



西安芯湾科技有限公司

XI AN HIFOTONICA TECHNOLOGY CO.,LTD.

850nm 50G VCSEL Specifications

PN: HF-VS850-50 (1x1 1x4 1x12 Array)

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Electro-Optical Characteristics

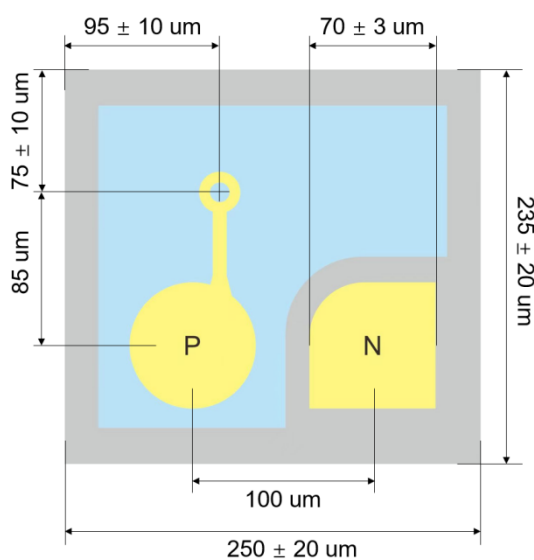
Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Threshold current	I_{th}	25°C		0.65	1.2	mA
		80°C		0.8	1.4	
Operating voltage	V_{op}	$I_{op}=6mA$		2.1	2.4	V
Differential Resistance	R_d	$I_{op}=6mA$			80	Ω
Slope efficiency	SE	$I_{op}=3\sim 6mA, 25^\circ C$	0.35	0.5		W/A
		$I_{op}=3\sim 6mA, 80^\circ C$	0.3	0.4		
Output power	P_{op}	$I_{op}=6mA, 25^\circ C$	2.1	3		mW
		$I_{op}=6mA, 80^\circ C$	1.6	2.3		
Center wavelength	λ	$I_{op}=6mA, 0^\circ C-80^\circ C$	840	850	860	nm
Spectral width	$\Delta\lambda_{rms}$	$I_{op}=6mA, 25^\circ C$		0.5	0.6	nm
Beam Divergence	θ	$I_{op}=6mA, 25^\circ C$		23	30	°
Modulation Bandwidth	f_{-3dB}	$I_{op}=6mA, 25^\circ C$	18	20		GHz
		$I_{op}=7mA, 80^\circ C$	18	20		
Relative intensity noise	RIN	$I_{op}=6mA, 25^\circ C$		-145	-140	dB/Hz
Wavelength Shift Coefficient	$\Delta\lambda/\Delta T$	0°C-80°C		0.06		nm/°C

Absolute Maximum Rating

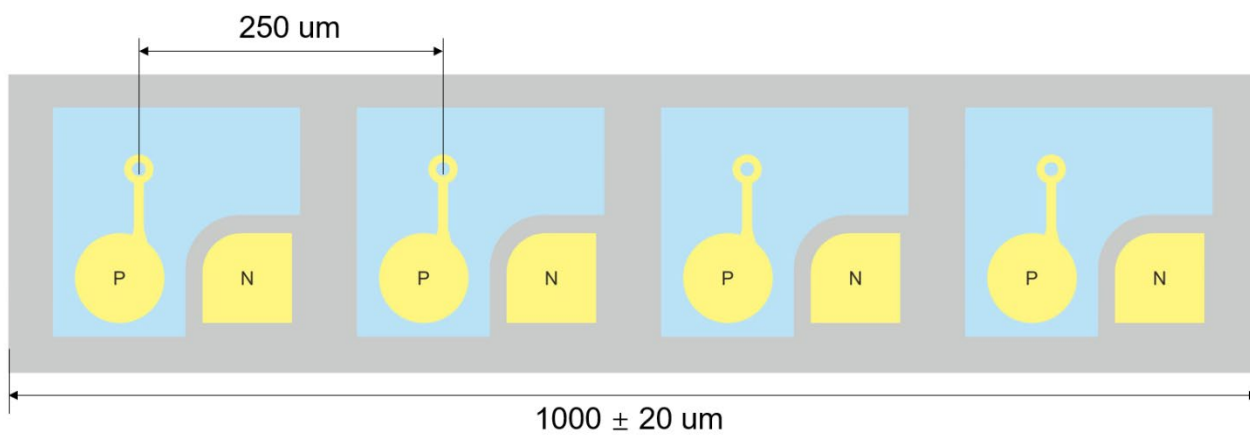
Parameter	Symbol	Min.	Max.	Unit
Peak forward current (Max 10sec)	I_{max}		12	mA
Optical output power	P_{max}		7	mW
Reverse Voltage	V_r		5	V
Operating Temperature	T_{op}	0	80	°C
Storage Temperature	T_{st}	-40	100	°C
Mounting Temperature (Max 10sec)	T_m		260	°C

VCSEL Chip Dimension

Parameter	Symbol	Min.	Typ.	Max.	Unit
Die Length (1x1)	$L_{1 \times 1}$	240	250	260	um
Die Length (1x4)	$L_{1 \times 4}$	960	1000	1040	um
Die Length (1x12)	$L_{1 \times 12}$	2880	3000	3120	um
Die Width	W	225	235	245	um
Die Thickness	T	135	150	165	um
Bond Pad Diameter	D	67	70	73	um

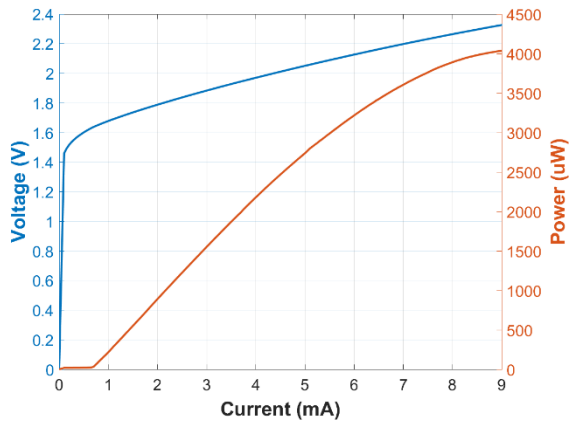


1x1 array

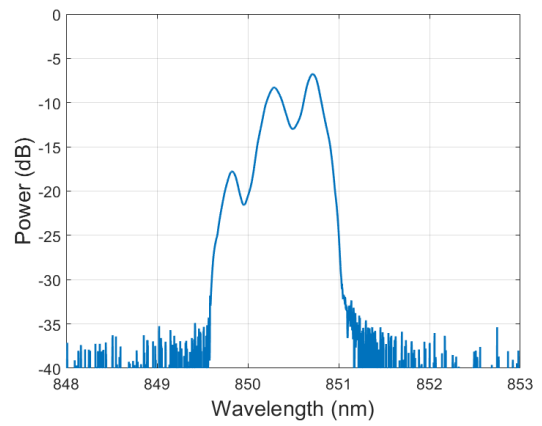


1x4 array

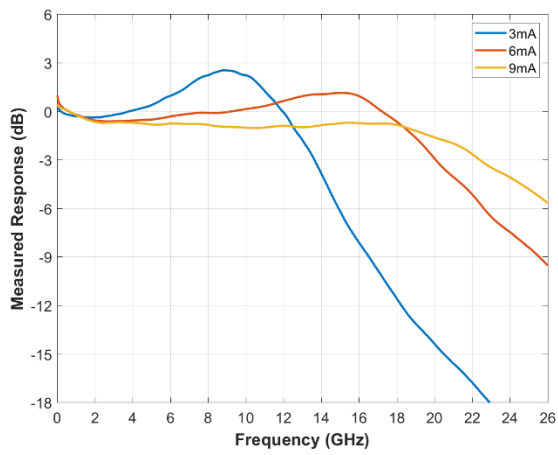
LIV Characteristic



Optical Spectrum



Frequency Response



Eye Diagram

