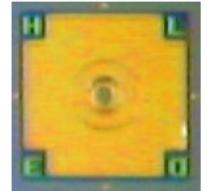


## 1 mW 688 nm VCSEL - Bare Chip (250 x 250 $\mu\text{m}$ )

### PSM-BC-001-W0688

- 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 Output power	$I_{OP}$ , 20°C Heat-sink	--	1.0	--	mW
Threshold current	20°C Heat-sink	0.2	0.3	0.45	mA
Operating current	$P_{OUT}$ , 20°C Heat-sink	1.7	2	2.2	mA
Operating voltage	$P_{OUT}$ , 20°C Heat-sink	2	2.3	2.6	V
Differential resistance	$P_{OUT}$ , 20°C Heat-sink	290	500	870	$\text{m}\Omega$
Slope efficiency	20°C Heat-sink	0.6	0.7	0.85	W/A
Conversion efficiency	$P_{OUT}$ , 25°C Heat-sink	12	23	--	%
Center wavelength	$P_{OUT}$ , 20°C Heat-sink	678	688	698	nm
SMSR (FWHM)	$P_{OUT}$ , 20°C Heat-sink	-15	-30	--	dB
Wavelength shift	20°C Heat-sink	--	0.055	0.070	$\text{nm}/^\circ\text{C}$
Beam divergence (FW $1/e^2$ )	$P_{OUT}$ , 20°C Heat-sink	--	16	--	$^\circ$

### Mechanical Characteristic: Bare Die

PARAMETER	CONDITIONS
Die Width	250 $\pm$ $\mu\text{m}$
Die Length	250 $\pm$ $\mu\text{m}$
Die Height	110 $\pm$ $\mu\text{m}$
Max Solder Temperature	220 $^\circ\text{C}$

### Mechanical Characteristic: Chip on Submount

PARAMETER	CONDITIONS
Package Width	2.0 $\pm$ 0.05 mm
Package Length	2.0 $\pm$ 0.05 mm
Package Height	< 0.7 mm
Max Solder Temperature	150 $^\circ\text{C}$
Metallization	Ti/Pt/Au

### Ordering information

PCW – BC – 001 – W0688

Heat Spreader Type
Wavelength (nm)

CW Output Power

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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 IV 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.



REV.B – 8/16