HL1337DSP

1.3 μm Laser Diode

HITACHI

ADE-208-1489 (Z)

Rev.0
Dec. 2001

Description

The HL1337DSP is a 1.3 μm Fabry-Perot laser diode with a multi-quantum well (MQW) structure. It is suitable as a light source in 2.5 Gb/s short haul fiberoptic communication systems and other types of optical equipment. Laser output is delivered from the non-hermetic Mini DIL package through a primary coated fiber pigtail. A built-in photodiode provides monitor current output.

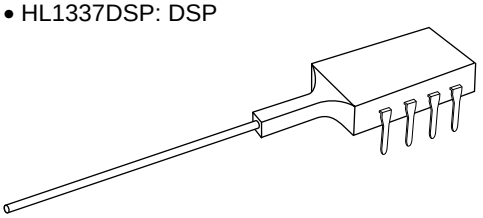
Features

- Operating temperature range: Topr = 0 to +85°C
- Optical output power: 0.7 mW
- 25 Ω input impedance
- Plastic Mini-DIL package

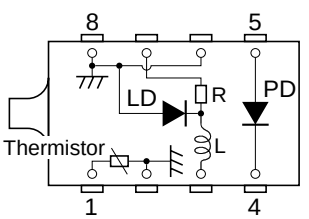
Fiber Specifications

- Mode field diameter: 9.5 ± 1.0 μm
- Cutoff wavelength: 1.10 to 1.27 μm
- Outer diameter: 125 μm nominal
- Jacket diameter: 250 μm nominal
- Fiber minimum bend radius: 25 mm

Package Type
• HL1337DSP: DSP



Internal Circuit



L: 140 nH

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Absolute Maximum Ratings

(Ta = 25°C)

Item	Symbol	Value	Unit	Condition
LD forward current	$I_{F(LD)}$	Ith + 60	mA	at Ta = 0°C, 25°C
		Ith + 100		at Ta = 85°C
LD reverse voltage	$V_{R(LD)}$	2	V	
PD forward current	$I_{F(PD)}$	5	mA	
PD reverse voltage	$V_{R(PD)}$	20	V	
Operating temperature	Topr	0 to +85	°C	
Storage temperature	Tstg	–40 to +85	°C	

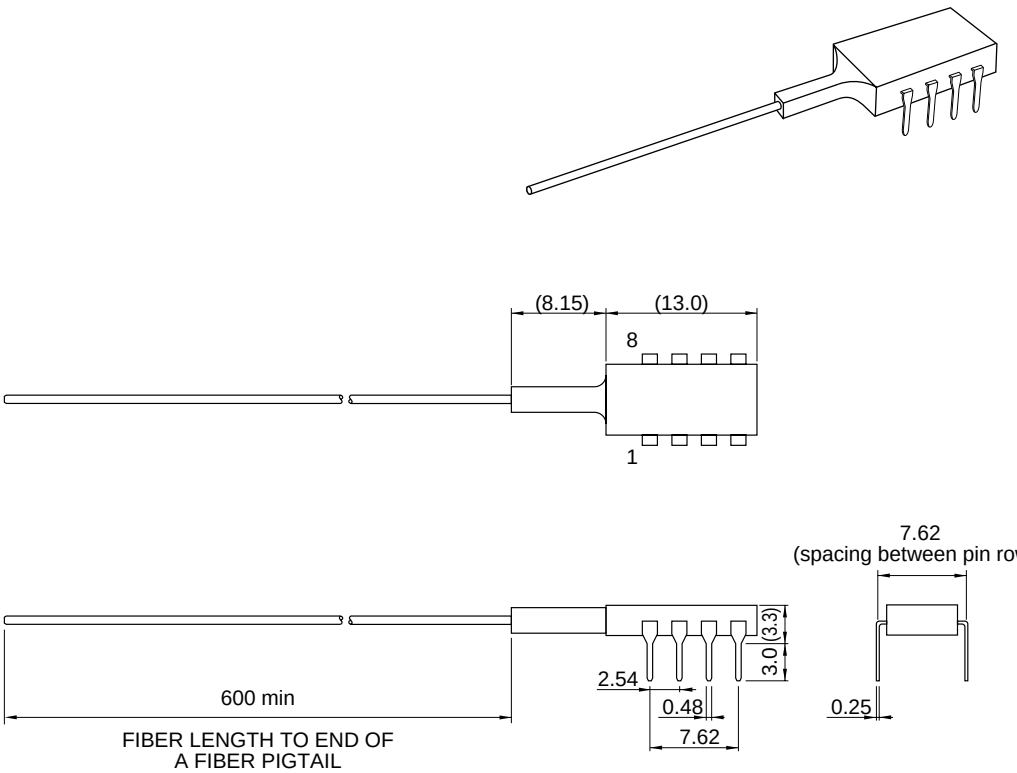
Optical and Electrical Characteristics

(Ta = 0°C to 85°C)

Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Optical output power	Pf	0.7	—	—	mW	Kink free
Threshold current	Ith	—	—	55	mA	Ta = 0 to 85°C
Operating voltage	V_{OP}	—	—	2.0	V	Pf = 0.7 mW (including inductor)
Slope efficiency	ηs	0.014	—	0.07	mW/mA	Ta = 25°C
		0.014	—	—		Ta = 85°C
Lasing wavelength	λc	1280	—	1357	nm	Pf = 0.7 mW, RMS
Spectral width	σ	—	—	2.5	nm	Pf = 0.7 mW, RMS
Rise time	t_r	—	—	100	ps	Pf = 0.7 mW, Ib = Ith, 10 to 90%
Fall time	t_f	—	—	200	ps	Pf = 0.7 mW, Ib = Ith, 90 to 10%
Monitor current	I_S	100	—	600	μA	Pf = 0.7 mW, $V_{R(PD)}$ = 5 V, Ta = 25°C
Temp dependency of tracking error relative to 25°C	ΔPf	–1	—	1	dB	I_S = const. (Pf = 0.7 mW, Ta = 25°C, $V_{R(PD)}$ = 5 V)
PD dark current	$I_{(DARK)}$	—	—	500	nA	$V_{R(PD)}$ = 5 V

Pacage Dimensions

Unit: mm



Hitachi Code	LD/DSP
JEDEC	—
JEITA	—
Mass (reference value)	—

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1. The laser light is harmful to human body especially to eye no matter what directly or indirectly. The laser beam shall be observed or adjusted through infrared camera or equivalent.

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