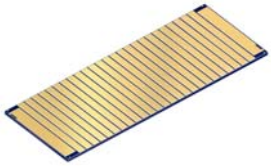
Unmounted Laser Bars, 50% Fill Factor, 980nm

Version 0.1

SPL BK98-40



SPL BK98-40

Features

- Unmounted monolithic linear array
- 25 emitter design (50% fill factor)
- Recommended optical power 250W
- Typical conversion efficiency 67%
- High efficiency and reliable MOVPE-grown quantum-well structure
- Other center pulse wavelengths available upon request
- Solderable p- and n-side metallization
- N-side metallization suitable for wire bonding

Applications

- Recommended for continuous wave (cw)-applications
- Pumping of solid-state and fiber lasers
- Direct material processing
- Heating, illumination
- Medical applications
- Printing applications

Safety Advices

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 found in IEC 60825-1 “Safety of laser products”.

Ordering Information

Type	Power[1)]	Wavelength[2)]	Ordering Code
SPL BK98-40	250 W	969 ± 5 nm	Q65111A7637

1) Recommended optical power implies a thermal resistance of $R_{th} < 0.3$ K/W.

2) Center pulse wavelength (wafer median) of unmounted laser bars at 1 µs pulse width and 4 kHz repetition rate. Other wavelengths or tolerances available upon request.

Characteristics[1] (T_A = 25 °C)

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
Recommended output power	P_{op}	-	250	-	W
Threshold current	I_{th}	-	24	28	A
Operating current[2]	I_{op}	-	256	280	A
Slope efficiency	η	0.97	1.07	-	W/A
Total conversion efficiency[2][3]	η_{tot}	-	67	-	%
Beam divergence fast-axis[2][4]	$\theta_{\perp}$	-	40	-	°
Beam divergence slow-axis[2][3][4]	$\theta_{\parallel}$	-	7.5	-	°
Center pulse wavelength (wafer median)	λ_{pulse}	964	969	974	nm
Spectral width (FWHM)[2]	$\Delta\lambda$	-	3	-	nm
TE Polarization[2][3]	P_{TE}	-	> 95	-	%

[1] All characteristics and limitations refer to pulsed measurements (1 µs pulse width at 4 kHz repetition rate) of unmounted laser bars. The realization of the specified values in cw-mode (continuous wave mode) implies a suitable mounting technology with a thermal resistance of R_{th} < 0.3 K/W. The operating emission wavelength depends on the **operating mode** (cw or pulsed, ambient temperature, thermal resistance R_{th}) and is in general higher than the specified center pulse wavelength λ_{pulse}. All characteristics obtained in the respective **operating mode** may differ from the characteristics specified herein.

[2] Specified at the typical optical output power $P_{op, typ}$.

[3] Parameter strongly depends on bar mounting.
Typical values for cw-operation of bars mounted with hard solder (R_{th} = 0.3 K/W, T_A = 20°C).

[4] Full width at 95% power content.

Dimensions

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
Number of emitters	n	-	25	-	
Single emitter contact width	w	-	200	-	µm
Emitter pitch	p	-	400	-	µm
Fill factor	F	-	50	-	%
Bar width	W	11.3	11.4	11.5	mm
Bar height	H	105	115	125	µm
Resonator length	L	3990	4000	4010	µm

Disclaimer

OSRAM OS assumes no liability whatsoever for any use of this document or its content by recipient including, but not limited to, for any design in activities based on this preliminary draft version. OSRAM OS may e.g. decide at its sole discretion to stop developing and/or finalizing the underlying design at any time.

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 in the Internet.
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.
Components used in life-support devices or systems must be expressly authorized for such purpose!
Critical components* may only be used in life-support devices** or systems with the express written approval of OSRAM OS.

*) A critical component is a component used in a life-support device or system whose failure can reasonably be expected to cause the failure of that life-support device or system, or to affect its safety or the effectiveness of that device or system.
**) Life support devices or systems are intended (a) to be implanted in the human body, or (b) to support and/or maintain and sustain human life. If they fail, it is reasonable to assume that the health and the life of the user may be endangered.

Published by
OSRAM Opto Semiconductors GmbH
Leibnizstraße 4, D-93055 Regensburg
www.osram-os.com

EU RoHS and China RoHS compliant product
此产品符合欧盟 RoHS 指令的要求；
按照中国的相关法规和标准，不含有毒有害物质或元素。

DRAFT – For reference only. Subject to change – may be necessary in a limited number of cases.

OSRAM Opto Semiconductors