

LASER Chip

KeyFeatures

Fabry Perot Laser

Buried Ridge Stripe (BRS)

InGaAsP quantum well laser structure on InP

Near circular integrated Spot Size Converter (SSC) for great coupling efficiency

Operating temperature
-40°C to +85°C

Telcordia GR-468-CORE qualified

RoHS compliant

Applications

FTTH

Passive Optical Networks (PON)

Digital Transport Links
(SDH/SONET)

For moreInfo

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or via e-mail at sales@3spgroup.com

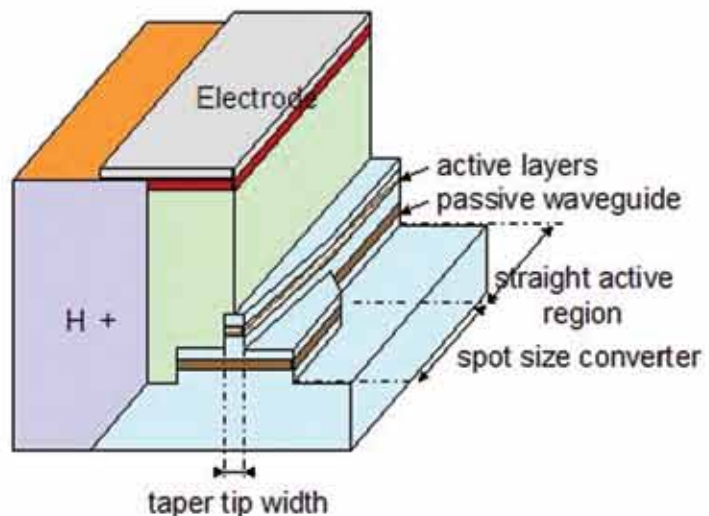
1931 FL

1310nm Uncooled Fabry-Perot Laser Chip with Spot size Converter for FTTH Applications

The 1931 FL laser chip is a 1310nm Fabry-Perot edge emitting laser chip with integrated spot size converter for use in uncooled applications up to 2.5Gb/s. The design is a Buried Ridge Stripe (BRS) structure with multiquantum well (MQW) active layers. Gold bonding pads are provided on both p and n sides.

The 1931 FL laser chip has been qualified to Telcordia GR-468-CORE requirements. Each laser is individually serialized for traceability and provided with a specific set of test data. All laser chips come from wafers that are certified to achieve acceptable results for multitemperature, CW and dynamic tests. These chips are produced utilizing stringent processes used for 3SPGroup Telecom components.

The 1931 FL laser Chip is manufactured in an ISO 9001 certified production line.



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OPTICAL CHARACTERISTICS

The following parameters are specified BOL* for chips mounted p-up on AlN submount and on -40°C , $+85^{\circ}\text{C}$ operating temperature range, unless otherwise specified.

Parameters	Test conditions	Symb	Min	Typ	Max	Units
Threshold Current	From 2mW to 4mW, $T_c = 25^{\circ}\text{C}$	I_{th}	2	-	40	mA
External Efficiency	Slope between 2mW and 4mW	η	0.15	-	-	MW/mA
Modulation current (above threshold)	$P = 6\text{mW}$	ΔI	5	-	40	mA
	$P = 9\text{mW}$		5	-	60	
Power w/o kink	$dP/dI > 15\%$, $T_c = 25^{\circ}\text{C}$	P_{wk}	11	-	-	mW
Maximum power	@300mA, 85°C	P_{max}	15	-	-	mW
Linearity	1mW \rightarrow 9mW	d	-	-	15	%
Front/Rear ratio		R_{ff}/r_f	-	-	35	-
Power at threshold		P_{th}	-	-	150	μW
Leakage current	0.5V	I_f	-	-	1	mA
Forward voltage	9mW	V_f	-	-	1.6	V
Serial Resistance	Slope $v(I)$ between 2 and 4mW	R_s	-	-	6	W
Center Wavelength	CW 6mW and 9mW, $T_c = 25^{\circ}\text{C}$	λ	1274	-	1356	nm
Spectral width		$\Delta \lambda_{RMS}$			2,5	nm
Parallel Beam divergence	9mW, FWHM	$\theta_{//}$		-	15	$^{\circ}$
Perpendicular Beam Divergence	9mW, FWHM	θ_{\perp}		-	18	$^{\circ}$

* End of Life (EOL) criteria: If $EOL = I_{fBOL} + 10\%$ ($BOL =$ Beginning of Life)

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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_{stg}	-40	85	°C
Operating temperature	T_{op}	-40	85	°C
LD forward drive current (10 ms max.)	I_{f_max}	-	300	mA
LD reverse voltage	V_{r_max}	-	2	V
ESD*	V_{ESD}	-	1000	V

* Human Body model

Mechanical Details

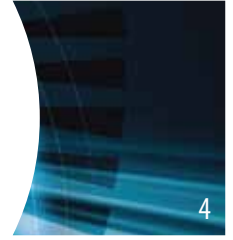
Parameters	Min	Typ	Max	Unit
Chip Length	-	-	500	mm
Chip width	-	-	250	µm
Chip thickness	-	-	120	µm

Qualification and Reliability

The 1931 FL laser chip is qualified based on Telcordia GR-468-Core recommendations.

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Laser Safety **Information**

Take appropriate precautions to prevent undue exposure to naked eye.
This product is classified Class 3A Laser Product according to IEC-825-1.



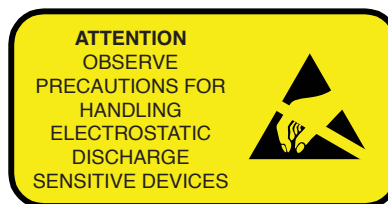
Handling

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 antistatic techniques when handling the product.

Care should be taken to avoid supply transient and over voltage.

Over voltage above the maximum specified in absolute maximum rating section may cause permanent damage to the device.



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Please note: information in this document is typical and must be specifically confirmed in writing by your supplier before it becomes applicable to any order or contract.
Information is subject to change without notice.
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ORDERING **INFO**

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