TSD-8B12-753

High Performance 10 Gbps Oxide VCSEL

Preliminary

FEATURES:

- Capable to run 10 Gbps
- P and N bonding pads on different surfaces
- Low divergence angle to ensure high optical coupling efficiency
- Wide operation temperature range -40℃~ 85℃

ELECTRO-OPTICAL CHARACTERISTICS:

PARAMETERS	SYMBOL	MIN	TYP	MAX	UNIT	TEST CONDITIONS
Threshold Current	I_{th}	-	0.85	-	mA	
Output Power	P_o	-	2.2	-	mW	I_F =6 mA
Slope Efficiency	η	0.20	0.40	0.65	mW/mA	I_F =6 mA
Wavelength	λ_P	840	-	860	nm	I_F =6 mA
Forward Voltage	V_F	2.20	2.35	2.50	V	I_F =6 mA
Series Resistance	R_S	70	90	100	Ω	I_F =6 mA
Beam Divergence	θ	-	24	30	degree	I_F =6 mA (1/e^2)
Spectral width (RMS)	$\Delta\lambda$	0.20	-	0.45	nm	I_F =6 mA
Reverse Current	Ir	-1		0	nA	V_R = -14V
3dB Bandwidth	BW	8	-	-	GHz	I_F =6 mA

Notes:
All parameters except mentioned are measured at I_F=6 mA, 25℃, CW operation.

ABSOLUTE MAXIMUM RATINGS:

PARAMETERS	MIN	MAX	UNIT	CONDITIONS
Storage Temperature	-40	125	℃	
Operating Temperature	-40	85	℃	
Continuous Forward Current		15	mA	
Continuous Reverse Voltage		14	V	10μA

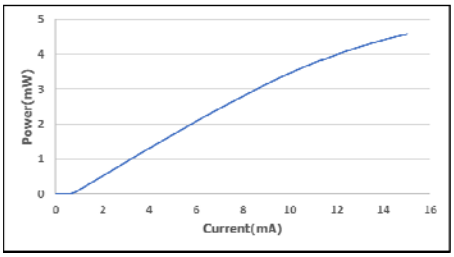


Fig. 1 Typical Optical Characteristics

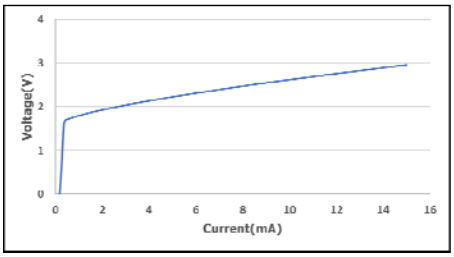
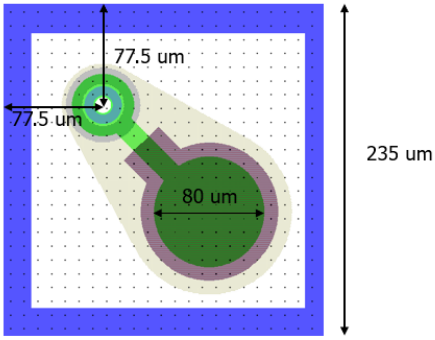


Fig. 2 Typical Electrical Characteristics

OUTLINE DIAGRAM:

- Chip length: 235 μm ± 20 μm
- Chip width: 235 μm ± 20 μm
- Chip thickness: 200 ± 20 μm



WARNING:

The VCSEL is a class 3B laser in the safety standard IEC 60825-1:2014 and should be treated to avoid exposure to beam .