P_D	150 mW
Operating temperature range	T_{OPR}	−20 … +80 °C [1]
Storage temperature range	T_{STG}	−30 … +80 °C [1]
Lead soldering temperature	T_{SOL}	260 °C for max. 5 s [1]

[1] Value according to the previous datasheet version.
[6] I_{FP} conditions (duty cycle 1/10, pulse width 0.1 ms) were stated in the previous datasheet version without an I_{FP} current value; not invented.
Absolute maximum ratings at T_A = 25 °C.
The previous datasheet version mentioned I_{FP} conditions (duty cycle 1/10, pulse width 0.1 ms) but did not state an I_{FP} value; the value is therefore given as “on request” and is not invented [6].

3 Mechanical Data

Parameter	Value
Package	5 mm round, through-hole, water-clear lens
Body diameter	Ø 5.0 mm
Flange diameter	Ø 5.8 mm
Body height (flange to lens tip)	8.7 mm
Height from flange front face to lens tip	7.7 mm
Lead spacing / lead cross-section	2.54 mm / 0.54 mm
Lead length	≥ 25 mm (anode; cathode shorter)
Polarity	long lead = anode (+); short lead and flat on flange = cathode (−)



Side view (schematic, not to scale). Long lead = anode, flat on flange = cathode side.

Dimensions in mm, taken from the product-page drawing (shop). Lead thickness is the single dimension shown on that drawing (not stated as a square cross-section). The 1.5 mm dimension on the shop drawing marks the stepped lead end, not a shortening of the cathode; the cathode is drawn shorter but is not dimensioned. The previous datasheet version of this type showed the same 5 mm outline family with body Ø 5.0±0.2 mm, flange Ø 5.8±0.2 mm, height 8.6±0.2 mm, flange thickness 1.0±0.2 mm, lead pitch 2.54±0.2 mm, lead thickness 0.5±0.2 mm and lead length 27.5±0.5 mm, and a circuit of the internal blinking IC (V_{DD}, V_{SS}) connected directly to a battery. Shop dimensions take precedence. No general tolerance is given on the shop drawing.

4 Ordering Information and Packaging

Parameter	Value
Item number	509465102
Type	WEEBL03-B1S
Packaging	loose in bag
Packaging unit	500 pcs per bag

5 Handling and Application Notes

- This LED has an internal blinking IC. It may be connected to a DC supply within the rated operating-voltage range V_{DD}. Do not exceed the rated V_{DD} or the other ratings. The previous datasheet version shows a direct connection of the supply to the IC pins V_{DD} and V_{SS}.
- When connecting several of these LEDs in parallel, do not exceed the rated operating-voltage range for any device.
- Do not exceed the absolute maximum ratings, not even briefly; avoid reverse voltage.
- Bend the leads only before soldering and at room temperature, never directly at the body (typ. at least 3 mm [4] from the body). Hold the lead firmly between body and bending point; never use the body as a fulcrum.
- Do not apply mechanical stress to the leads or the lens while the LED is hot (during and directly after soldering). Let it cool down to room temperature first.
- Clean with isopropyl alcohol only if necessary; do not use aggressive solvents. Ultrasonic cleaning only after prior qualification.
- Do not look directly into the LED at short distance for a longer period (glare).
- Protect the LED against current surges and overvoltage; limit the die temperature to 55 °C (strongly recommended) [1].

[1] Value according to the previous datasheet version.
[4] Typical value for this LED type; not individually measured / subject to confirmation.

6 ESD Protection

Parameter	Value
ESD withstand voltage (HBM)	1,000 V [4] (HBM, ANSI/ESDA/JEDEC JS-001)

- LEDs are electrostatic-sensitive devices (ESD). Electrostatic discharge or voltage surges can damage the LED immediately or reduce its service life without visible signs.
- Handle and process only in an ESD protected area (EPA) in accordance with IEC 61340-5-1: grounded work surfaces, equipment and soldering irons, wrist straps or ESD gloves, ESD-safe packaging and transport containers.
- Keep the LEDs in their ESD-safe packaging until processing.

[4] Typical value for this LED type; not individually measured / subject to confirmation.

7 Soldering Instructions

Parameter	Value
Wave soldering	max. 260 °C, max. 5 s, at least 3 mm from the body [4]
Preheating (wave soldering)	max. 100 °C, max. 60 s [4]
Hand soldering	max. 350 °C, max. 3 s, at least 3 mm from the body, once only [4]

- Recommended methods: wave soldering or hand soldering. Through-hole LEDs are not intended for reflow soldering unless explicitly stated.
- Solder only once if possible and keep the specified minimum distance between soldering point and body. Never dip the body into the solder.
- Hand soldering: use a temperature-controlled, grounded soldering iron; do not touch the body with the tip.
- Shorten the leads preferably after soldering and without transferring stress to the body.

[4] Typical value for this LED type; not individually measured / subject to confirmation.

8 Storage

Parameter	Value
Storage temperature	−30 … +80 °C [1]
Recommended storage conditions	≤ 30 °C, ≤ 60 % RH, in original packaging [4]
Shelf life	12 months from delivery in unopened original packaging [4]

- Store in the original packaging in a dry, clean environment free of corrosive gases. Avoid condensation and rapid temperature changes.
- High humidity or sulphur-containing atmospheres can discolour the lead surface and impair solderability; process the LEDs promptly.

[1] Value according to the previous datasheet version.
[4] Typical value for this LED type; not individually measured / subject to confirmation.

9 Environmental Compliance

Parameter	Value
RoHS (EU) 2011/65/EU incl. (EU) 2015/863	compliant (Directive 2011/65/EU) [3]
REACH (EC) 1907/2006	no SVHC of the candidate list above 0.1 % (w/w) known [4]

Declarations of conformity are available on request.
Dispose of as electronic waste in accordance with local regulations.

[3] RoHS compliance according to the previous datasheet version.
[4] Typical value for this LED type; not individually measured / subject to confirmation.

10 Warranty and Application Limits

- Perform an acceptance inspection on arrival of the goods; return defective items stating the defect and quantity.
- Integration of the LEDs into the application and verification of service life and other qualities in practical use shall be carried out by the user.
- Do not use the LEDs in applications requiring higher reliability and safety where failure or malfunction could endanger life or health. The seller assumes no liability for claims or damages resulting from use contrary to the intended purpose or without written consent.
- The seller assumes no responsibility for damage or defects caused by operation at currents exceeding the absolute maximum ratings; these are not covered by warranty.

Values marked [4] are typical values for this LED type and have not been individually measured for this item; they are subject to confirmation. Please contact us for binding values: info@led1.de · +49 340 8508260.

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