

AOE131A:

1310 nm Electroabsorption Modulated Laser (EML) for 10 Gb/s Applications

DESCRIPTION

AOE131A is a cooled 1310nm wavelength DFB laser integrated with an electroabsorption modulator. The modulation voltage is applied to the modulator section only while the laser section operates in a CW condition allowing extremely low wavelength chirping. This product is currently available either in bare die (chip) form or in a high speed chip on submount (COS) configuration. Extinction ratio of more than 8 dB can be achieved with a 2 Vpp applied to the modulator section. This device is suitable for a modulation rate of up to 10 Gb/s.

FEATURES

- Modulator integrated DFB laser diode in bare die or high speed chip-on-submount (COS) form
- Low operating threshold current with high output power
- High extinction ratio with low chirp

APPLICATIONS

- Short reach metro application up to 12 km
- Intermediate reach application up to 20 km
- Long reach application up to 40 km

OPTICAL AND ELECTRICAL CHARACTERISTICS

(CW at $T_o = 25\text{ }^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Peak Wavelength	λ	1290		1320	Nm	
Threshold Current	I_{th}			35	mA	CW, $V_m=0$
Laser forward current	I_f			150	mA	
Laser Reverse Voltage	V_r			2	V	
Modulator Bias Voltage	V_m	-5	-1	0	V	
Average Optical Power	P_f	0.0		3.0	dBm	
Sidemode Suppression Ratio	SMSR	30			dB	
Modulator Drive Voltage	V_{mod}			2.6	V	Peak to peak
Extinction Ratio	R_{ext}	8			dB	Data rate=10 Gb/s
Rise Time	t_r			30	ps	20 % - 80%
Fall Time	t_f			30	ps	80 % - 20%

TYPICAL CHARACTERISITIC

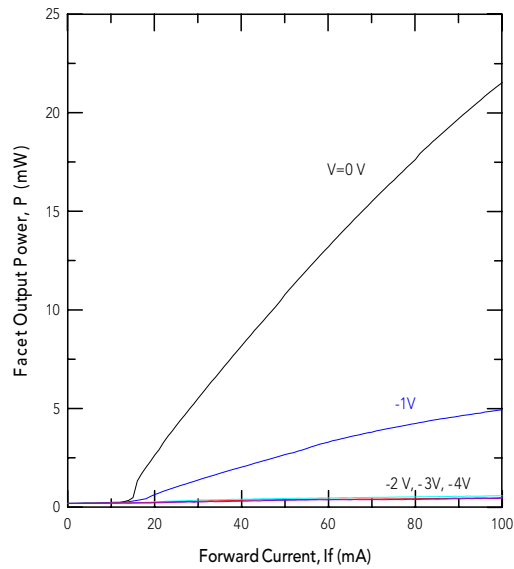


Fig.1 Chip on submount output power

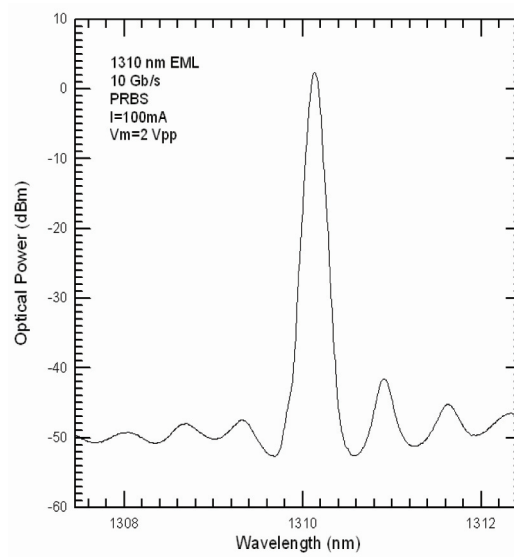


Fig.2 Lasing spectrum under 10Gb/s modulation

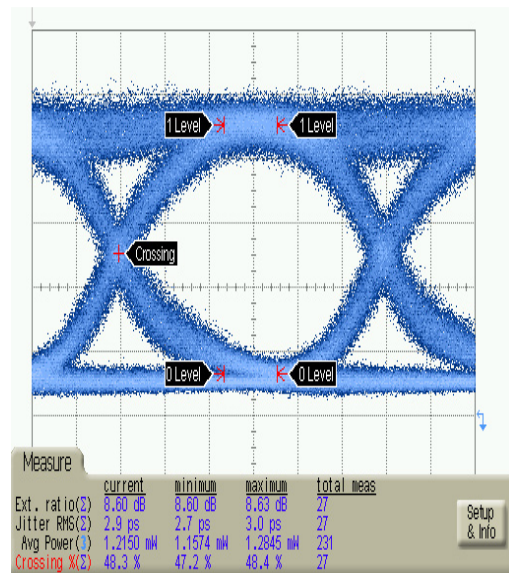


Fig.3 Eye diagram at 10 Gb/s data rate

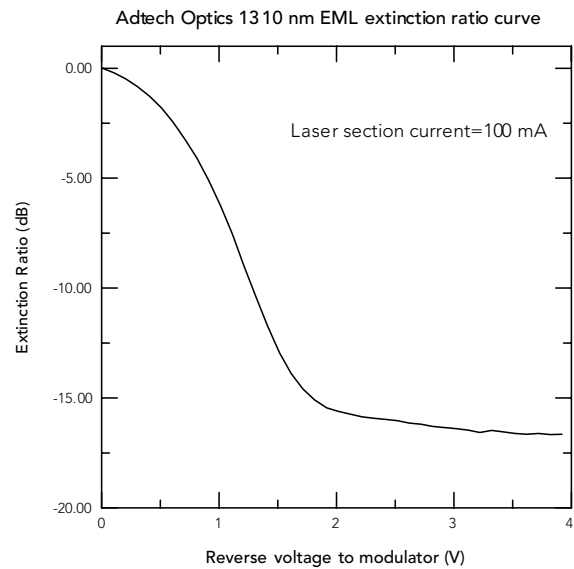


Fig.4 Extinction ratio vs. modulation voltage