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# HL8325G

GaAlAs Laser Diode

# HITACHI

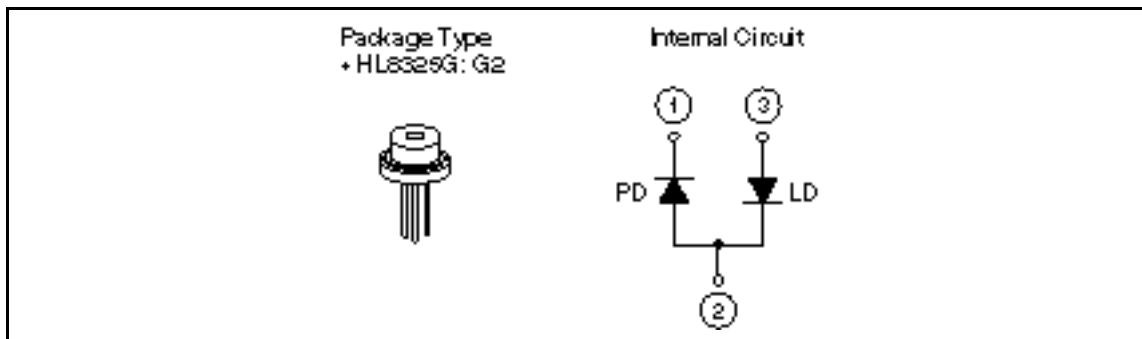
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## Description

The HL8325G is a high-power 0.8  $\mu\text{m}$  band GaAlAs laser diode with a TQW (triple quantum well) structure. Its internal circuit configuration is suited for operation on a single positive supply voltage. It is suitable as a light source for optical disk memories, card readers and various other types of optical equipment.

## Features

- Infrared light output:  $\lambda = 820$  to  $840$  nm
- High power: standard continuous operation at 40 mW (CW), pulsed operation at 50 mW
- Built-in monitor photodiode
- Single longitudinal mode



**Absolute Maximum Ratings ( $T_C = 25^\circ\text{C}$ )**

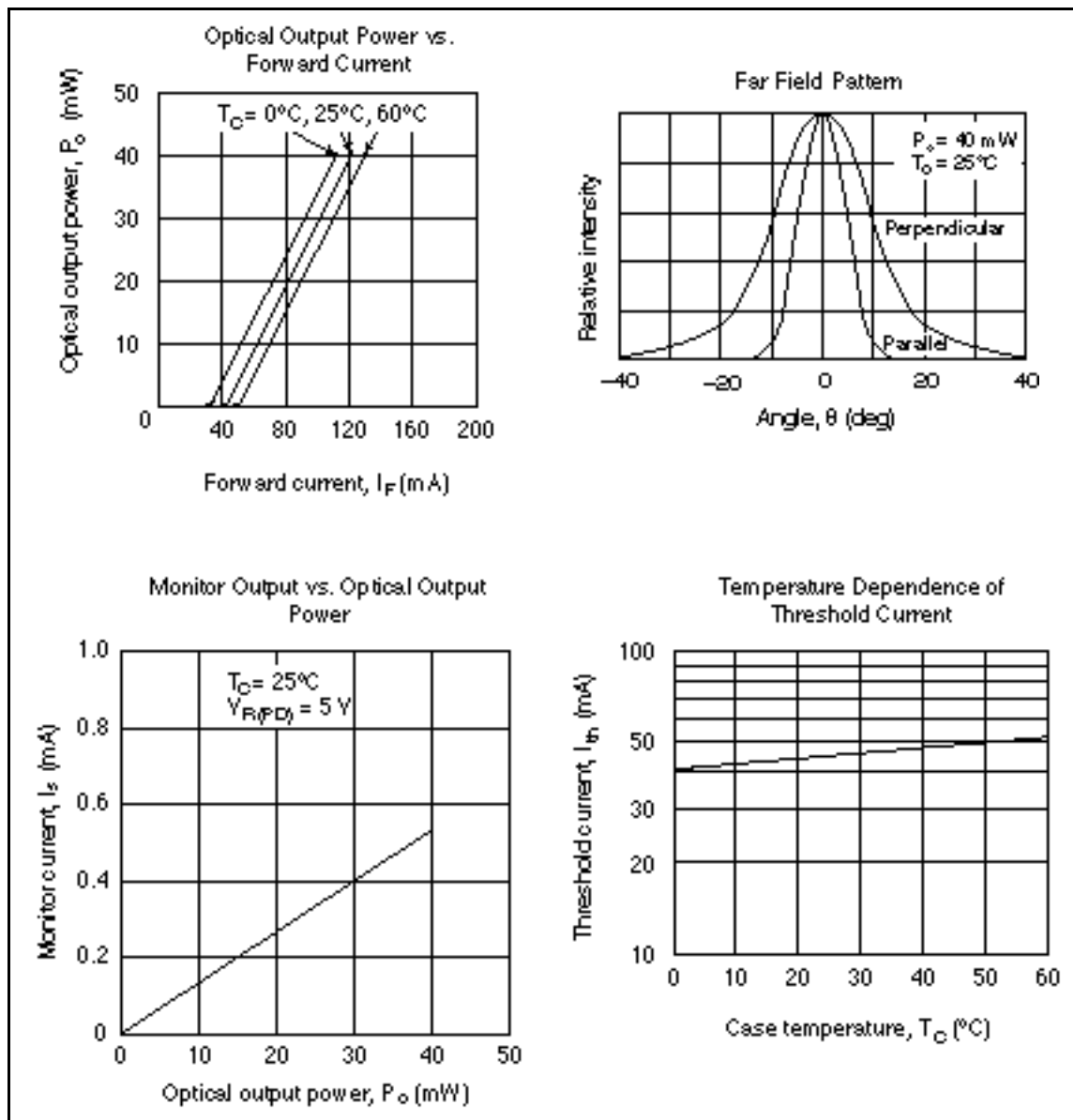
Item	Symbol	Rated Value	Units
Optical output power	$P_O$	40	mW
Pulse optical output power	$P_{O(\text{pulse})}$	50* <sup>1</sup>	mW
LD reverse voltage	$V_{R(\text{LD})}$	2	V
PD reverse voltage	$V_{R(\text{PD})}$	30	V
Operating temperature	$T_{\text{opr}}$	-10 to +60	$^\circ\text{C}$
Storage temperature	$T_{\text{stg}}$	-40 to +85	$^\circ\text{C}$

Note: 1. Maximum 50% duty cycle, maximum 1  $\mu\text{s}$  pulse width

**Optical and Electrical Characteristics ( $T_C = 25 \pm 3^\circ\text{C}$ )**

Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Optical output power	$P_O$	40	—	—	mW	Kink free
Threshold current	$I_{\text{th}}$	—	40	70	mA	
Slope efficiency		0.4	0.5	0.9	mW/mA	$24 \text{ mW} / I_{(32 \text{ mW})} - I_{(8 \text{ mW})}$
Lasing wavelength	$\lambda$	820	830	840	nm	$P_O = 40 \text{ mW}$
Beam divergence (parallel)	//	7	10	14	deg.	$P_O = 40 \text{ mW}$ , FWHM
Beam divergence (perpendicular)		18	22	32	deg.	$P_O = 40 \text{ mW}$ , FWHM
Monitor current	$I_s$	20	40	130	$\mu\text{A}$	$V_{R(\text{PD})} = 5 \text{ V}$ , $P_O = 4 \text{ mW}$
Astigmatism	$A_s$	—	5	—	$\mu\text{m}$	$P_O = 4 \text{ mW}$ , $\text{NA} = 0.4$

Typical Characteristic Curves



Typical Characteristic Curves (cont)

