
HL1356EN

1.3 μm InGaAsP Laser Diode

HITACHI

Description

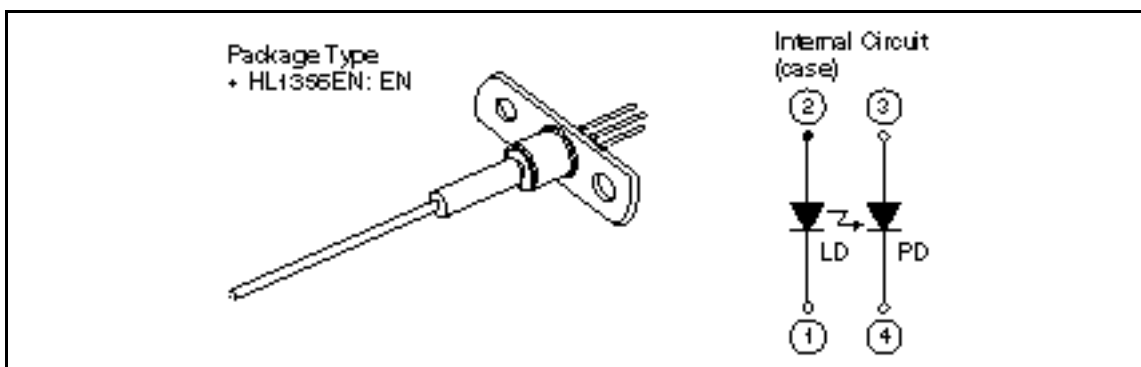
The HL1356EN is a 1.3 μm InGaAsP DFB laser diode with a multi-quantum well (MQW) structure. It is suitable as a light source in 2.5 Gb/s short haul fiberoptic communication systems and other types of optical equipment. Laser output is delivered from the coaxial package through optical fiber pigtail. A built-in photodiode provides monitor current output.

Features

- Operating temperature range: $T_{opr} = 0$ to $+85^{\circ}\text{C}$
- Optical output power: 3 mW
- Coaxial package with built-in optical isolator

Fiber Specifications

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



Absolute Maximum Ratings (Ta = 25°C)

Item	Symbol	Value	Unit	Condition
LD forward current	$I_{F(LD)}$	$I_{th} + 80$	mA	
LD reverse voltage	$V_{R(LD)}$	2	V	
PD reverse voltage	$V_{R(PD)}$	15	V	
Operating temperature	T_{opr}	0 to +85	°C	
Storage temperature	T_{stg}	-40 to +85	°C	

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

Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Threshold current	I_{th}	—	—	25	mA	Ta = 25°C
		—	—	45		Ta = 85°C
Optical output power	P_O	3	—	—	mW	Kink free
Slope efficiency	s	0.1	—	—	mW/mA	Ta = 25°C
		0.055	—	—		Ta = 85°C
Operating voltage	V_{OP}	—	—	1.6	V	Pf = 3.0 mW
Lasing wavelength	λ	1290	1310	1330	nm	$P_{peak} = 2.5$ mW, 2.5 Gb/s
Side-mode suppression ratio	Sr	30	40	—	nm	$P_{peak} = 2.5$ mW, 2.5 Gb/s
Rise time	t_r	—	—	200	ns	$P_{peak} = 2.5$ mW, 2.5 Gb/s 10 to 90%
Fall time	t_f	—	—	200	ns	$P_{peak} = 2.5$ mW, 2.5 Gb/s 10 to 90%
Monitor current	I_s	100	—	—	μA	Pf = 2.5 mW, $V_{R(PD)} = 5$ V
PD dark current	$I_{(DARK)}$	—	—	100	nA	$V_{R(PD)} = 5$ V