

Active Components Laser Chips on Submount

Key Features

Up to 540 mW operating power

Wavelength range: 970-985nm

Beam Divergence: 6° x 22°

Uncooled operation

Telcordia GR-468-CORE qualified

RoHS compliant

1999LCV1

650mW Kink-Free, 980nm Pump Laser Chip On Submount

The 1999LCV1 is a high performance chip on AlN submount (CoS) that contains a qualified AlGaAs/GaAs/GaInAs quantum well laser diode.

The Metal Organic Vapor Phase Deposition (MOVPE) strained layer quantum well (SLQW) vertical structure is performed on 3" GaAs substrates whereas facet coatings are made on bars.

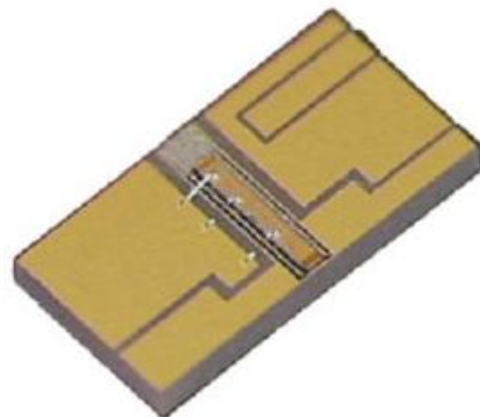
With its low beam divergence, the 1999LCV1 can be easily coupled to a single mode fiber (SMF).

The stringent reliability requirements are achieved through our patent pending innovative technology.

Qualification contains a set of optoelectronic, thermal and mechanical tests. Each laser chip is individually serialized for traceability with a specific set of test data.

The CoS meets the Telcordia™ GR-468-Core requirements.

The 1999LCV1 is available with an operating power up to 540 mW.



For more Info

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Laser 1999LCV1

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Source of Smart Solutions



ELECTRO-OPTICAL CHARACTERISTICS

The following parameters are specified BOL at 25 °C for chips mounted p-up on AlN carrier.

Parameter	Test Conditions	Symbol	Min	Typ	Max	Unit
Threshold current	Linear fit between 6 and 20mW	I _{th}	-	-	65	mA
Forward voltage	700mA	V _{f 700}	-	-	1,76	V
Operating current	Operating temp = 25°C	I _{op}	-	-	700	mA
Operating current	Operating temp up to 75°C	I _{op}	-	-	600	mA
Optical output power	700mA@25°C	P _{f 700-25°C}	540	-	-	mW
	600mA@75°C	P _{f 600-75°C}	360	-	-	mW
Kink free optical output power	Determined from L-I	P _{KF}	650	-	-	mW
Peak wavelength	700mA	λ _{peak}	970	-	985	nm
Main peak spectral width	700mA - half height	λ _{width}	-	3.5	-	nm
Front facet reflectivity *	966-990nm	-	0.4	1	1.2	%
Back facet reflectivity *	966-990nm	-	93	95	97	%
Polarization extinction ratio TE/TM	700mA	PER	20	-	-	dB
Parallel beam divergence	From 150mA to 700mA, FWHM	θ _{//}	5	6	8	°
Perpendicular beam divergence	From 150mA to 700mA, FWHM	θ _⊥	19	22	25	°
Spectral shift with current		λ _I shift	-	0.01	-	nm/mA
Spectral shift with temperature		λ _T shift	-	0.3	-	nm/K

* Customized AR and HR reflectivity can be proposed upon request

ABSOLUTE MAXIMUM RATINGS

Parameters	Conditions	Symbol	Min	Max	Unit
Storage temperature	2000h	T _{stg}	-40	85	°C
Operating temperature		T _{op}	-5	75	°C
LD forward drive current	1 sec. max	I _{f_max}	-	900	mA
LD reverse voltage		V _{r_max}	-	2	V
ESD damage	Human Body model, C = 100 pF, R = 1.5 Ω	V _{ESD}	-	1000	V

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MECHANICAL CHARACTERISTICS

6x3mm² AIN SUBMOUNT VERSION

Parameters	Min	Typ	Max	Unit
Chip length	2.380	2.400	2.450	mm
Chip width	0.320	0.350	0.380	mm
Chip thickness	0.065	0.090	0.110	mm
AIN submount length	2.950	3	3.050	mm
AIN submount width	5.950	6	6.050	mm
AIN submount thickness	0.610	0.635	0.660	mm

3.8x2.9mm² AIN SUBMOUNT VERSION

Parameters	Min	Typ	Max	Unit
Chip length	2.380	2.400	2.450	mm
Chip width	0.320	0.350	0.380	mm
Chip thickness	0.065	0.090	0.110	mm
AIN submount length	2.850	2.9	2.950	mm
AIN submount width	3.750	3.8	3.850	mm
AIN submount thickness	0.425	0.450	0.475	mm

LASER SAFETY INFORMATION

This laser chip emits invisible light. Take appropriate precautions to prevent undue exposure to naked eye when module is in operation. This product is classified Class 4 Laser Product according to IEC-60825-1.



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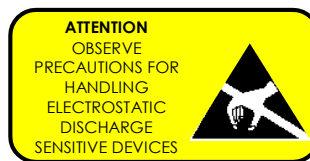


HANDLING

This product is sensitive to electrostatic discharge and should not be handled except at a static free workstation.

Take precautions to prevent ESD; use wrist straps, grounded work surfaces and recognized anti-static techniques when handling the product.

Care should be taken to avoid supply transient currents and voltages. Drive voltage above the maximum specified in absolute maximum rating section may cause permanent damage to the device.



ORDERING INFORMATION

PRODUCT FAMILY: 1999LCV1 LASER CHIP ON SUBMOUNT

Part Number	Submount	Pump application Wavelength (for indication, depending on FBG design)
40004708	6x3 mm	974.5 nm
40805200	6x3 mm	976.0 nm
40805160	3.8x2.9 mm	974.5 nm
40805162	3.8x2.9 mm	976.0 nm

3SPGroup can also develop custom products to meet a wide range of technical requirements. Please contact your Sales Manager for details.

CONTACT INFORMATION

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