

## Laser Chip on Submount

### Key Features

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Distributed Feed Back (DFB)  
Laser

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InGaAsP Strained Quantum  
Well Laser Structure on InP

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Buried Ridge Stripe (BRS)

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Low Beam Divergence  
(FWHM) of 25° x 25°

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Output Power: 20mW, 40mW  
and 60mW

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C -Band  
(1529nm – 1570nm)  
50 GHz Wavelength Spacing

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### Applications

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CW Operation  
&  
HF Operation up to 2.5GHz

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Telecom TDM and DWDM

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Instrumentation

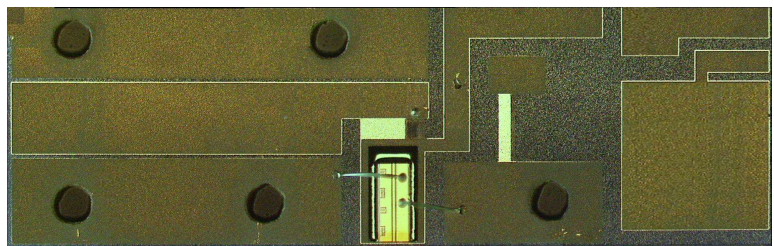
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## 1953LCV1

### Laser Chip on Submount

1953LCV1 chip is a high performance DFB chip incorporating a Gas Source Molecular Beam Epitaxy (GS-MBE) strained layer multiple quantum well (SLMQW) vertical structure on an InP substrate and a Buried Ridge Stripe (BRS) structure. The BRS structure, achieved with Metal Organic Vapour Phase Deposition (MOVPE) regrowth is performed on 2" wafers whereas facet coatings are made on bars.

This product is available on the whole C-band (1529nm – 1570nm)



## For more info

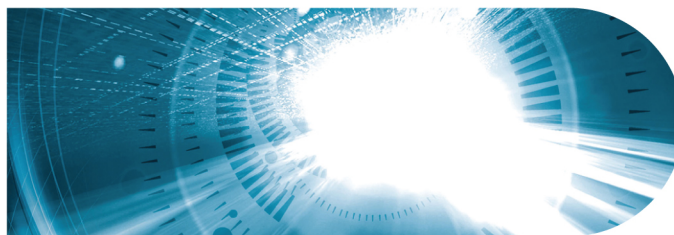
Please contact us at:

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**888.922.1044**

Europe & Asia: **+33 (0) 1 69 80 58 33**  
or via e-mail at **sales@3spgroup.com**

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**1953LCV1**  
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## ELECTRO-OPTICAL CHARACTERISTICS

All parameters are specified at 25°C Submount Temperature

Parameters	Conditions	Symbol	Min	Max	Unit
Drive Current Threshold	Intersection point with the x-axis of the P <sub>I</sub> linear fit curve between 0.2mW and 0.8 mW	I <sub>th</sub>	-	30	mA
External Efficiency		Eta	0.22	-	mW/mA
Nominal Optical output Power	200 mA	P <sub>200</sub>	20	-	mW
Maximum Optical Output Power		P <sub>max</sub>	63	-	mW
Current without kink		I <sub>f</sub> w/o kink	300	-	mA
Serial Resistance	V <sub>I</sub> linear fit curve between 2mW and 15 mW	R <sub>s</sub>	-	2.5	Ohm
Peak Emission Wavelength	P <sub>f</sub> =40 mW	L <sub>da P</sub>	(*)	(*)	nm
Side Mode Suppression ratio	P <sub>f</sub> =40 mW	SMSR	35		dB
Parallel Beam Divergence	I <sub>f</sub> =200mA	Par B D		25	°
Perpendicular Beam Divergence	I <sub>f</sub> =200mA	Per B D		25	°

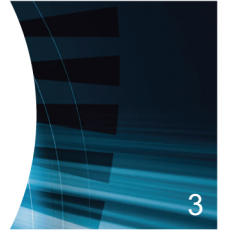
(\*)  
Peak Emission Wavelength is defined in "Ordering Information" section.

## ABSOLUTE MAXIMUM RATINGS

Exposing the device to stresses above those listed in this section could cause permanent damage. The device is not meant to operate under conditions outside the operational limits described in subsequent sections. Exposure to absolute maximum rating conditions for extended periods may adversely affect device reliability.

Parameter Conditions	Symbol	Min	Max	Unit
Storage Temperature	T <sub>stg</sub>	-40	+85	°C
Operating temperature	T <sub>op</sub>	-40	+85	°C
Forward Drive Current	I <sub>f</sub> max	-	500	mA
Reverse Voltage	V <sub>r</sub> max	-	2	V
ESD (Human Body Model)	V ESD		1 000	V

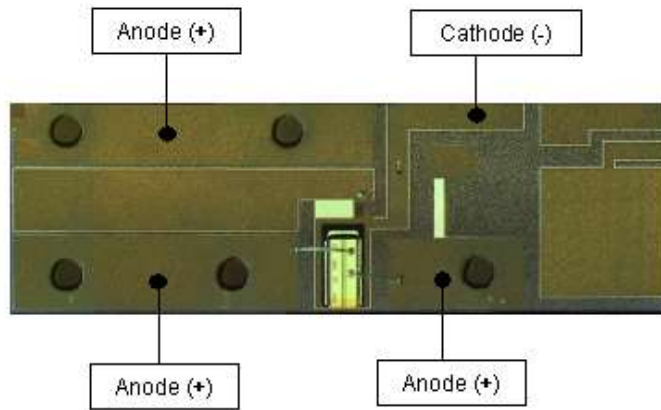
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**1953LCV1**  
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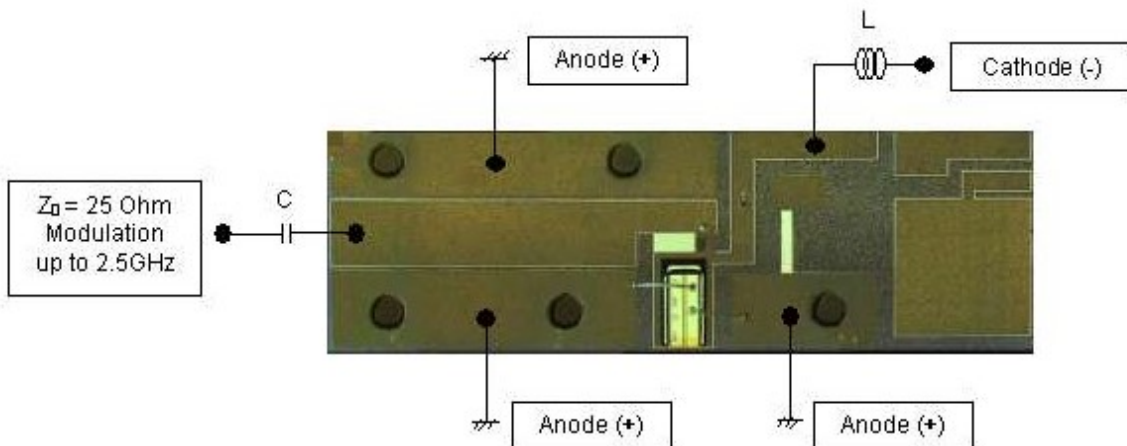
## DIMENSIONS AND WIRING

Submount dimensions :  
Length : 6.00 mm +/-0.05  
Width : 2.00 mm +/- 0.05  
Thickness : 0.535 mm +/- 0.03

- **CW use**

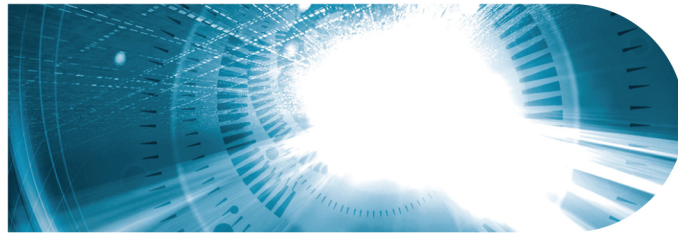


- **HF use**



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## QUALIFICATION and RELIABILITY

1953 LCV1 laser chip is qualified based on Telcordia GR-468-Core recommendations.

Wear Out Failure In Time is lower than 100 FIT

- for 15 years duration
- at chip conditions of :
  - . 40 mW Output Power
  - . and 25°C temperature

## LASER SAFETY INFORMATION

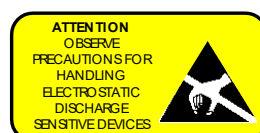
Appropriate precautions should be taken to prevent undue exposure to naked eye.  
This product is classified Class 3B Laser Chip according to IEC 60825-1.

## HANDLING

This product is to be used in a class 10.000 clean room (ISO 7 standard) at the following recommended conditions : 19~23°C and 40~60% HR

This product is sensitive to electrostatic discharge and should not be handled except at a static free workstation. Appropriate precautions should be taken to prevent ESD : use wrist straps, grounded work surfaces and anti-static techniques when handling the device.

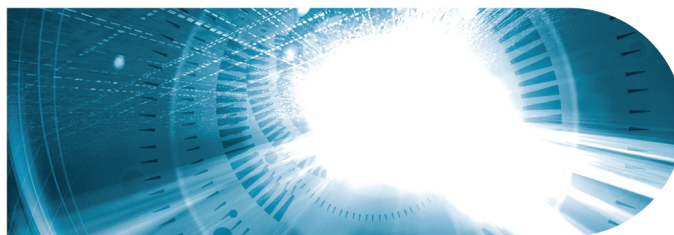
Care should be taken to avoid supply transient and over voltage that can cause electrical overstress damage to the chip. Over voltage above the maximum specified in absolute maximum rating section may cause permanent damage to the device.



# Laser 1953LCV1

Chip on Submount

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## ORDERING INFORMATION

Generic code depends on Output Power requirements (Please contact your Sales Manager)  
Code related to wavelength is defined as follow :

Lda Code	Lda Min (nm)	Lda Max (nm)
BP	1528.82	1529.62
BQ	1529.21	1530.01
BR	1529.60	1530.40
BS	1530.00	1530.79
BT	1530.39	1531.18
BU	1530.78	1531.57
BV	1531.17	1531.96
BW	1531.56	1532.35
BX	1531.95	1532.75
BY	1532.34	1533.14
BZ	1532.74	1533.53
CA	1533.13	1533.92
CB	1533.52	1534.32
CC	1533.91	1534.71
CD	1534.31	1535.10
CE	1534.70	1535.49
CF	1535.09	1535.89
CG	1535.49	1536.28
CH	1535.88	1536.67
CJ	1536.27	1537.07
CK	1536.67	1537.46
CL	1537.06	1537.86
CM	1537.46	1538.25
CN	1537.85	1538.65
CP	1538.25	1539.04
CQ	1538.64	1539.44

Lda Code	Lda Min (nm)	Lda Max (nm)
CR	1539.04	1539.83
CS	1539.43	1540.23
CT	1539.83	1540.62
CU	1540.22	1541.02
CV	1540.62	1541.41
CW	1541.02	1541.81
CX	1541.41	1542.21
CY	1541.81	1542.60
CZ	1542.21	1543.00
DA	1542.60	1543.40
DB	1543.00	1543.80
DC	1543.40	1544.19
DD	1543.80	1544.59
DE	1544.19	1544.99
DF	1544.59	1545.39
DG	1544.99	1545.79
DH	1545.39	1546.18
DJ	1545.79	1546.58
DK	1546.19	1546.98
DL	1546.59	1547.38
DM	1546.99	1547.78
DN	1547.39	1548.18
DP	1547.78	1548.58
DQ	1548.19	1548.98
DR	1548.59	1549.38
DS	1548.99	1549.78

Lda Code	Lda Min (nm)	Lda Max (nm)
DT	1549.39	1550.18
DU	1549.79	1550.58
DV	1550.19	1550.98
DW	1550.59	1551.38
DX	1550.99	1551.79
DY	1551.39	1552.19
DZ	1551.79	1552.59
EA	1552.20	1552.99
EB	1552.60	1553.39
EC	1553.00	1553.80
ED	1553.40	1554.20
EE	1553.81	1554.60
EF	1554.21	1555.01
EG	1554.61	1555.41
EH	1555.02	1555.81
EJ	1555.42	1556.22
EK	1555.83	1556.62
EL	1556.23	1557.02
EM	1556.63	1557.43
EN	1557.04	1557.83
EP	1557.44	1558.24
EQ	1557.85	1558.64
ER	1558.25	1559.05
ES	1558.66	1559.45
ET	1559.06	1559.86
EU	1559.47	1560.27

Lda Code	Lda Min (nm)	Lda Max (nm)
EV	1559.88	1560.67
EW	1560.28	1561.08
EX	1560.69	1561.48
EY	1561.10	1561.89
EZ	1561.50	1562.30
FA	1561.90	1562.71
FB	1562.32	1563.11
FC	1562.73	1563.52
FD	1563.13	1563.93
FE	1563.54	1564.34
FF	1563.95	1564.74
FG	1564.36	1565.15
FH	1564.77	1565.56
FJ	1565.17	1565.97
FK	1565.58	1566.38
FL	1565.99	1566.79
FM	1566.40	1567.20
FN	1566.81	1567.61
FP	1567.22	1568.02
FR	1567.63	1568.43
FS	1568.04	1568.84
FT	1568.45	1569.25
FU	1568.86	1569.66

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## ORDERING INFO

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

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