TSD-8B12-708

Oxide-Confined VCSEL ***Preliminary***

FEATURES:

- High Slope Efficiency
- High light output power with low bias

ELECTRO-OPTICAL CHARACTERISTICS:

PARAMETERS	SYMBOL	MIN	TYP	MAX	UNIT	TEST CONDITIONS
Threshold Current	I_{th}	1	2	3	mA	
Output Power	P_o		2		mW	I_F =6 mA
Slope Efficiency	η	0.3	0.50		mW/mA	
Wavelength	λ_P	830	850	860	nm	I_F =6 mA
Forward Voltage	V_F		1.8	2.2	V	I_F =6 mA
Series Resistance	R_S		45	60	Ω	I_F =6 mA
Beam Divergence	θ		16	25	degree	I_F =6 mA (FWHM)
Spectral width (RMS)	$\Delta\lambda$			0.85	nm	I_F =6 mA

Notes: All parameters are measured at I_F=6 mA, 25°C, CW operation.

THERMAL CHARACTERISTICS:

PARAMETERS	SYMBOL	MIN	TYP	MAX	UNIT	TEST CONDITIONS
I_{th} Temperature Variation	ΔI_{th}	-1.5		2	mA	T_A=0~70°C
V_F Temperature Coefficient	$\Delta V_F/\Delta T$		-2		mV/°C	T_A=0~70°C, I_F=6 mA
η Temperature Coefficient	$\Delta\eta/\Delta T$		-0.35		% /°C	T_A=0~70°C, I_F=6 mA
λ_P Temperature Coefficient	$\Delta\lambda_P/\Delta T$		0.06		nm/°C	T_A=0~70°C, I_F=6 mA

ABSOLUTE MAXIMUM RATINGS:

PARAMETERS	MIN	MAX	UNIT	CONDITIONS
Storage Temperature	-40	125	°C	
Operating Temperature	0	85	°C	
Continuous Forward Current		12	mA	
Continuous Reverse Voltage		5	V	10μA
Process temperature		260	°C	10 sec

TYPICAL CHARACTERISTICS:

Fig .1 Typical Optical Characteristics

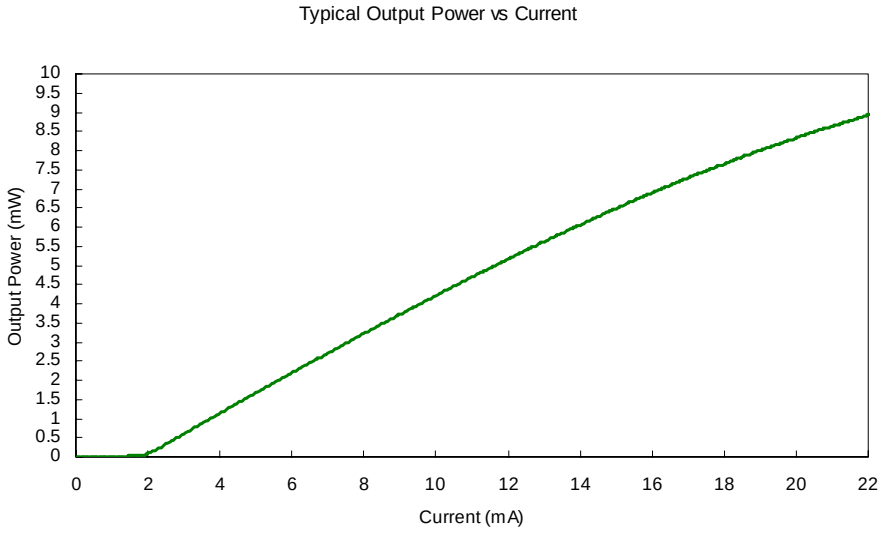
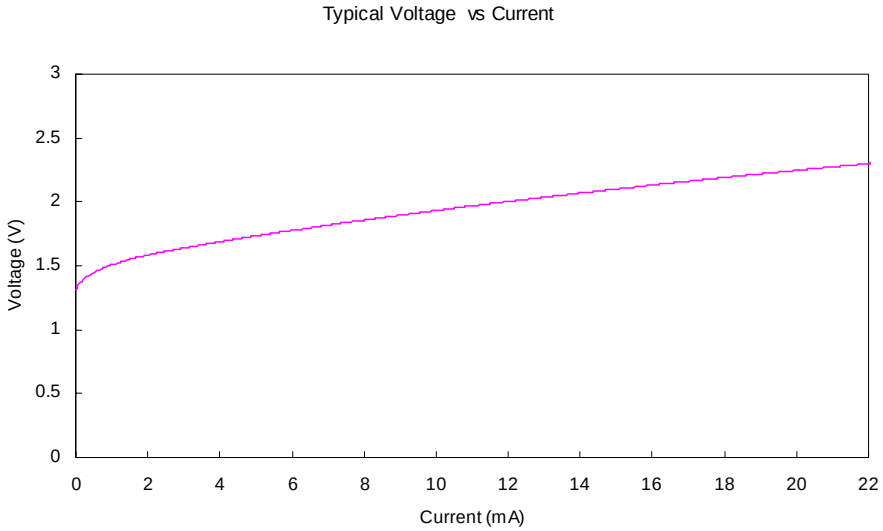
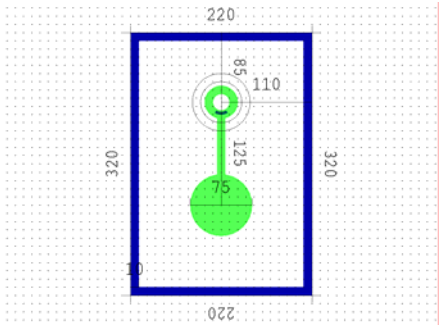


Fig .2 Typical Electrical Characteristics



Chip Size: 220 µm×320 µm with 200(±15) µm thickness



WARNING:

The VCSEL is a class IIIb laser in the safety standard ANSI Z136.1 and should be treated as a potential eye hazard.