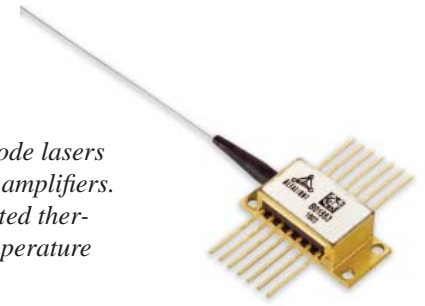




2.5W 14-Pin Cooled Laser

Alfalight's Telcordia-qualified 976 nm high-power multimode diode lasers are ideal for highly reliable cladding-pumped EDFAs and CATV amplifiers. The hermetically-sealed, epoxy-free 14-pin package with integrated thermoelectric cooler allows ease of use through user-controlled temperature tuning.



- Qualified to Telcordia standards
- Hermetically-sealed package with thermoelectric cooler
- Integrated monitor photodiode
- Up to 2.5W watts output power

Device Characteristics*

AM4-976A-10-253

Electro-Optical	Symbol	Min	Typ	Max	Units
Center wavelength	λ_c	976 ± 3			nm
Output power	P_o	2.5			W
Operating current	I_o	3.5	4.0		A
Forward voltage	V_f	1.6	1.7		V
Threshold current	I_{th}	0.3	0.45		A
Spectral width, FWHM	$\Delta\lambda$	3.5	4.5		nm

Monitor Photodiode

Detector responsivity	dI_{pd}/dP_o	125	625	1400	$\mu A/W$
Detector reverse bias	V_r	0		5	V
Detector dark current	I_{dc}		0.1	50	nA

Thermo-Electric Cooler

Thermistor value at 25°C	R_{th}	9.5	10	10.5	k Ω
Thermistor constant, 0 - 50°C	β	3892			K
Spectral shift with submount temperature		0.35			nm/°C
TEC drive current, $\Delta T = 45^\circ C$	I_{TEC}	2.7			A
TEC drive voltage, $\Delta T = 45^\circ C$	V_{TEC}	3.0			V
Heating/cooling capacity	ΔT	-65		45	°C

Mechanical

Case operating temperature		-40		70	°C
Case storage temperature		-40		85	°C
Fiber core diameter		105			μm
Fiber numerical aperture	NA	0.15			
Fiber length		1.5			m
Fiber pull strength		1.0			kg-f

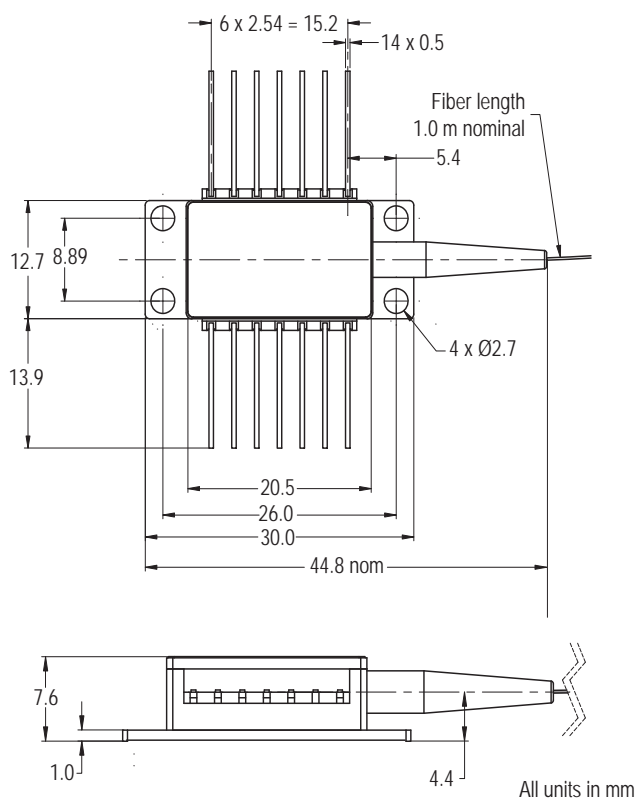
* All conditions are at 25°C submount temperature and output power unless otherwise noted.

Absolute Maximum Ratings*	Min	Max	Units
Soldering temperature **		260	°C
Soldering duration**		10	s
Mounting torque		10	in-oz
Short term fiber bend radius	12.5		mm
LD reverse current		10	mA
LD current transient max		t = 100ns 1000 mA	
LD ESD damage C=100pF, R=1.5kW		HBM > 1000V	
Detector ESD damage C=100pF, R=1.5kW		HBM 500V	
Detector reverse voltage		15	V
Detector forward current		100	mA
Thermistor voltage		5	V
Thermistor current		2	mA
Thermoelectric cooler current		4	A
Thermoelectric cooler voltage		4.5	V

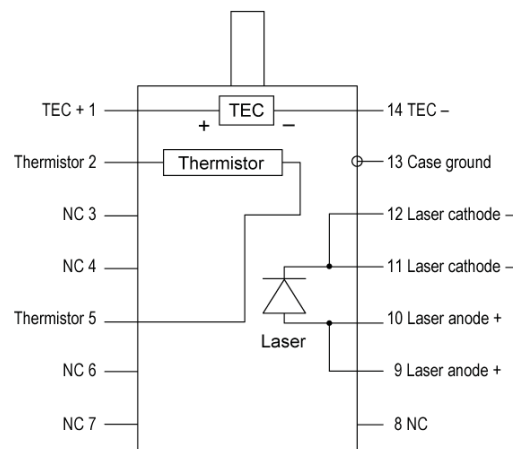
* These are safe short-term exposure limits, non-operating. Prolonged exposure to conditions at the absolute maximum ratings will have a deleterious effect on reliability and could shorten diode lifetime.

** No point on the package (other than the leads) should exceed the maximum case storage temperature during soldering.

Package Dimensions



Package Pinout



NOTE: PIN PAIRS 9 & 10 AND 11 & 12 MUST BE CONNECTED FOR LOWEST OPERATING VOLTAGE AND POWER DISSIPATION