4mW 945nm VCSEL - Bare Chip (175 x 175 μm)

PCW-BC-004-W0945

- *High Power Conversion Efficiency*
- *Excellent temperature stability : 10% variation in efficiency within 20° to 80° C*
- *Wavelengths stabilized (0.07 nm per ° C) & narrow spectral width (< 1 nm typ.)*

Optical & Electrical Characteristics

PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT
CW Output power	I_{OP}, 20°C Heat-sink	3.5	4	--	mW
Threshold current	20^{0}C Heat-sink	--	0.9	1.5	mA
Operating current	P_{OUT} , 20°C Heat-sink	--	5	--	mA
Operating voltage	P_{OUT}, 20°C Heat-sink	--	1.75	--	V
Differential resistance	P_{OUT}, 20°C Heat-sink	--	90	--	mΩ
Slope efficiency	20°C Heat-sink	0.85	1.0	--	W/A
Conversion efficiency	P_{OUT}, 20°C Heat-sink	38	43	--	%
Center wavelength	P_{OUT}, 20°C Heat-sink	935	945	955	nm
Spectral Width (FWHM)	P_{OUT}, 20°C Heat-sink	--	0.8	1	nm
Wavelength shift	20°C Heat-sink	--	0.07	0.07	nm/°C
Beam divergence (FW 1/e^2)	P_{OUT}, 20°C Heat-sink	--	17 x 17	--	°

Mechanical Characteristics

PARAMETER	CONDITIONS	MIN	TYP	MAX	UNIT
Length (X), Width (Y)	--	165	175	185	μm
Thickness (Z)	--	90	100	110	μm
Anode pad size	Emission side	70	75	80	μm
Cathode pad size	Backside	130	140	150	μm
Bond pad	For 1 mil wire	3			gF

Maximum Absolute Ratings

PARAMETER	CONDITIONS
Forward current	100 mA
Reverse current	25 μA
ESD threshold	150 V, rev / 600 V, fwd
Operating temperature	-20 to +85 °C
Storage temperature	-40 to +100 °C

Ordering information

PCW – BC– 004 – W0945

- PCW – Heat Spreader Type
- 004 – CW Output Power
- W0945 – Wavelength (nm)

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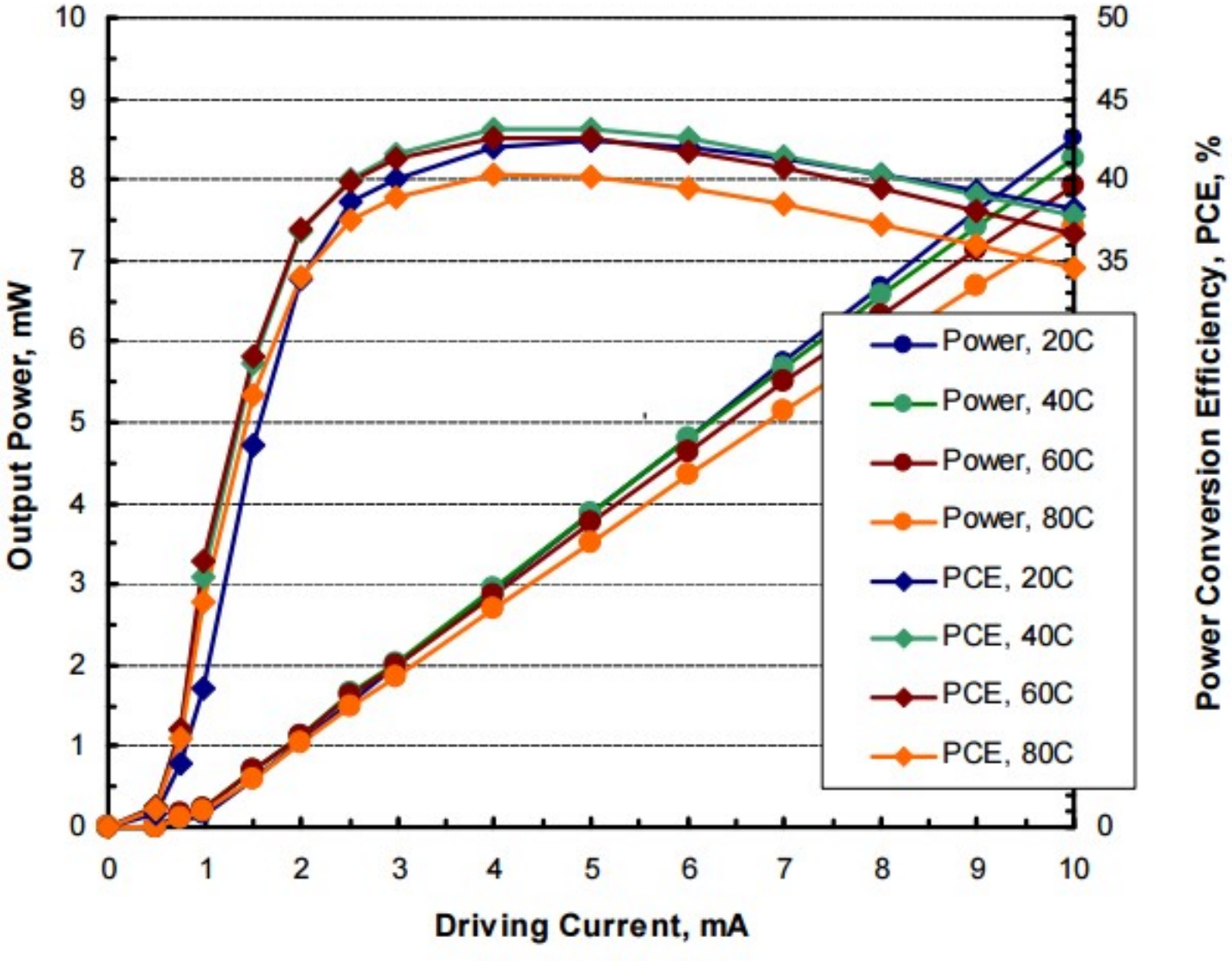
PRINCETON OPTRONICS

CW Power and PCE vs Drive Current at various Temperatures



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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

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