TECHNICAL DATA
DATA SHEET 995, REV. -

Preliminary

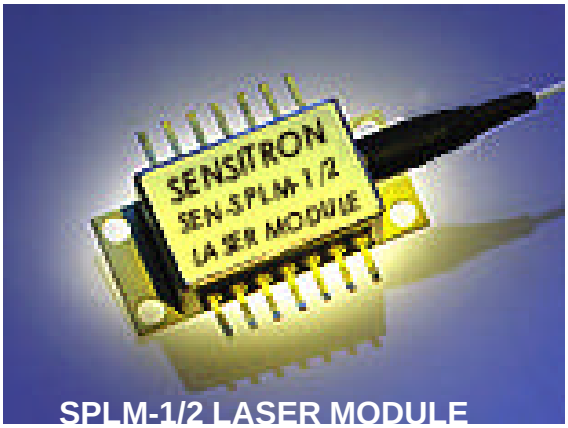
SPLM-1/2 LASER MODULE AND LASER CONTROL CIRCUIT

Features: (as packaged)

- Negative Bias
- High Output Power , to 20 mW
- OC-48 Pinout compatible
- Meets 468 (Bellcore) specifications
- 112 channel version available
- Internal thermoelectric cooler

Applications:

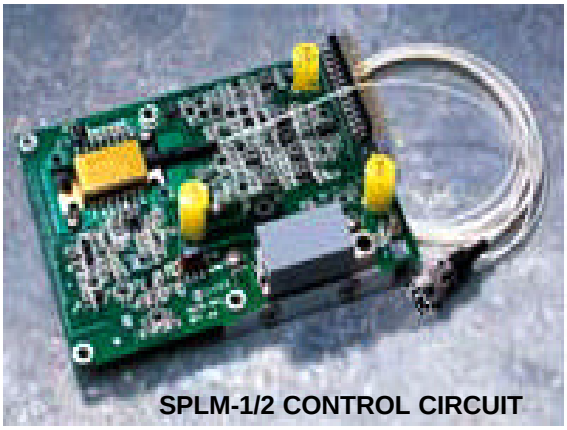
- Broadcast networks
- 1310 nm CATV transmitter design (forward path)
- Narrowcast networks



SPLM-1/2 LASER MODULE

Description: (Laser Module)

Sensitron Semiconductors SPLM-1/2 laser modules are designed to help OEM customers with their 1310 nm CATV transmitter design. The modules can be used for broadcast and narrowcast applications (CATV). The SPLM-1/2 modules are OC-48 pinout compatible, the modules linear and are available with power outputs to 20 mW.


SPLM-1/2 CONTROL CIRCUIT

Description: (Control Circuit)

Sensitron Semiconductor SPLM-1/2 laser module control circuit is designed to operate and to precisely control the optical output power of the SPLM laser module. By the use of a closed loop feedback system the control circuit keeps the laser output power constant. The control circuit also enables, by means of an internal thermoelectric cooler, the laser to operate over a wider ambient temperature range.

Sensitron Semiconductor can package your fiber optic designs with the high quality and precision that you expect in the optical market today. Let us manufacture your fiber optic designs. Please call our fiber optic sales manager in your area for more information.

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Characteristics:

Typical performance data. Values listed are expected levels of performance, and are not guaranteed.

Table 1. Electrical/Optical characteristics. (+25^{0}C)

PARAMETER	UNITS	MIN	TYPICAL	MAX
WAVELENGTH (**?$_{OP}$**) **I_F=** **T= T_{OP}**	nm	1300	1310	1320
OUTPUT POWER (OPTICAL) (**P_O**) **I_F=I_{OP}**	mW	4	--	20
ISOLATION (OPTICAL) (**ISO**) **T_{OP}**=25^{0}C	dB	30	--	--
SIDE MODE SUPPRESSION RATIO (**SMSR**) **I_F=I_{OP}**	dB	30	--	--
OPERATING CURRENT (**I_{OP}**) BOL	mA	--	65	120
THRESHOLD CURRENT (**I_{TH}**) BOL	mA	--	--	30
OPERATING CURRENT (MONITORING) (**I_{MON}**) **I_{OP}**=0mA	µA / mW	10	--	200
THERMISTOR RESISTANCE (INTERNAL) (**R_{TH}**) **T_{OP}**=25^{0}C	k?	--	10 +/- 1 AT 25^{0}C	--
THERMISTOR TEMPERATURE COEFFICIENT (**TC_{TH}**) **T_{OP}**=25^{0}C	%/^{0}C	--	-4.0 AT 25^{0}C	--

Table 2. RF Characteristics (+25^{0}C)

PARAMETER	UNITS	MIN	TYPICAL	MAX
FREQUENCY RANGE (**F**)	MHz	20	--	860
INSERTION LOSS (**IL**) 20 MHz TO 860 MHz	dB	--	0.5	--
COMPOSITE SECOND ORDER (**CSO**)	--	--	57	--
COMPOSITE TRIPLE BEAT (**CTB**)	dB	--	66	--
CARRIER TO NOISE RATIO (**CNR**) 112 UNMODULATED NTSC CHANNELS FIBER END WITH UP TO 20 mW OUTPUT POWER	dB	--	50	--
RELATIVE INTENSITY NOISE **(RIN)**	dB / Hz	--	< -155	--

Maximum Ratings: Operation above the maximum ratings shall cause permanent damage to the device. Device characteristics shall not be implied if any of these conditions are exceeded. Operating or expose the device to the maximum ratings for any length of time shall have an effect on device reliability.

PARAMETER	UNITS	MIN	MAX
OPERATING CASE TEMPERATURE RANGE **(Tc)** **I_F=I_{OP}**	^{0}C	-20	+65
STORAGE TEMPERATURE RANGE (**T_{STG}**)	^{0}C	-40	+70
REVERSE VOLTAGE ($_{PHOTODIODE}$) **V_{RPD}**	V	--	10
REVERSE VOLTAGE ($_{LASER}$) V_R	V	--	2
THERMOELECTRIC COOLER CURRENT (**I_{TEC}**) -20 ^{0}C < **T_C** < 65^{0}C **T_{OP}**=25^{0}C **I_F** =100 mA	A	--	1.5

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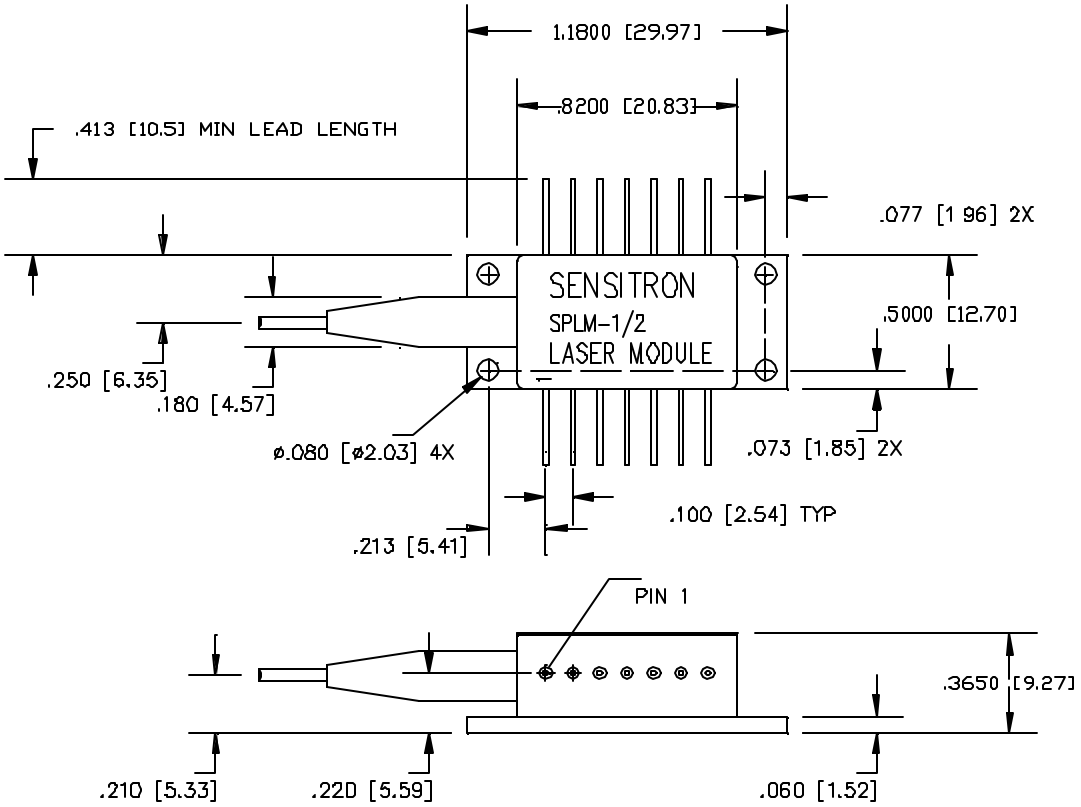
Mechanical Dimension: in inches [mm] (Laser Module)



Pin Assignments:

PIN NUMBER	DESCRIPTION
1	THERMISTOR
2	THERMISTOR
3	DC LASER BIAS (-)
4	MPD ANODE, CASE GROUND (-)
5	MPD CATHODE (+)
6	THERMOELECTRIC COOLER (+)
7	THERMOELECTRIC COOLER (-)
8	CASE GROUND
9	CASE GROUND
10	N/C
11	LASER DIODE COMMON (+)
12	LASER MODULATION (-)
13	LASER DIODE COMMON (+)
14	N/C

Ordering Information:

*Other options available.

DEVICE TYPE	DESCRIPTION	SPECIAL *
SPLM –1/2	LASER MODULE	