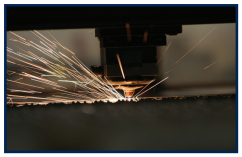
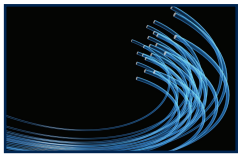
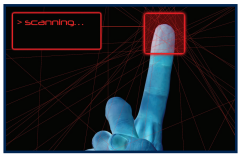
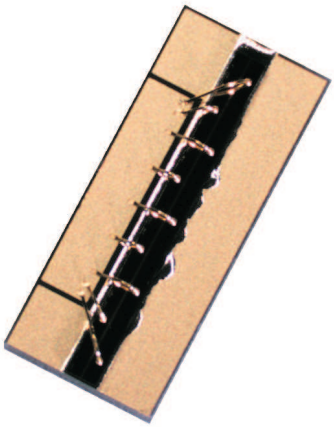




LU10xxS550
Single Mode Laser Chip on Submount
Up to 550 mW Operating Power

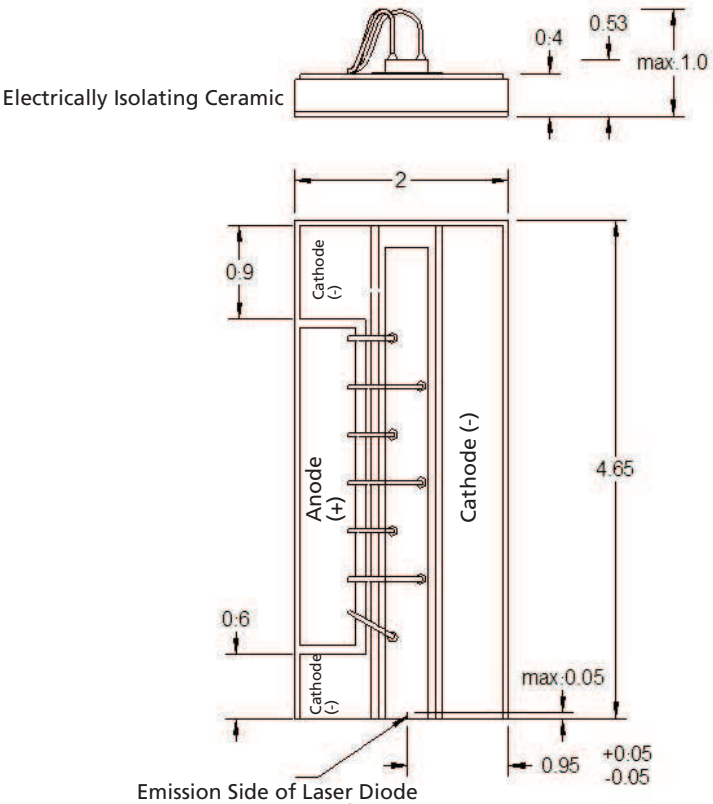


Description:
The Lumics single mode laser chip on submount contains an optimized GaAs/AlGaAs/InGaAs quantum well high power laser. The extremely stringent reliability requirements are achieved through our patent pending innovative technology. This includes careful design, exactly defined manufacturing 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.

Features:
- Wavelengths: 1010,1030,1070,1080 nm
- Kink-free power up to 600mW

Benefits:
- Proven Reliability for High Power Operation
- Suited for cooled and uncooled Operation

Module Drawing (Dimensions in mm)



(1) Anode and cathode isolated from bottom metallization

(2) Top and bottom metallization >0.9µm Au plating for wire bonding and soldering

We manufacture diode lasers.

Characteristics (Top = 25°C)

Parameter	Conditions	Symbol	Min	Typ	Max	Unit
Threshold Current		I_{th}		65	80	mA
Characteristic Temp.		T_0	150			K
Forward Voltage	at Iop, Top	V_{op}		1.5	1.65	V
Slope Efficiency	at Iop, Top	η_{diff}		0.94		W / A
Peak Wavelength	at Iop, Top	λ_{peak}	1005	1010	1015	nm
Peak Wavelength	at Iop, Top	λ_{peak}	1025	1030	1035	nm
Peak Wavelength	at Iop, Top	λ_{peak}	1065	1070	1075	nm
Peak Wavelength	at Iop, Top	λ_{peak}	1075	1080	1085	nm
Spectral Width	at Iop, Top	FWHM		0.3		nm
Electrical Field Vector Orientation	in expitaxial plane			TE		
Polarisation Extinction Ratio		PER	20			dB
Lateral Farfield (FWHM)	at Iop, Top	$\Delta\Theta_{\parallel}$	6	8	10	deg
Vertical Farfield (FWHM)	at Iop, Top	$\Delta\Theta_{\perp}$		28	33	deg
AR Reflectivity		rf		0.2		%
HR Reflectivity		rr		95		%
Spectral Shift with Current		λ_{I_Shift}		0.007		nm / mA
Spectral Shift with Temp.		λ_{T_Shift}		0.3		nm / K

Operating Parameters

Product Code	Operating Power (1) Pop [mW]	Max. Operating Current Iop [mA] BOL	EOL	Min. Kink free Power (2) Pk [mW]
LU10xx550	550	800	850	600

Note:
(1) Operating current (power) is the maximum current (power) where the slope efficiency does not decrease by more than 20% from average between 1.8x - 4.5x threshold to 110% of the maximum rated output power.
(2) Kink-free is defined as IdL/dI - <dL/dI> I < 0.2, where <dL/dI> is the average slope efficiency below kink.

Absolute Maximum Ratings

Parameter	Symbol	Min	Max	Unit
Forward Current	$I_{F, max}$		900	mA
Reverse Voltage	$V_{R, max}$		2	V
Operating Temp.	T_{op}	-10	70	°C
Storage Temp.	T_{max}	-10	85	°C
Processing Temp. Submount, max. 10 sec.	$T_{S, max}$		260	°C

Note:
(1) Absolute maximum ratings may be applied to the laser module for short period of time only. Exposure to maximum ratings for extended period of time or exposure above one or more max ratings may cause damage or affect the reliability of the device.
(2) LD reliability is a function of the operating temperature and current
(3) Storage and operation in non condensing environment only such that the environmental temperature is below the dew point

User Safety