

SPLM-1/2 C-XX UNCOOLED LASER TRANSMITTER

Features: (as packaged)

- Operating wavelength 1300nm or 1550 nm
- 20 Pin Plastic DIP package.
- Operates with single 5 Volt power supply
- Automatic optical power control for constant output power over the case temperature.
- Data rates to 1062.5Mbits/s (NRZ)
- SDH/ SONET compatible
- Low power CMOS technology
- ECL compatible – differential inputs
- Operating temperature range -40°C to $+85^{\circ}\text{C}$



Applications:

- **High-speed data communications**
Fiber channel FC-0
- **Telecommunications**
Subscriber loops
Metro area networks
Inter and intra-office SONET/SDH

Description:

Sensitron Semiconductors SPLM-1/2C-XX laser transmitter is designed for high-speed data communication applications and in transmission systems. The transmitters are designed to operate at SONET rates up to OC-12, as well as ITU-T synchronous digital hierarchy (SDH) rates up to STM-4. Optional versions can operate up to 1062.5 Mbits/s.

The SPLM-1/2C-XX is designed with an automatic power compensation circuit that compensates for laser diode ageing. The internal design consists of a hermetically sealed laser and a single CMOS drive IC. The back facet and laser bias currents are electrically accessible via pins. Applying a logic level input may disable the optical output of the transmitter if so needed.

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.

Preliminary

Characteristics

Typical performance data. Values listed are expected levels of performance, and are not guaranteed. Values are measured at beginning of life (BOL) for laser at 50% duty cycle data signal and at +25°C.

Min/Max values are measured over the operating case temp and at the (EOL) end of life.

Table 1. Optical characteristics.

PARAMETER	UNITS	MIN	TYPICAL	MAX
CENTER WAVELENGTH (?)	nm	Call factory for options		
OUTPUT POWER AVERAGE (P _o)	dBm	Call factory for options		
<small>AS PER ITU-T RECOMMENDATION G.957 AND G.958</small>				
SIDE MODE SUPPRESSION RATIO (SMSR)	dB	30	--	--
EXTINCTION RATIO Re LOGIC 1 TO LOGIC 0 RATIO POWER LEVELS	dB	10	--	--
RMS SPECTRAL WIDTH (??)	nm	--	--	4
OPTICAL SWITCHING SPEED (t _R , t _F) BETWEEN 10%-90%, 50% DUTY CYCLE OC-3/STN-1		--	--	1.0
OC-12/STM-4	ns	--	--	.5
1062.5 Mbits/s		--	--	.37

Table 2. ELECTRICAL CHARACTERISTICS

PARAMETER	UNITS	MIN	TYPICAL	MAX
POWER SUPPLY VOLTAGE (V)	V	4.75	5.0	5.50
POWER SUPPLY CURRENT DRAIN (I)	mA	--	30	130
TRANSMITTER DISABLE VOLTAGE (V _D) TRANSMITTER IS NORMALLY ENABLED	V	V _{CC} -2.0	--	V _{CC}
TRANSMITTER ENABLED VOLTAGE (V _{EN})	V	V _{EE}	--	V _{EE} +.08
OUTPUT DISABLE TIME (t _D)	μs	--	--	0.20
OUTPUT ENABLE TIME (t _{EN})	μs	--	--	2.00
INPUT TRANSITION TIME (t _I)	ns	--	t/4	--
LASER BIAS VOLTAGE (V _B)	V	0.01	0.06	0.70
LASER MONITOR VOLTAGE (V _{BF}) (50% DUTY CYCLE)	V	0.01	0.05	0.20
INPUT DATA VOLTAGE (50% LOAD)				
LOW (V _{IL})	V	-1.81	--	-1.47
HIGH (V _{IH})	V	-1.16	--	-0.88

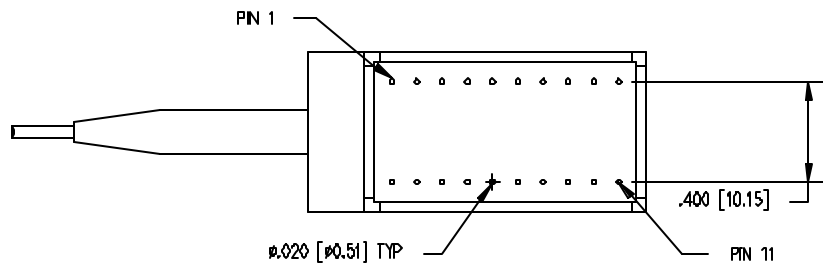
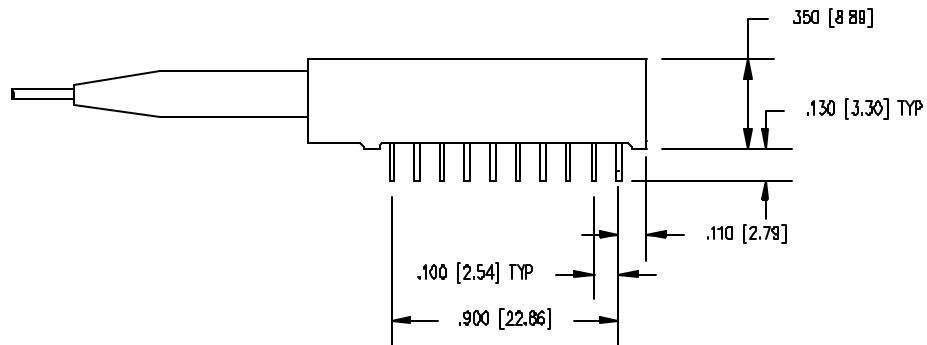
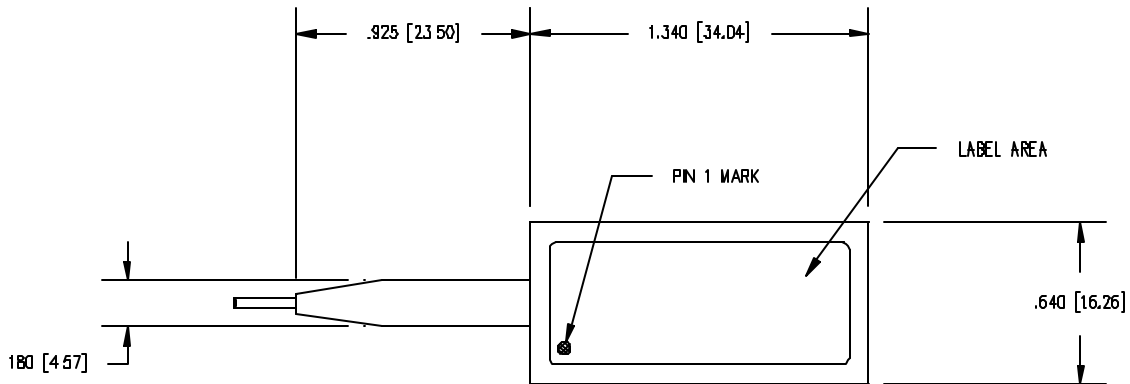
Maximum Ratings - Operation above the maximum ratings shall cause permanent damage to the device. Device characteristics shall not be implied if any of these conditions are exceeded. Operating or expose the device to the maximum ratings for any length of time shall have an effect on device reliability.

PARAMETER	UNITS	MIN	MAX
OPERATING CASE TEMPERATURE RANGE (T _c)	°C	-40	+85
STORAGE TEMPERATURE RANGE (T _{STG})	°C	-40	+85
SUPPLY VOLTAGE V _{EE} = -5V, V _{CC} = 0V, V _{EE} = 0V, V _{CC} = +5V	V	--	5.5
HUMIDITY (NON-CONDENSING) RH	%	--	85
LEAD SOLDERING TEMP MAX 10 SECONDS MAX.	°C	--	250

NOTE: DO NOT BEND FIBER TIGHTER THEN 1.0" RADIUS

Outline Diagram (Laser Transmitter)

Mechanical Dimension: in inches [mm]



Preliminary

Pin Assignments

PIN NUMBER	DESCRIPTION
1	N/C
2	LASER BIAS MONITORING (+) OPTIONAL USE
3	N/C
4	LASER BIAS MONITORING (-) OPTIONAL USE
5	V _{EE}
6	V _{CC}
7	TRANSMITTER DISABLE
8	V _{CC}
9	V _{CC}
10	N/C
11	CASE GROUND (RF GROUND)
12	V _{CC}
13	CASE GROUND (RF GROUND)
14	V _{EE}
15	DATA
16	DATA
17	BACK FACET LASER MONITORING (-) OPTIONAL USE
18	V _{CC}
19	BACK FACET LASER MONITORING (+) OPTIONAL USE
20	N/C

Ordering Information

*Other options available.

DEVICE TYPE	DESCRIPTION	SPECIAL *
SPLM -1/2C -XX	LASER TRANSMITTER	