

# HL1337DNS

1.3  $\mu\text{m}$  Laser Diode

# HITACHI

ADE-208-992B (Z)  
Preliminary  
3rd Edition  
Jan. 2001

## Description

The HL1337DNS is a 1.3  $\mu\text{m}$  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 SC optical connector attached at the end of fiber pigtail. A built-in photodiode provides monitor current output.

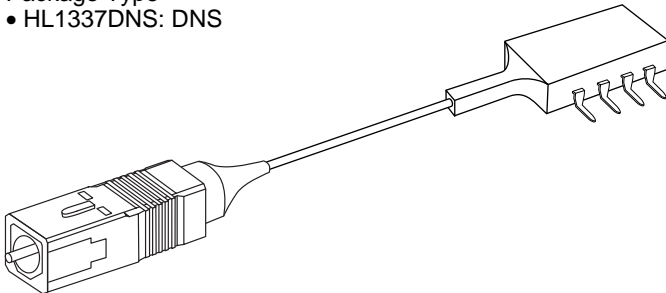
## Features

- Operating temperature range:  $T_{opr} = 0$  to  $+85^{\circ}\text{C}$
- Optical output power: 0.7 mW
- $25\ \Omega$  input impedance
- Plastic Mini-DIL package

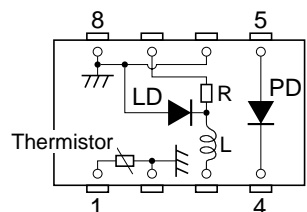
## Fiber Specifications

- Mode field diameter:  $9.5 \pm 1.0\ \mu\text{m}$
- Cutoff wavelength: 1.10 to  $1.27\ \mu\text{m}$
- Outer diameter:  $125\ \mu\text{m}$  nominal
- Jacket diameter:  $900\ \mu\text{m}$  nominal
- Fiber minimum bend radius: 30 mm

Package Type  
• HL1337DNS: DNS



Internal Circuit



L: 80 nH

Absolute Maximum Ratings (Ta = 25°C)

Item	Symbol	Value	Unit	Condition
LD forward current	$I_{F(LD)}$	$I_{th} + 60$	mA	at Ta = 0°C, 25°C
		$I_{th} + 100$		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	

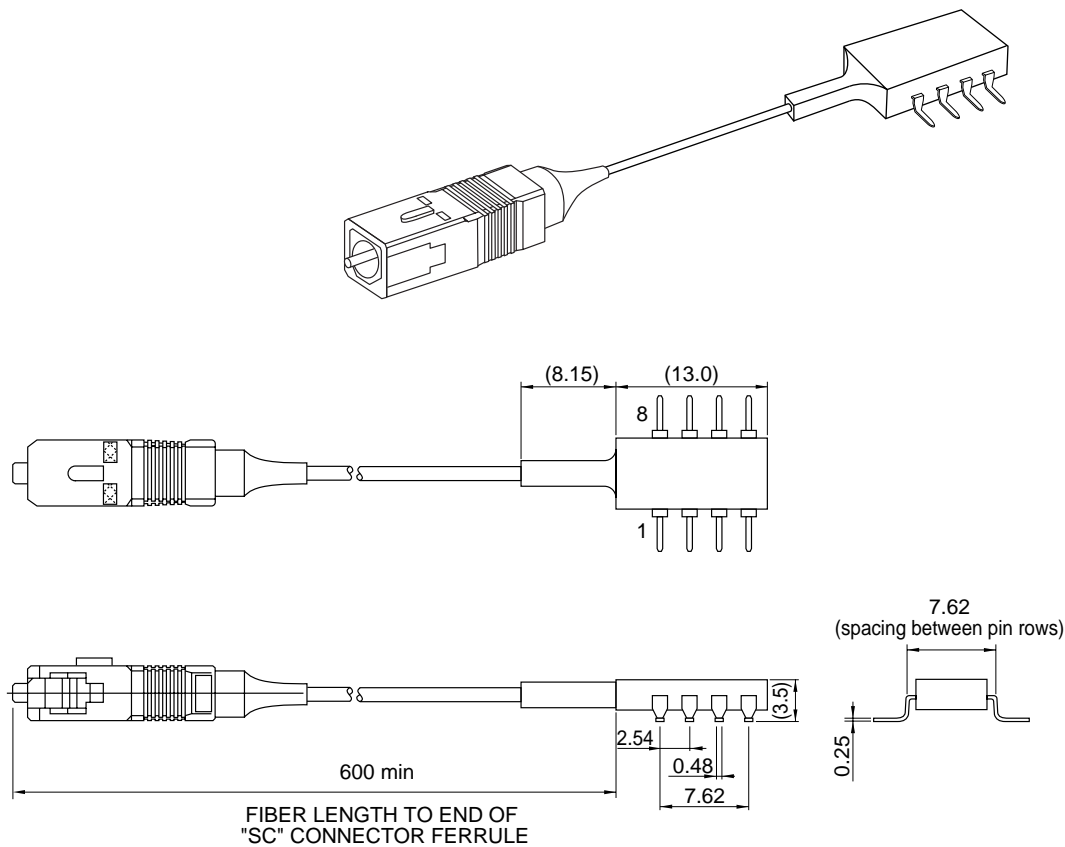
Optical and Electrical Characteristics (Ta = 0°C to 85°C)

Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Optical output power	Pf	0.7	—	—	mW	Kink free
Threshold current	$I_{th}$	—	—	55	mA	Ta = 0 to 85°C
Operating voltage	$V_{OP}$	—	—	3.2	V	Pf = 0.7 mW (including 20 Ω resistor)
Slope efficiency	$\eta_s$	0.014	—	0.07	mW/mA	Ta = 0 to 85°C
Lasing wavelength	$\lambda_c$	1292	—	1325	nm	Pf = 0.7 mW, RMS
Spectral width	$\delta$	—	—	2.5	nm	Pf = 0.7 mW, RMS
Rise time	$t_r$	—	—	100	ps	Pf = 0.7 mW, Ib = $I_{th}$ , 10 to 90 %
Fall time	$t_f$	—	—	230	ps	Pf = 0.7 mW, Ib = $I_{th}$ , 90 to 10 %
Monitor current	$I_s$	100	—	600	μA	Pf = 0.7 mW, $V_{R(PD)} = 5\text{ V}$ , Ta = 25°C
Temp dependency of tracking error relative to 25°C	$\Delta Pf$	−1	—	1	dB	$I_s = \text{const.}$ (Pf = 0.7 mW, Ta = 25°C, $V_{R(PD)} = 5\text{ V}$ )
PD dark current	$I_{(DARK)}$	—	—	200	nA	$V_{R(PD)} = 5\text{ V}$

Pacage Dimensions

Preliminary

Unit: mm



Hitachi Code	LD/DNS (TBD)
JEDEC	—
EIAJ	—
Mass (reference value)	—

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