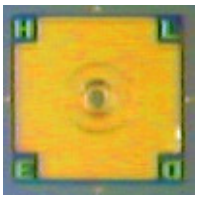
PRINCETON OPTRONICS



1mW Single-Mode 688nm VCSEL Chip
Part # PSM-BC-001-W0688
(preliminary)

- *Vertical-Cavity Surface-Emitting Laser technology*
- *1mW single transverse and longitudinal mode power at 688nm*

Optical & Electrical Characteristics

PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT
CW Single-mode Power	2.2mA, 20C Heat-sink	--	1.0	--	mW
Threshold current	20C Heat-sink	0.2	0.3	0.45	mA
Operating current	1mW, 20C Heat-sink	1.7	2	2.2	mA
Operating voltage	1mW, 20C Heat-sink	2	2.3	2.6	V
Differential resistance	1mW, 20C Heat-sink	290	500	870	Ω
Slope efficiency	20C Heat-sink	0.6	0.7	0.85	W/A
Conversion efficiency	1mW, 25C	12	23	--	%
Center wavelength	1mW, 20C Heat-sink	678	688	698	nm
SMSR (1)	1mW, 20C Heat-sink	-15	-30	--	dB
Wavelength shift	20C Heat-sink	--	0.055	0.070	nm/°C
Beam divergence (2)	1mW, 20C Heat-sink	--	11	15	°

(1) Side-Mode Suppression Ratio
(2) Full-width, $1/e^2$

Ordering information

PSM - BC - 001 - W0688

Package type
BC=Die
BCS=Chip-on-submount

Wavelength (nm)

CW Output Power (mW)

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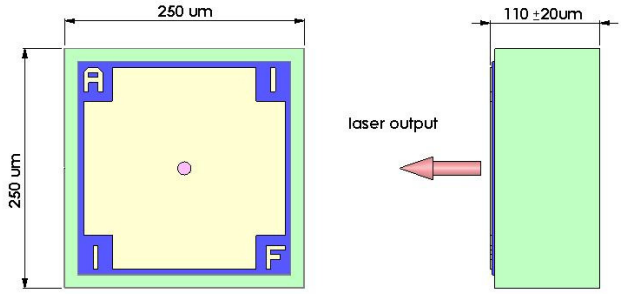
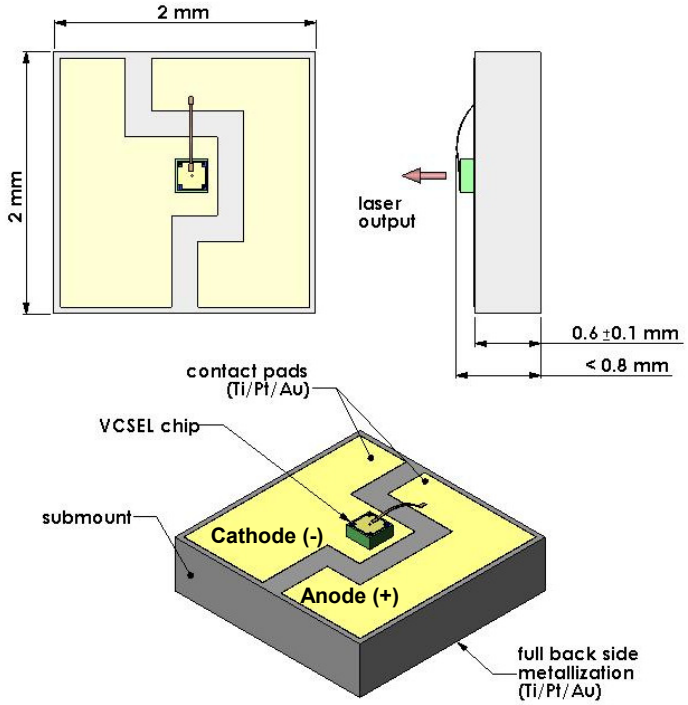
Mechanical Characteristics

Package Option BC: Bare die



PARAMETER	VALUE
Die width	250 +/-10μm
Die length	250 +/-10μm
Die height	110 +/-20μm
Max solder temperature	220 °C

Package Option BCS: Chip on submount



PARAMETER	VALUE
Package width	2.0 +/-0.05mm
Package length	2.0 +/-0.05mm
Package height	< 0.7mm
Max solder temperature	150 °C
Metalization	Ti/Pt/Au

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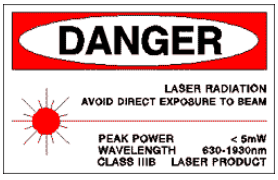
Laser diode product components are intended for use in a user-devised end system. However, these products are capable of emitting Class IIIB radiation. Extreme care must be exercised during their operation. Only persons familiar with the appropriate safety precautions should operate a laser product. Directly viewing the laser beam or exposure to specular reflections must be avoided. Serious injury may result if any part of the body is exposed to the beam. The eye is extremely sensitive to the infrared radiation and therefore, proper eye-wear must be worn at all times. Use of optical instruments with these products may increase eye hazard. Always wear eye protection when operating.



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