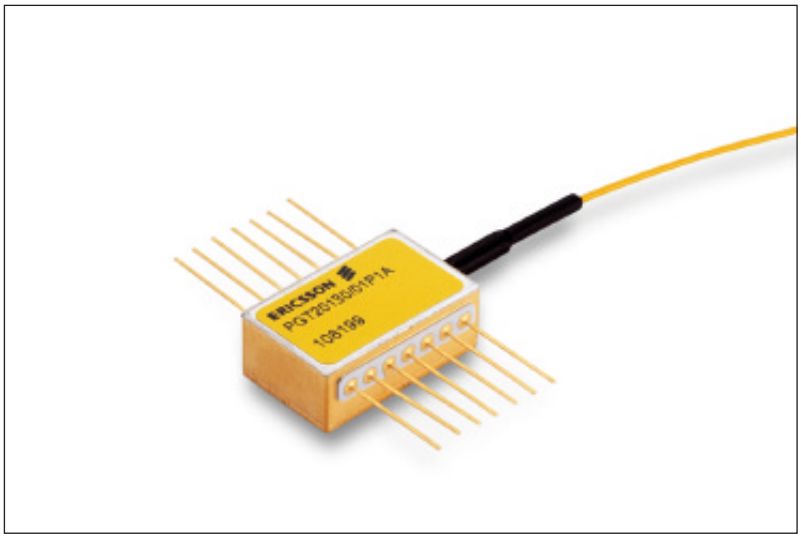
1510 nm DFB Laser
Supervisory Channel Applications

Key Features

- 1510 nm DFB laser source
- Operating temperature 0 °C to +70 °C
- Low threshold current
- Cooled – TEC
- Bitrates 1 – 622 Mb/s

Applications

- Intended as a laser source for an optical supervisory channel in D-WDM systems



Description

The laser module is intended as a source for an optical supervisory channel for systems with in-line amplifiers as proposed by ITU-T in G.691 and G692. The module includes an InGaAs/InP DFB laser diode, an InGaAs PIN back facet monitor diode and a TEC.

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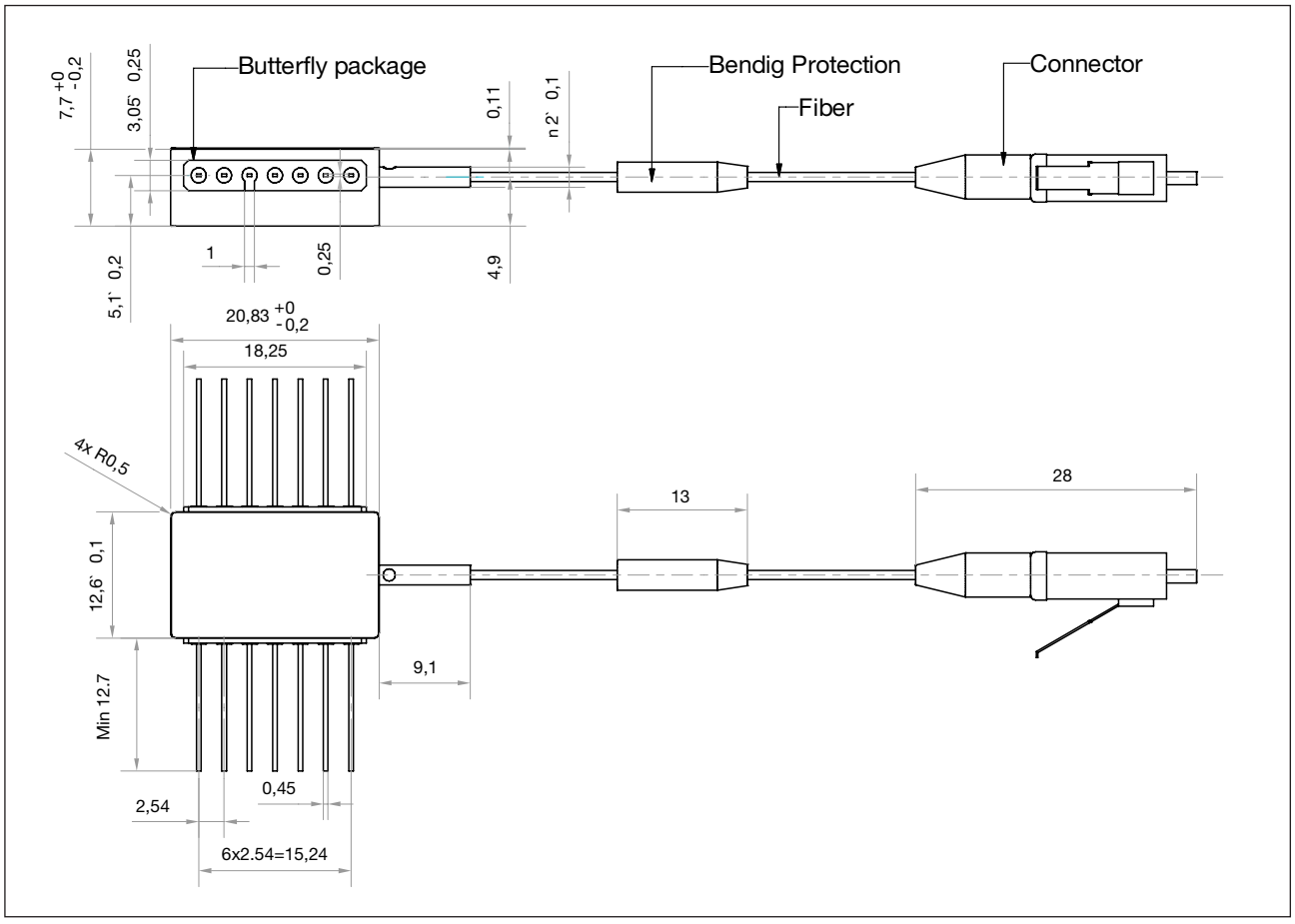


Figure 1. Mechanical outline

Pin	Description
1.	Cooler anode
2.	N.C.
3.	Thermistor
4.	Thermistor
5.	Case ground
6.	Photodiode cathode
7.	Photodiode anode
8.	LD cathode
9.	LD anode
10.	Case ground
11-13.	N.C.
14.	Cooler cathode

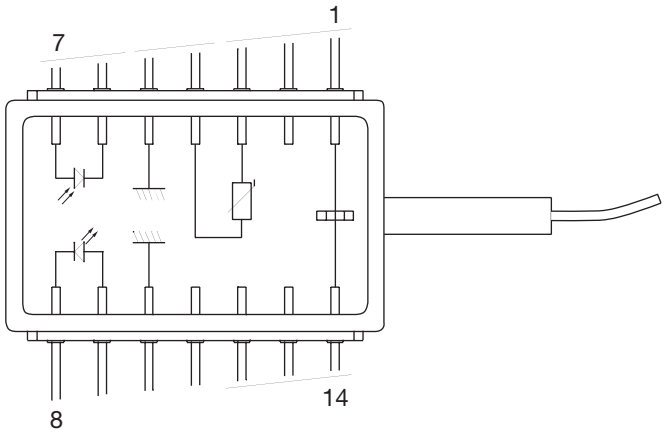


Figure 2. Pin description

Optical Characteristics

Electrical and optical characteristics at recommended operating conditions, unless otherwise noted.

Parameter	Conditions	Symbol	Min	Typ	Max	Unit
Peak wavelength		λ_{Peak}	1503	1510	1517	nm
Differential quantum efficiency	@ P_f = 1 mW	Q_{eff}	0.035			W/A
Side mode supression ratio		SMSR	30	35		dB

Electrical Characteristics

Parameter	Conditions	Symbol	Min	Typ	Max	Unit
Forward voltage		V_f			2	V
Threshold current		I_{Th}			30	mA
Monitor current	@ P_{fiber} = 1 mW	I_{Mon}	75		470	µA
Rise and fall time		t_r/t_f			1.0	ns
Bandwidth		f_c	400			MHz

Operating Conditions

Parameter	Symbol	Min	Typ	Max	Unit
Operating case temperature	T_C	0		70	°C

Absolute Maximum Ratings

Parameter	Symbol	Min	Max	Unit
Laser reverse voltage	V_{REV_LD}		1.0	V
Laser diode forward current	I_F		150	mA
Photodiode reverse voltage	V_{REV_MON}		15	V

CAUTION: *Stresses outside those listed in "Absolute Maximum Ratings" may cause permanent damage to the device.*

Handling Precautions

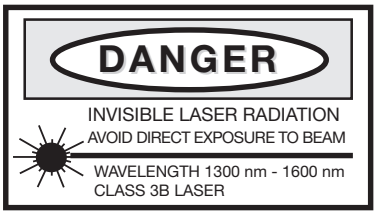
This device may be damaged as a result of electrostatic discharge (ESD). Take proper precautions during both handling and testing. This typically includes grounded wrist wraps, workbenches and floor mats in ESD controlled areas. Semiconductor devices may be damaged by current surges, use appropriate transient protection.

Quality Assurance

Ericsson Microelectronics commitment to quality has been proven through a decade of semiconductor device production and has been confirmed to ISO 9001. Opto product qualification is made according to the intention of applicable Telcordia standards.

Connector Options

FC/PC
SC
(Other connectors available on request)



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Preliminary Data Sheet
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