LST062x-SC-A

Single Mode SC Connectorized Laser Transmitter Module

Data Sheet

Description

The LST062x-SC-A series is a laser transmitter, operating in the 1300 nm wavelength region. It is designed for use in short and medium distance networks with bit rates up to 622 Mb/s.

The device features a high reliability laser diode and a monitor photodiode in a hermetic package. These are electrically connected to four pins in an industry-standard configuration.

Environmental performance is designed to be compatible with the requirements of Bellcore's TA-NWT-000983 document.

Options within the LST062x-SC-A family offer several 4 PIN configurations with pin rotational orientations designed to match existing products available on the market.

If the specific arrangement or performance you require is not listed, please contact your local representative as our highly flexible design and manufacturing processes allow both physical and electro-optical customization to meet your needs.

Features

- 1300 nm Single Mode
- Industry Standard SC Connector
- High Reliability
- Connectorized for Ease of Use
- Convenient Variety of 4 Pin Configurations
- Hermetic Construction
- Wide Operating Temperature, -40°C to +85°C
- Modulation Capability up to 622 Mb/s
- SONET SR/IR up to OC12, SDH STMl and 4 Compliant
- Laser Eye Safety Classifications:
  CDRH Class 1 Compliant
  IEC825-1 Class 3A
- 200 µW Fiber Coupled Power

Applications

- Telecommunications
- Fiber in the Loop
- Inter/Intra Office
- SONET/SDH
- Datacommunications
- Switches

Laser Safety Warning

This device is a Class IIIa (3a) Laser Product. It may emit invisible laser radiation from an open optical port.
To avoid possible eye damage do not look into an open optical port during laser operation. Do not exceed specified operating limits.

Absolute Maximum Ratings

Absolute maximum limits mean that no catastrophic damage will occur if the product is subjected to these ratings for short periods, provided each limiting parameter is in isolation and all other parameters have values within the performance specification. It should not be assumed that limiting values of more than one parameter can be applied to the product at the same time.

Parameter	Symbol	Conditions	Limits		Units
			Minimum	Maximum	
Laser Forward Current	If	DC	-	150	mA
Laser Reverse Current	Ir	DC	-	100	µA
Laser Reverse Voltage	Vlr	DC	-	2	V
Photodiode Reverse Voltage	Vr	DC	-	10	V
Photodiode Forward Current	Ipf	DC	-	1	mA
Operating Temperature	Tc	Pf = 200 µW	-40	+85	°C
Storage Temperature	Ts		-40	+85	°C
Relative Humidity	RH		0.0	non-condensing	%/RH
Mechanical Shock		MIL-STD-883D, Method 2002, Condition B			
Vibration		MIL-STD-883D, Method 2007, Condition A			

Performance Specifications

Parameter	Symbol	Conditions	Limits		Units
			Minimum	Maximum	
LASER		CW, Tc = +25°C, Pf = 200 µW unless otherwise stated			
Threshold Current	Ith		3.5	10	mA
Peak Optical Output Power	Pf	Tc = -40°C to +85°C CW	200	-	µW
Optical Output Power	Pth	Pth = Pf @ Ith - 2 mA	-	8	µW
Slope Efficiency		Tc = +25°C	10	25	µW/mA
		Tc = -40°C to +85°C	5	40	µW/mA
Drive Current above Ith	Id	Pf = 200 µW	8	20	mA
Forward Voltage	Vf		-	1.6	V
Center Wavelength	λc	Note 1	1260	1360	nm
Temp. Dependence of λc	$\Delta\lambda c/\Delta T$	Tc = -40°C to +85°C	-	0.4	nm/°C
Linewidth	$\Delta\lambda$	1 x σ, RMS, Note 1	-	2.5	nm
Rise Time	τr	10% to 90%: Ith to Pf = 200 µW	-	0.5	ns
Fall Time	τf	90% to 10%: Pf = 200 µW to Ith	-	0.5	ns

Note:

1. Modulated measurements also available.

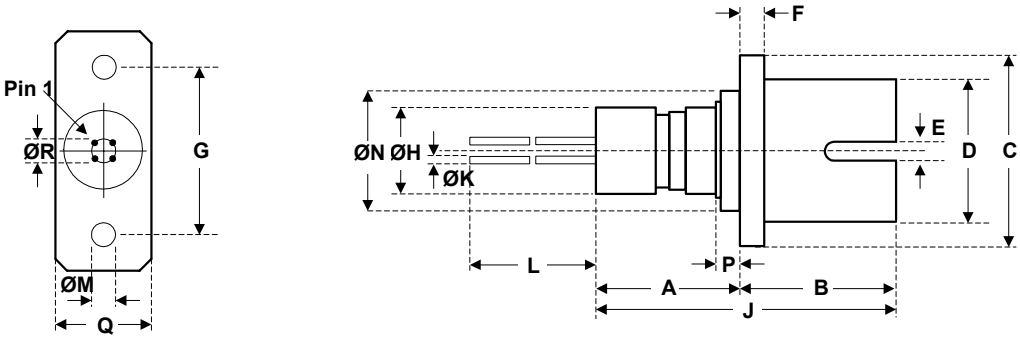
Performance Specifications (continued)

Parameter	Symbol	Conditions	Limits		Units
			Minimum	Maximum	
MONITOR PHOTODIODE		Tc = +25°C, Vr = -5 V (Note 2) Pf = 200 µw unless otherwise stated			
Photocurrent	Im		100	1500	µA
Dark Current	Id	Pf = 0 µW	-	20	nA
Capacitance	C	1 MHz	-	10	Pf
Tracking Error	ΔR	Im = Im @ (Pf = 200 µW, Tc = +25°C) Tc = -40°C to +85°C	-	±1.5	dB
Rise Time	τr	10% to 90%: Ith to Pf = 200 µW	-	2.0	ns
Fall Time	τf	90% to 10%: Pf = 200 µW to Ith	-	2.0	ns

Note:

2. Photodiode will also operate under zero bias conditions.

LST062x-SC-A Package Drawing

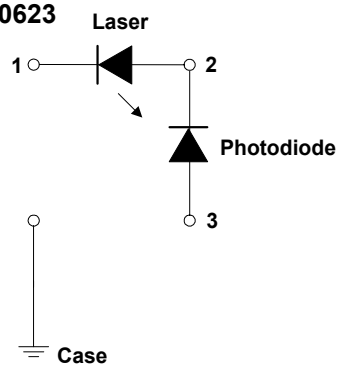


Dim.	Min.	Max.	Dim.	Min.	Max.
A	-	13.50	J	-	29.00
B	15.10	15.50	ØK	0.41	0.49
C	21.50	22.50	L	12.00	-
D	12.60	13.00	ØM	2.20	2.40
E	2.00	2.20	ØN	-	8.60
F	2.90	3.10	P	-	2.60
G	17.50	18.50	Q	9.20	9.40
ØH	-	7.00	ØR	1.90	2.10

All dimensions in mm

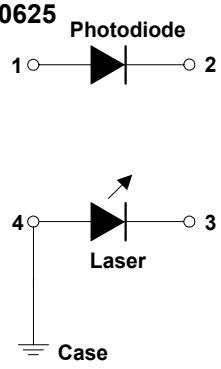
Pin Outs

LST0623



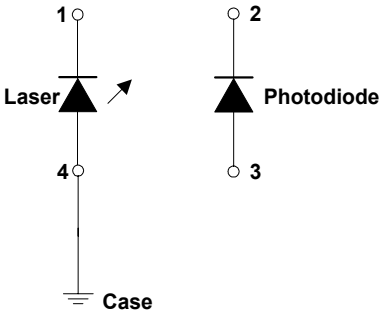
1 - Laser Cathode
2 - Laser Anode/Monitor Photodiode
3 - Monitor Anode (-ve)
4 - No Connection

LST0625



1 - Monitor Anode (-ve)
2 - Monitor Cathode (+ve)
3 - Laser Cathode
4 - Laser Anode

LST0627



1 - Laser Cathode
2 - Monitor Cathode (+ve)
3 - Monitor Anode (-ve)
4 - Laser Anode

Ordering Information

LST062x - SC - A

Pin Outs - See Drawings:
3
5
7

Allowed Model Names:
LST0623-SC-A
LST0625-SC-A
LST0627-SC-A

Handling Precautions

1. The LST062x can be damaged by current surges or overvoltage.
2. Power supply transient precautions should be taken.
3. Normal handling precautions for electrostatic sensitive devices should be taken.

CDRH Certification

Agilent Technologies Ltd.
Whitehouse Road
Ipswich, Suffolk IP1 5PB
England

Manufactured: _____ Serial No: _____

Model No: _____

This product conforms to the applicable requirements of 21 CFR 1040 at the date of manufacture

Laser Warning

INVISIBLE LASER RADIATION
DO NOT STARE INTO BEAM OR VIEW
DIRECTLY WITH OPTICAL INSTRUMENTS
CLASS 3A LASER PRODUCT
Peak Power 12 mW
Wavelength 1300 nm

IEC825-1 1993

For product information and a complete list of distributors, please go to our web site: **www.avagotech.com**

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