

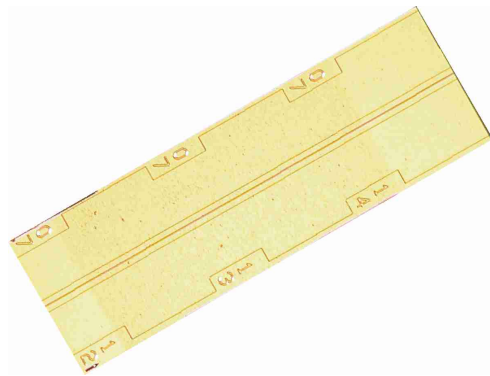
LU0980C160

Pump Laser Chip

Up to 160mW operation power

Features:

- Wavelength 976-984nm
- High kink-free power
- Proven reliability for high power operation
- Suited for cooled operation
- Compliant with Telcordia GR-468-CORE



Description / Applications:

The Lumics LU0980C160 laser chip contains an optimized GaAs/AlGaAs/InGaAs quantum well high power laser. It has been specifically designed for applications in low noise high power Erbium Doped Fiber Amplifiers (EDFA). The extremely stringent reliability requirements are achieved through our patent pending innovative technology. This includes careful design, exactly defined manufacturing and extensive testing. The qualification contains a set of optoelectronic, thermal and mechanical tests. Each laser chip is individually serialized for traceability and is shipped with a specified set of test data.

Characteristics:

Parameter	Conditions	Symbol	Min	Typ	Max	Unit
Kink-free (1) Facet Power		P_k			230	mW
Operating Power (2)	spec.	P_{op}	120	160		mW
Operating Forward Current		I_{op}		230	260	mA
Threshold Current		I_{th}		64	70	mA
Characteristic Temp.		T_0	110	130		K
Forward Voltage	at I_{op} , T_{op}	V_{op}		1.55	1.6	V
Slope Efficiency	at I_{op} , T_{op}	η_{diff}	0.88	0.93		W/A
Peak Wavelength	at I_{op} , T_{op}	λ_{peak}	976	980	984	nm
Spectral Width (3)	at I_{op} , T_{op}	λ_{rms}		1.5	2	nm
Lateral Farfield	at I_{op} , T_{op}	$\Delta\Theta_{ }$	5	6	8	deg
Vertical Farfield	at I_{op} , T_{op}	$\Delta\Theta_{\perp}$	22	23	25	deg
AR Reflectivity		r_f		1		%
HR Reflectivity		r_r		95		%

(1) Kink-free is defined as $|dL/dl| - \langle dL/dl \rangle < 0.2$, where $\langle dL/dl \rangle$ is the average slope efficiency below kink

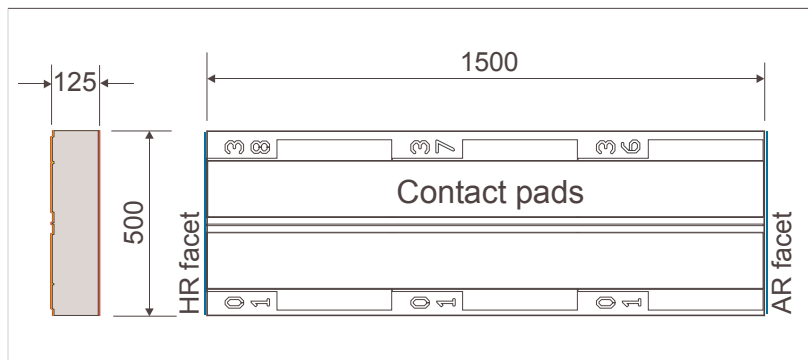
(2) Operating current (power) is the maximum current (power) where the slope efficiency does not decrease by more than 20% from average between 1.8x - 3.0x threshold to 120% of the maximum rated output power.

(3) λ_{rms} is defined as 95% power is in the central peak defined as $\pm rms$

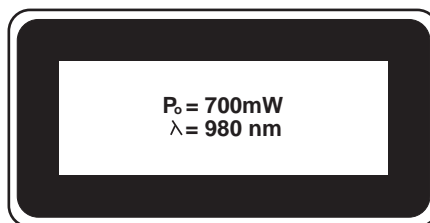
Absolute Maximum Ratings:

Parameter	Symbol	Min	Max	Unit
Forward Current	$I_{F,max}$		350	mA
Reverse Voltage	$V_{R,max}$		0.3	V
Storage Temp.	T_{max}	-40	85	°C
Processing Temp. (max. 10 sec.)	$T_{C,max}$		345	°C

Drawing of Laser Chip (dimensions in μm):



Customized versions with other operation power levels and different wavelengths are available on request.



Complies with 21 CFR1040.10

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