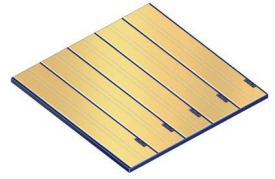


SPL BF98-40-5-12B

LASER Bar Chip

Bare Die, 10% filling factor, 980 nm, 40 W



Applications

- Laser Material Processing

Features:

- Monolithic linear laser array
- High efficiency and reliable MOVPE-grown quantum-well structure
- 5 emitter (10% filling factor) design
- Recommended optical power 40 W
- Typical conversion efficiency 65%
- Solderable p- and n- side metallization
- n-side metallization suitable for wire bonding
- Optimized mirror stability for back reflection
- Other center pulse wavelengths available upon request*

Ordering Information

Type
SPL BF98-40-5-12B (969 +/-3nm)

Ordering Code
Q65112A8145

*please contact the sales department for further information and support

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Characteristics

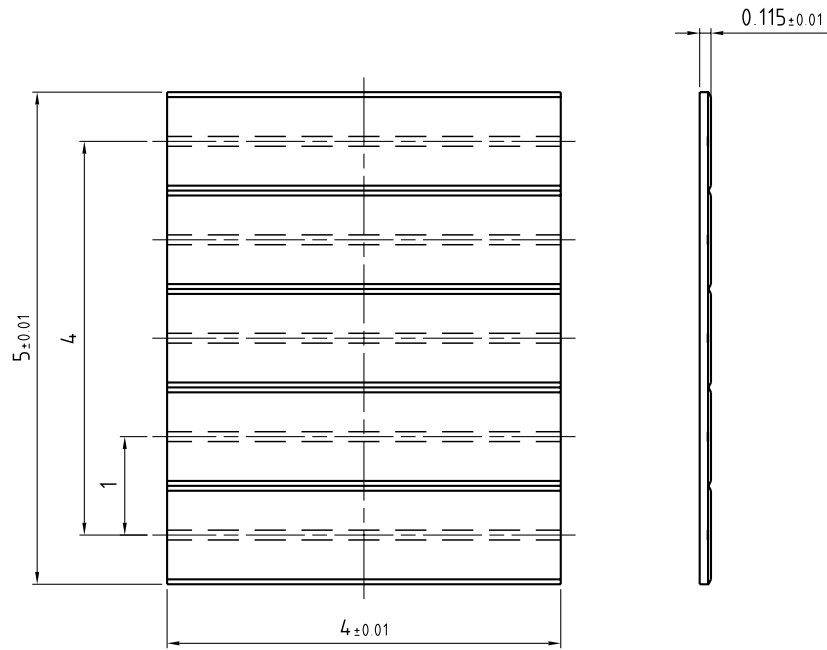
$P_{\text{opt}} = 40 \text{ W}$; $T_{\text{A}} = 25 \text{ °C}$

Parameter	Symbol		Values
Single emitter contact width	w	typ.	100 μm
Filling factor	F	typ.	10 %
Number of emitters	n		5
Emitter pitch	p	typ.	1000 μm
Standard pulse center wavelength 1 μs pulse width at 4kHz repetition rate (bare die level)	λ_{pulse}	min. typ. max.	968 nm 971 nm 974 nm
Spectral bandwidth (FWHM)	$\Delta\lambda$	typ. max.	3 nm 5 nm
Beam divergence parallel to pn-junction (full width at 95% power content)	Θ_{\parallel}	typ. max.	6.4 ° 7.7 °
Beam divergence perpendicular to pn-junction (full width at 95% power content)	Θ_{\perp}	typ. max.	40 ° 44 °
Total conversion efficiency	η_{tot}	min. typ.	61 % 65 %
Slope efficiency	η	min. typ.	0.95 W / A 1.03 W / A
Threshold current	I_{th}	typ. max.	2.7 A 3.1 A
Forward voltage	V_{F}	typ. max.	1.52 V 1.57 V
Forward current	I_{F}	typ. max.	41 A 43 A
Polarization extinction ratio $\text{PER} = P_{\text{TE}} / (P_{\text{TE}} + P_{\text{TM}})$	PER	min. typ.	90 % 95 %

The specified values in cw-mode (continuous wave mode) imply a suitable mounting technology with a thermal resistance of $R_{\text{th}} < 1.0 \text{ K/W}$.

All characteristics and tolerances are based on sample size measurements and refer to median values of wafers.

Dimensional Drawing ¹⁾



C63062-A6000-A159 -02

Further Information

Approximate Weight: 13.0 mg

Notes

Depending on the mode of operation, these devices emit highly concentrated visible and non visible light which can be hazardous to the human eye. Products which incorporate these devices have to follow the safety precautions given in IEC 60825-1.

Subcomponents of this device contain, in addition to other substances, metal filled materials including silver. Metal filled materials can be affected by environments that contain traces of aggressive substances. Therefore, we recommend that customers minimize device exposure to aggressive substances during storage, production, and use. Devices that showed visible discoloration when tested using the described tests above did show no performance deviations within failure limits during the stated test duration. Respective failure limits are described in the IEC60810.

Handling:

Solvents, water, liquids, non-conductive plastics and glues are not allowed near the device, because solvents and other liquids could emerge and damage the product.

Important notes of operation for laser diode

a) Electrical operation

OSRAMs laser diodes are designed for maximum performance and reliability. Operating the laser diode above the maximum rating even for very short periods of time can damage the laser diode or reduce its lifetime. The laser diode must be operated with a suitable power supply with minimized electrical noise. The laser diode is very sensitive to electrostatic discharge (ESD). Proper precautions must be taken.

b) Mounting instructions

In order to maintain the lifetime of the laser diode proper heat management is essential. Due to the design of the laser diode heat is dissipated only through the base plate of the diode's body. A proper heat conducting interconnection between the diodes base plate and the heat sink must be maintained.

For further application related information please visit www.osram-os.com/appnotes

Depending on the mode of operation, these devices emit highly concentrated non visible infrared light which can be hazardous to the human eye. Products which incorporate these devices have to follow the safety precautions given in IEC 60825-1 and IEC 62471.

Disclaimer

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Attention please!

The information describes the type of component and shall not be considered as assured characteristics. Terms of delivery and rights to change design reserved. Due to technical requirements components may contain dangerous substances.

For information on the types in question please contact our Sales Organization.

If printed or downloaded, please find the latest version on the OSRAM OS website.

Packing

Please use the recycling operators known to you. We can also help you – get in touch with your nearest sales office. By agreement we will take packing material back, if it is sorted. You must bear the costs of transport. For packing material that is returned to us unsorted or which we are not obliged to accept, we shall have to invoice you for any costs incurred.

Product and functional safety devices/applications or medical devices/applications

OSRAM OS components are not developed, constructed or tested for the application as safety relevant component or for the application in medical devices.

OSRAM OS products are not qualified at module and system level for such application.

In case buyer – or customer supplied by buyer – considers using OSRAM OS components in product safety devices/applications or medical devices/applications, buyer and/or customer has to inform the local sales partner of OSRAM OS immediately and OSRAM OS and buyer and /or customer will analyze and coordinate the customer-specific request between OSRAM OS and buyer and/or customer.

Glossary

- 1) **Tolerance of Measure:** Unless otherwise noted in drawing, tolerances are specified with ± 0.1 and dimensions are specified in mm.

Revision History

Version	Date	Change
α.0	2019-03-27	Initial Version
α.0	2019-03-27	New Layout
α.1	2019-03-28	New Layout
α.2	2019-04-02	New Layout
α.4	2019-08-07	Characteristics
α.4	2019-08-07	Characteristics
α.4	2019-08-13	Characteristics
α.4	2019-08-23	Initial Version
α.4	2019-09-09	Initial Version

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