

# HL1328DJS

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

# HITACHI

ADE-208-673B (Z)

Rev.2  
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### Description

The HL1328DJS is a 1.3  $\mu\text{m}$  InGaAsP Fabry-Perot laser diode with a multi-quantum well (MQW) structure. It is suitable as a light source in 155 Mb/s or 622 Mb/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.

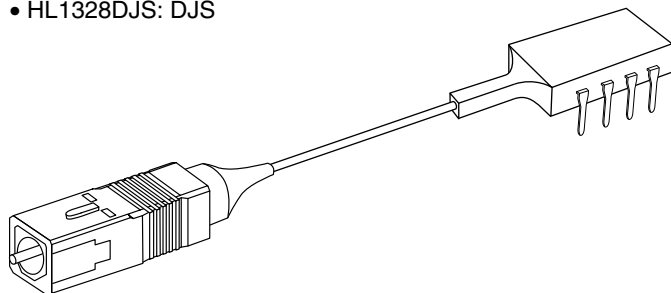
### Features

- Wide operating temperature range:  $T_{opr} = -40$  to  $+85^{\circ}\text{C}$
- Optical output power: 0.2 mW
- Plastic Mini DIL package

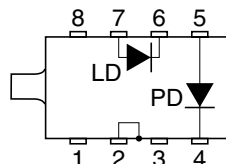
### Fiber Specifications

- 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  
• HL1328DJS: DJS



Internal Circuit



## Absolute Maximum Ratings

(Ta = 25°C)

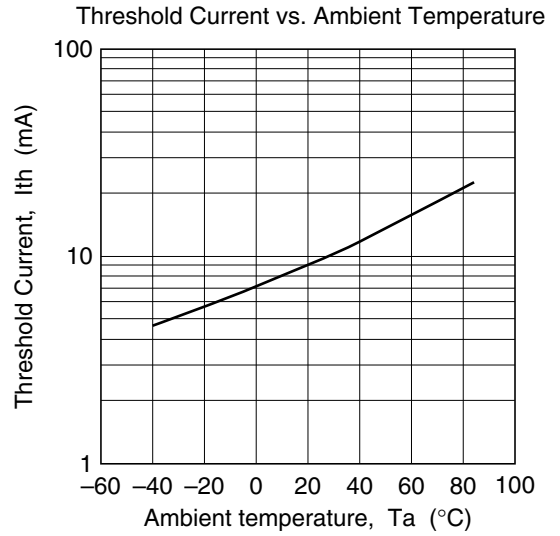
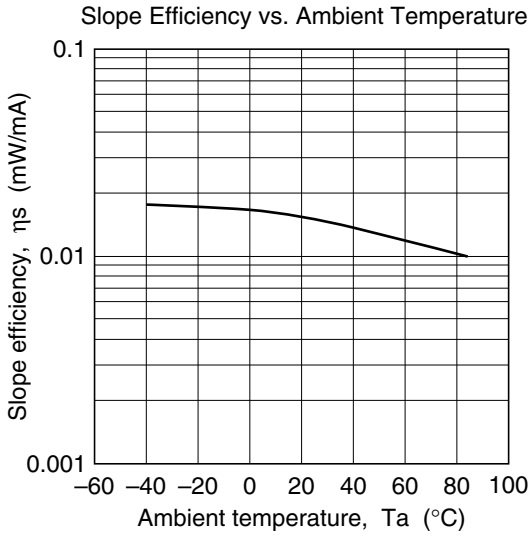
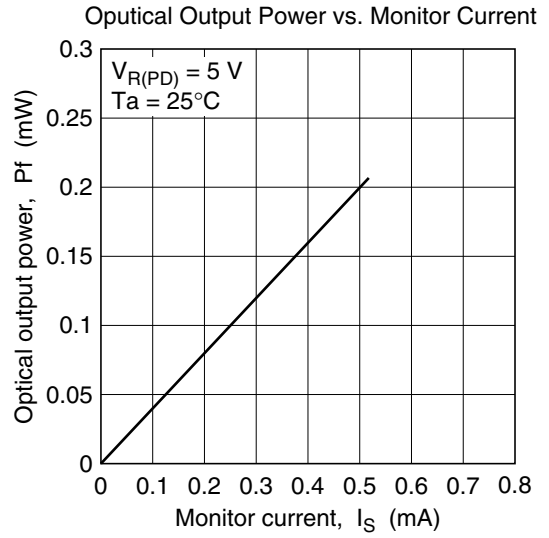
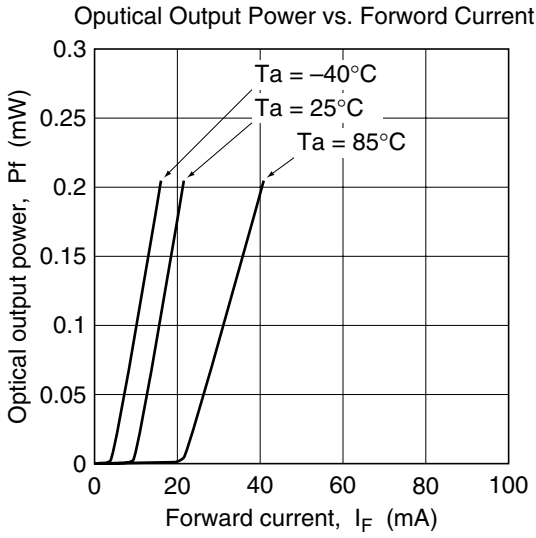
Item	Symbol	Value	Unit	Condition
LD forward current	$I_{F(LD)}$	$I_{th} + 60$ $I_{th} + 100$	mA	at Ta = -40°C, 25°C at Ta = 85°C
LD reverse voltage	$V_{R(LD)}$	2	V	
PD forward current	$I_{F(PD)}$	5	mA	
PD reverse voltage	$V_{R(PD)}$	20	V	
Operating temperature	Topr	-40 to +85	°C	
Storage temperature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

## Optical and Electrical Characteristics

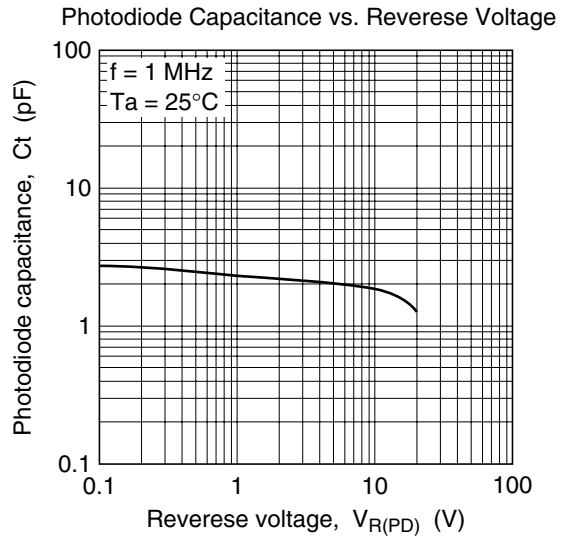
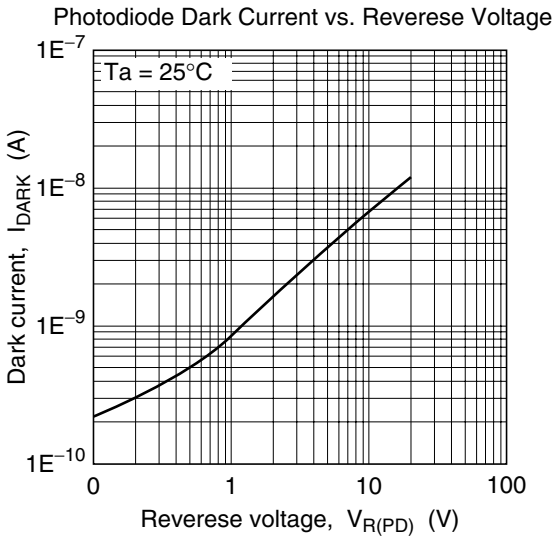
(Ta = -40°C to 85°C)

Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Optical output power	Pf	0.2	—	—	mW	Kink free
Threshold current	Ith	—	—	20	mA	Ta = 25°C
		—	—	40		Ta = 85°C
Operating voltage	$V_{OP}$	—	—	1.6	V	Pf = 0.2 mW
Slope efficiency	$\eta_s$	0.004	—	0.025	mW/mA	Ta = 25°C
		0.004	—	—		Ta = 85°C
Lasing wavelength	$\lambda_c$	1260	1310	1360	nm	Pf = 0.2 mW, RMS
Spectral width	$\sigma$	—	—	2.5	nm	Pf = 0.2 mW, RMS
Rise time	$t_r$	—	—	0.5	ns	Pf = 0.2 mW, Ib = Ith, 10 to 90 %
Fall time	$t_f$	—	—	0.5	ns	Pf = 0.2 mW, Ib = Ith, 90 to 10 %
Monitor current	$I_s$	200	—	—	μA	Pf = 0.2 mW, $V_{R(PD)} = 5$ V Ta = 25°C
Temp dependency of tracking error relative to 25°C	$\Delta Pf$	-1	—	1	dB	$I_s = \text{const.}$ (Pf = 0.2 mW, Ta = 25°C, $V_{R(PD)} = 5$ V)
PD dark current	$I_{(DARK)}$	—	—	500	nA	$V_{R(PD)} = 5$ V

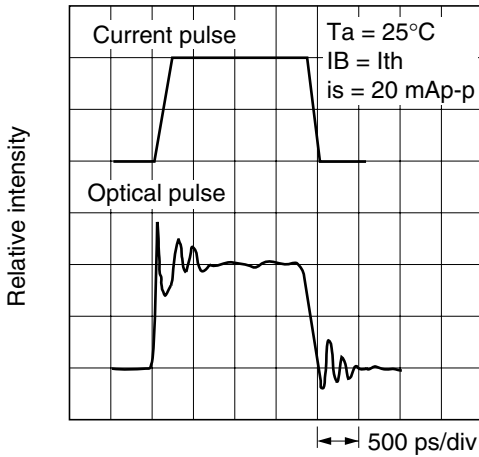
Typical Characteristic Curves



## Typical Characteristic Curves (cont)



Pulse Response of Laser Diode





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