Coaxial Pigtailed Laser Module

Technical Data

LST262X

Features

- **Compact Coaxial Package**
- **Wide Operating Temperature -40°C to +85°C**
- **Modulation Capability Up to 622 Mbit/s**
- **200 µW Fiber Coupled Power**
- **Convenient Variety of Pin Out and Mounting Flange Options**

Applications

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

Description

The LST262X is a compact coaxial pigtailed laser transmitter, operating in the 1300 nm wavelength region and coupling light to single mode fiber. It is designed for use in short and medium distance networks with bit rates up to 622 Mbit/s.

The device features a high reliability laser diode and rear facet monitor photodiode. 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-TSY-000983 document.

Options within the LST262X family offer pinouts and pin rotational orientations designed to match existing products available on the market. We also offer a comprehensive range of alternative mounting flanges.

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 customisation to meet your needs.

Laser Safety Warning
This device is a Class IIIb (3b) Laser Product. It may emit invisible laser radiation if operated with the fiber pigtail disconnected.
To avoid possible eye damage do not look into an unconnected fiber pigtail 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
			Min	Max	
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	℃
Storage Temperature	Ts		-40	+85	℃
Relative Humidity	RH		0.0	non-condensing	%RH
Fiber Pull Strength			–	10	N
Mechanical Shock		Mil Std 883D, Method 2002, Condition B			
Vibration		Mil Std 883D, Method 2007, Condition A			

Performance Specifications

Parameter	Symbol	Conditions	Limits		Units
			Min	Max	
LASER		CW, Tc = 25℃, Pf = 200 µW unless otherwise stated			
Threshold Current	Ith		5	25	mA
Peak Optical Output Power	Pf		200	–	µW
Optical Output Power	Pth	Pth = Pf @ Ith - 2 mA	–	10	µW
Drive Current above Ith	Id	Pf = 200 µW	10	25	mA
Slope Efficiency	η		8	20	µW/mA
Forward Voltage	Vf		–	1.8	V
Centre Wavelength	λc	Note 1	1280	1330	nm
Temp. Dependence of λc	Δλc/ΔT	Tc = -40℃ to +85℃	–	0.4	nm/℃
Linewidth	Δλ	1xσ, 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
Small Signal Freq. Response	Bw		1.0	–	GHz

Note:
1. Modulated measurements also available.

Performance Specifications (cont'd.)

Parameter	Symbol	Test Conditions	Limits		Units
			Min	Max	
MONITOR PHOTODIODE		Tc = 25°C, Vr = 5 V (Note 2), Pf = 200 µW unless otherwise stated			
Photocurrent	lm		200	1000	µA
Responsivity	R		1.0	5.0	A/W
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° to +85°C	–	± 1.0	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

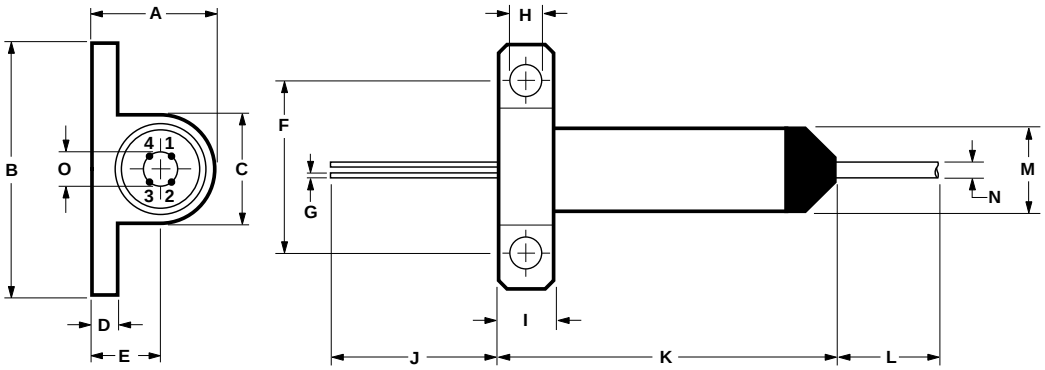
Note:
2. Photodiode will also operate under zero bias conditions.

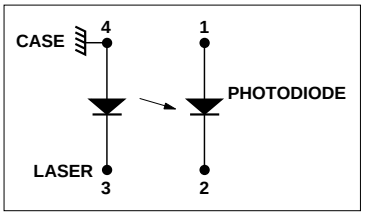
Fiber Pigtail: Tight jacketed, self-mode stripping, single mode fiber

Parameter	Min	Max	Unit
Length	1.0	–	m
Spot Size (Mode Radius)	4.5	5.5	µm
Cladding Diameter	122	128	µm
Core/Cladding Concentricity	–	1.0	µm
Secondary Jacket Diameter	0.8	1.0	mm
Effective Cutoff Wavelength	1150	1240	nm

Examples of LST262X-X Flange Options – All dimensions in mm.

LST262X-D

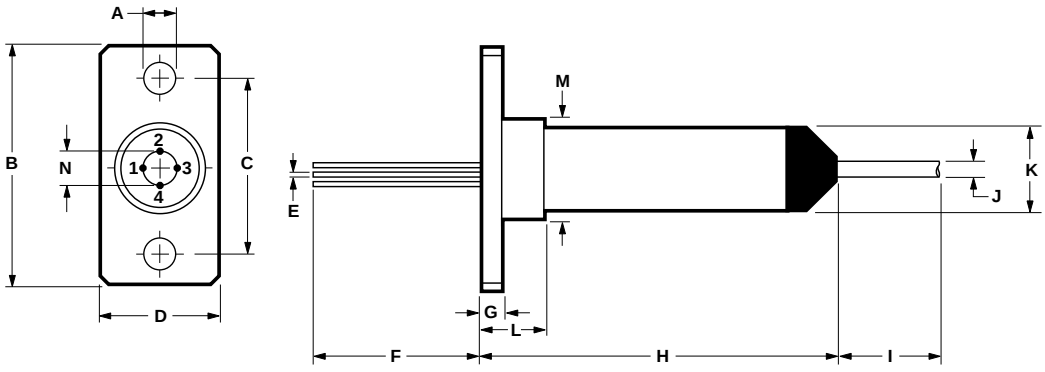


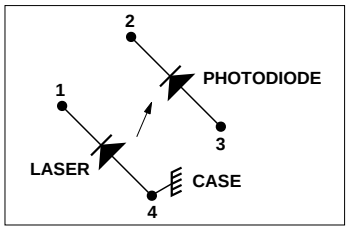


DIMENSION	MIN.	MAX.	DIMENSION	MIN.	MAX.
A	7.2	7.6	H	2.1	2.3
B	16.8	17.2	I	3.9	4.1
C	7.2	7.6	J	12.0	–
D	0.9	1.1	K	–	25.0
E	3.6	3.8	L	1000	–
F	12.5	12.9	M	–	6.0
G	0.41	0.49	N	0.8	1.0

O: PITCH CIRCLE DIAMETER OPTIONS:
LST2625-D = 2 mm
LST2626-D = 2.54 mm

LST262X-E





DIMENSION	MIN.	MAX.	DIMENSION	MIN.	MAX.
A	2.4	2.6	H	–	25.0
B	15.7	16.3	I	1000	–
C	11.8	12.2	J	0.8	1.0
D	7.8	8.2	K	–	6.0
E	0.41	0.49	L	–	4.2
F	12.0	–	M	–	6.3
G	1.3	1.7			

N: PITCH CIRCLE DIAMETER OPTIONS:
LST2627-E = 2 mm
LST2628-E = 2.54 mm

Ordering Information

The following details how to define the part number correctly for the LST262X family of coaxial pigtailed lasers. Electro-optic parameter limits are as defined on previous pages for all options.

LST262X-X-XX

Allowed Model Names:
LST2625-D
LST-2626-D
LST2627-E
LST2628-E
LST262*-B (No flange)

Connector Type:
FP = FC/PC
ST = ST®
SC = SC
DN = DIN
BI = Biconic
D4 = D4
SF = Superpolish FC/PC

Flange Type:
B - Without mounting flange
D - 2 hole PCB mount, 12.7 mm between centers
E - 2 hole panel mount, 12 mm between centers

Pin Outs – See Drawings:
5 = 2 mm PCD
6 = 2.54 mm PCD
7 = 2 mm PCD
8 = 2.54 mm PCD

CDRH Certification

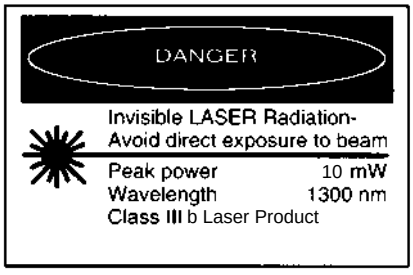
Hewlett-Packard Ltd.
Whitehouse Road
Ipswich, Suffolk IP1 5PB
England

Manufactured _____ Serial No._____

Model No. _____

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

Laser Warning



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Or contact your local HP sales office
listed in your telephone directory and
ask for a Components representative.

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