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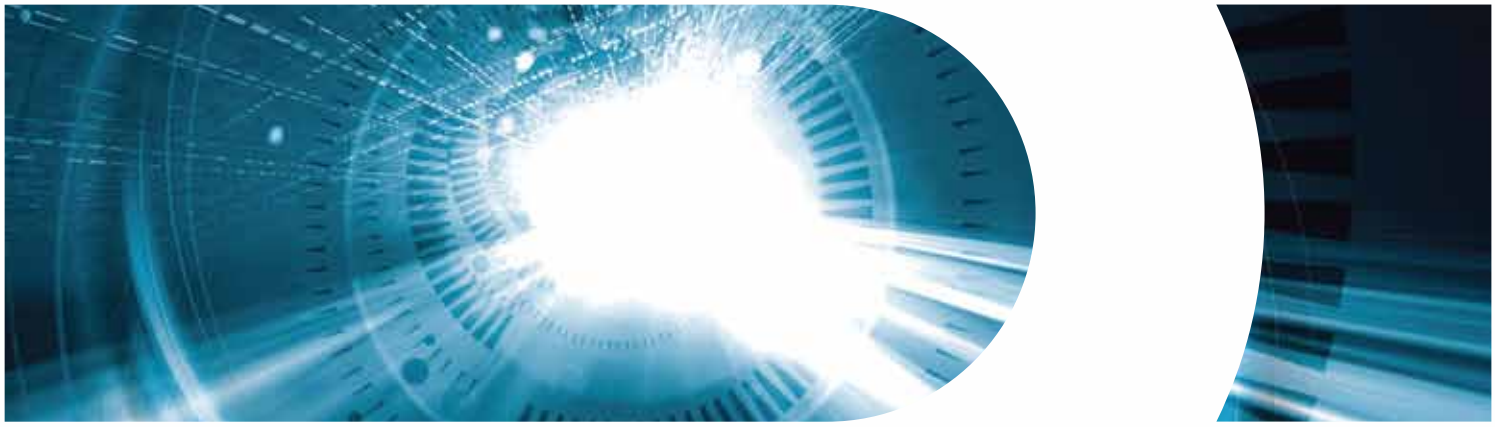


Transmission Laser Modules

KeyFeatures

- 7-pin package with GPO connector RF input
- 50Ω RF impedance
- InGaAsP monolithically integrated DFB laser chip
- Low RIN

Applications

- Local Oscillator distribution
- High frequency spectrum antenna distribution

1915 LMA ANALOG 10GHz

Prototype Target Specification 10mW 1.55µm Direct Modulated Analog Laser Module >10GHz bandwidth

The 1915 LMA contains a 3SPGroup DFB laser specifically developed for analog direct modulated applications.

The product is offered into a high frequency package with RF connector for the prototyping stage.

The 1915 LMA is optimized for high frequency analog signal distribution.

For moreInfo

Please contact us at:
North America: **514.748.4848**
888.922.1044
Europe & Asia: **+33 (0) 1 69 80 58 33**
or via e-mail at **sales@3spgroup.com**

3SP Group

1915 LMA ANALOG 10GHz

Prototype Target Specification
10mW 1.55µm Direct Modulated Analog Laser Module >10GHz bandwidth

OPTICAL **CHARACTERISTICS**

Parameters	Symb	Conditions	Min	Typ.	Max	Units
Operating case temperature	Tc		0		40	°C
Threshold current	Ith	@Twave	0		30	mA
Operating Laser Bias current	Iop	CW, @Popt	80	100	120	mA
Average Optical output power	Popt	CW, @Iop	10			mW
Laser forward voltage	Vf	CW, @Popt with 45Ω matching resistor			6	V
Slope Efficiency	Eta	CW, @Popt=0 to 10mW	0.14	0.2		mW/mA
Input Impedance	Zin	CW, @Popt		50		Ω
Emission wavelength	λ m	CW, @Popt	1530		1560	nm
Side mode suppression	SMSR	CW, @Popt, RL<=-24dB	35			dB
Modulation Bandwidth	BW	@- 3 dB electrical, Popt, under 50Ω	10	14		GHz
Input return loss	S11	@Popt, 0.1 to 10 GHz, , under 50Ω	10			dB
Relative Intensity Noise	RIN	@Popt, 0.1 to 10 GHz, under 50Ω , ORL<-35dB		-165	-155	dB/Hz
IMD2	IMD2	@Popt; @f1+f2; m=20%; f1= 900MHz; f2= 910MHz			-50	dBc
IMD3	IMD3	@Popt; @2f2-f1; m=20%; f1=2145MHz; f2=2155MHz			-70	dBc
IMD3	IMD3	@Popt; @2f2-f1; m=20%; f1=3795MHz; f2=3805MHz			-65	dBc
Monitor dark current	Id	Vd= - 5 V			10	nA
Monitor diode current	Iph	@Popt , Vd= - 5 V	30			µA
TEC current	It	@Popt, Iopmax=120mA, Tc= 40 °C			1	A
TEC voltage	Vt	@Popt, Iop max=120mA , Tc= 40 °C			2	V
Thermistor resistance	RTH	Tsubmount= 25°C	9.5		10.5	kΩ
Coefficient of RTH	rT	Tsubmount= 25°C	-3		-5	K^{-1}

Unless otherwise specified: Tlaser= 25°C, all parameters are BOL

Absolute Maximum **Ratings**

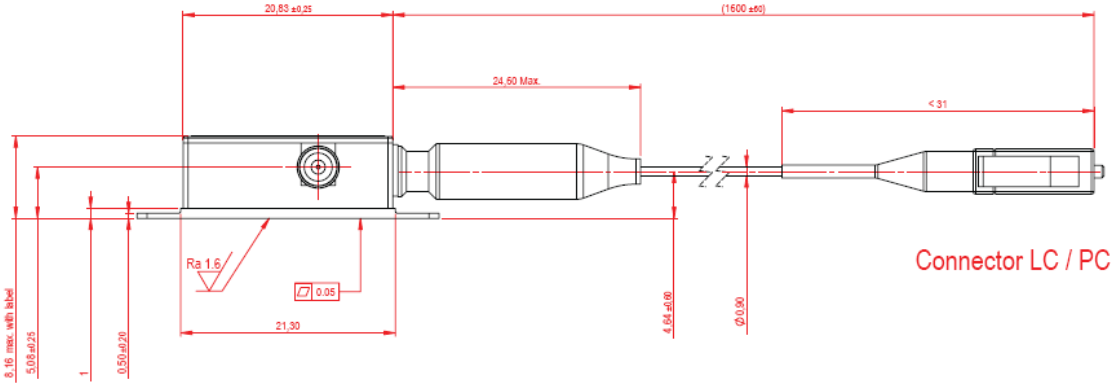
Parameters	Min	Max	Unit
Operating case temperature	0	40	°C
Storage temperature	0	40	°C
Laser forward current		150	mA
Laser forward voltage		7.5	V
Photodiode forward current		5	mA
Photodiode reverse voltage		20	V
TEC voltage		2.5	V
TEC current		1.4	V
Laser ESD (Human Body Model)		2000	V
Lead soldering time (at 260°C)		10	s
Fiber bend radius	25		mm
Packing mounting screw torque		0.2	N.m

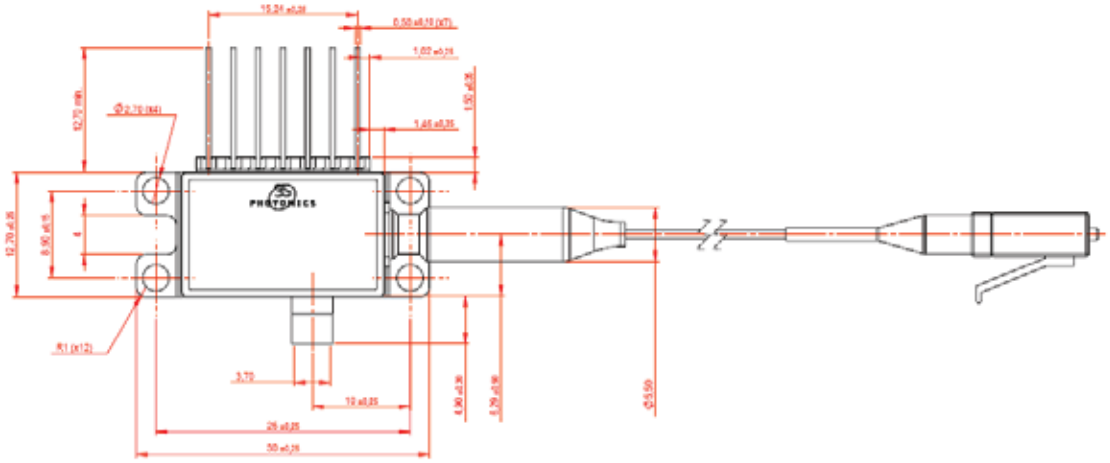
Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

1915 LMA ANALOG 10GHz

Prototype Target Specification
10mW 1.55µm Direct Modulated Analog Laser Module >10GHz bandwidth

Mechanical **Details**

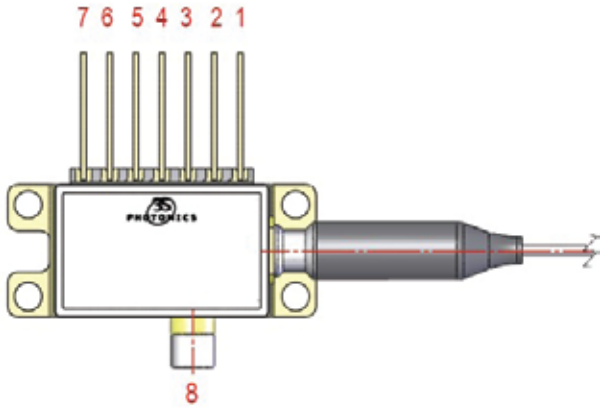




Dimensions are in mm
Fiber length 1600 ± 100 mm
(including optical connector)

Pin **Out**

N°	Description
1	Thermistor
2	Thermistor
3	Not Connected
4	Photodetector Anode (-)
5	Photodetector Cathode (+)
6	TEC (+)
7	TEC (-)
8	Laser LD Anode (50Ω)
Case	Ground, laser cathode



1915 LMA ANALOG 10GHz

Prototype Target Specification 10mW 1.55µm Direct Modulated Analog Laser Module >10GHz bandwidth

Shipment **packing**

Each device is individually packed in an anti-static container and in such a manner as to prevent damage in transit.

The packing shall include the following information:
3S Photonics logo
Product family name : 1915 LMA
Product code : 3CN number (see Ordering information section)
Serial number
Hazard warning label (ESD)
Laser Safety Class Label

Laser Safety **Information**

Take appropriate precautions to prevent undue exposure to naked eye.

This product is classified Class 1M Laser Product according to IEC-60825-1: edition2.

All versions are Class IIIB laser products per 21 CFR 1040-10 Laser. Safety requirements under accession number 0120546-00.

Device **marking**

The device shall be legibly and permanently marked with the following information:
3S Photonics logo
Product family name: 1915 LMA
Product code : 3CN number (see Ordering information section)
Serial number

Deliverable **data**

The following data shall be supplied with each device:
L(I) / Im(I) curves
Rated output power, Threshold current, Laser current at rated power (Iop), Monitor photodiode current at rated power, TEC voltage, TEC current, SMSR

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.

Handle the laser module by its package only, never hold it by its pigtail.
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.

1915 LMA ANALOG 10GHz

Prototype Target Specification
10mW 1.55µm Direct Modulated Analog Laser Module >10GHz bandwidth

ORDERING **INFORMATION**

Application	Part number	Output Power	Bandwitdth	Optical Connector
Analog 10mW DML	3CN01403AA	10mW	>10Ghz	LC/PC

Revised March 2012

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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