

AOD149AA

1490 nm DFB Laser Diode for 2.5 Gb/s

DESCRIPTION

AOD149AA is an uncooled 1490 nm DFB (distributed feedback) laser diode packaged in TO-56 with an aspheric lens and an output power monitoring photo diode. The excellent high output power over wide temperature range makes it suitable for FTTH PON (Fiber To The Home Passive Optical Network) systems with modulation rate up to 2.5 Gb/s.

FEATURES

- Low threshold current and high output power
- Stable single transverse and longitudinal mode emission

APPLICATION

- FTTH PON

ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Rating	Unit
Optical output power	P_o	15	mW
LD forward current	I_{fl}	150	mA
LD reverse voltage	V_{rl}	2	V
PD reverse voltage	V_{rp}	20	V
PD forward current	I_{fp}	10	mA
Operating temperature	T_o	-20 to 85	°C
Storage temperature	T_s	-40 to 100	°C

OPTICAL AND ELECTRICAL CHARACTERISTICS

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

Parameter	Symbol	Min	Typ	Max	Unit	Conditions
Threshold current	I_{th}	—	10	13	mA	—
Slope efficiency	η	0.25	0.4	—	W/A	$P_o = 5\text{ mW}$
Operating current	I_{op}	—	—	40	mA	$P_o = 5\text{ mW}$
Operating voltage	V_{op}	—	1.1	1.6	V	$P_o = 5\text{ mW}$
Lasing Wavelength	λ	1483	1490	1494	nm	$P_o = 5\text{ mW}$
Side mode suppression ratio	SMSR	30	40	—	dB	$P_o = 5\text{ mW}$
Spectral Width (-20dB)	$\Delta\lambda$	—	—	0.5	nm	$P_o = 5\text{ mW}$
Rise time	t_r	—	100	150	psec	10% - 90%
Fall time	t_f	—	100	150	psec	90% - 10%
Monitor current	I_m	50	200	600	μA	$P_o = 5\text{ mW}$
Dark current	I_d	—	—	20	μA	$V_{rp} = 5\text{ V}$
Capacitance	C_t	—	10	20	pF	$V_{rp} = 5\text{ V}, f = 1\text{ MHz}$

TYPICAL CHARACTERISTICS

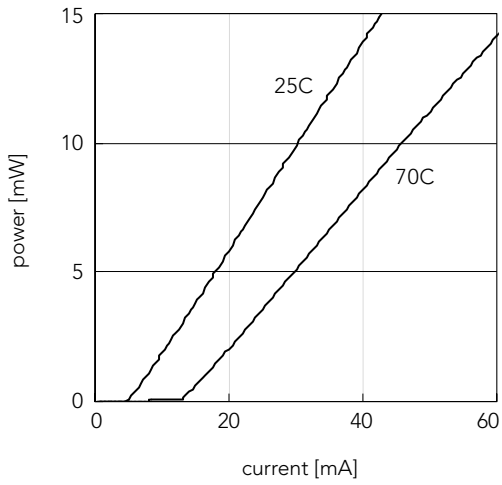


Fig. 1 Power vs. current

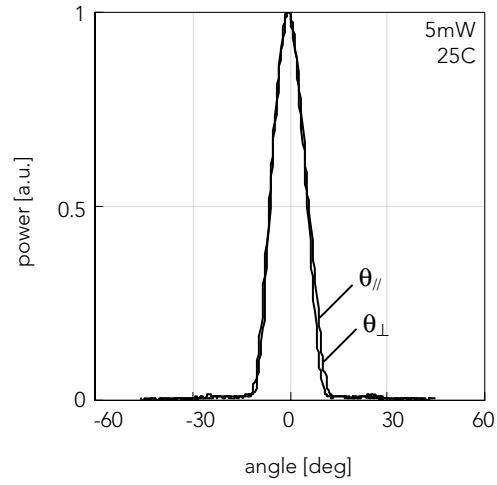


Fig. 2 Far field pattern

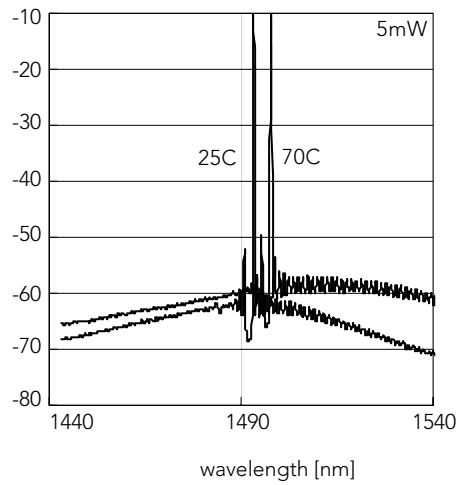


Fig. 3 Lasing spectrum