

850 nm VCSEL High Power Chips

(with ion-implant process)

(Datacom, General Purpose)

1. Optical and Electrical Characteristics

Parameter	Symbol	Min.	TYP.	Max.	Unit	Test Condition
Peak Wavelength	λ_p	830	845	860	nm	$I_f = 11\text{mA@RT}$
Spectral Width(FWHM)	$\Delta\lambda$	—	0.5	1	nm	$I_f = 11\text{mA@RT}$
Beam Divergence	Θ	10	18	25	Deg	Full width at $1/e^2$
Threshold Voltage	V_{th}	1.47	1.49	1.55	V	$I_f = 0.5\text{mA@RT}$
Forward Voltage	V_f	1.7	2.0	2.5	V	$I_f = 11\text{mA@RT}$
Threshold Current	I_{th}	4	7	12	mA	
Peak Optical Power	P_{max}	7	11	20	mW	
Peak Power Current	I_{pmax}	20	30	40	mA	
Slop Efficiency	dP/dI	0.2	0.3	0.5	W/A	$I_f = 11\text{mA@RT}$
Dynamic Resistance	dV/dI	20	40	60	Ω	$I_f = 11\text{mA@RT}$
Reverse Breakdown Voltage	V_b	5	10	15	V	
Operation Temperature Range	T_{op}	0	25	80	C	

2. Maximum Ratings

Parameter	Min.	Max.	Unit	Condition
Storage Temperature	-30	100	C	
Operating Temperature	-30	85	C	
Continuous Forward Current		30	mA	
Continuous Reverse Voltage		5	V	

Note 1. This chart is a target performance of chips made from wafers with 18um light-emitting and 24um of implant apertures.

Note 2. These specifications are subject to change without notice.

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