

HL6503MG

Visible High Power Laser Diode for DVD-RAM

HITACHI

ADE-208-670B (Z)
Target Specification
3rd Edition
Sep. 1999

Description

The HL6503MG is a 0.66 μm band AlGaInP laser diode (LD) with a multi-quantum well (MQW) structure. It is suitable as a light source for large capacity optical disc memories, such as DVD-RAM, and various other types of optical equipment.

Hermetic sealing of the small package (ϕ 5.6 mm) assures high reliability.

Application

- Optical disc memories
- Optical equipment

Features

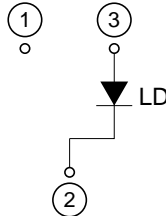
- High output power : 50 mW (CW)
- Visible light output : $\lambda_p = 664 \text{ nm Typ}$
- Small package : ϕ 5.6 mm
- Low astigmatism : 5 $\mu\text{m Typ}$ ($P_o = 5 \text{ mW}$)

Internal Circuit

Package Type
• HL6503MG: MG



Internal Circuit



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

Item	Symbol	Value	Unit
Optical output power	P_o	50	mW
Pulse optical output power	P_o (pulse)	70 *	mW
Laser diode reverse voltage	$V_{R(LD)}$	2	V
Operating temperature	Topr	-10 to +60	$^\circ\text{C}$
Storage temperature	Tstg	-40 to +85	$^\circ\text{C}$

Note: Pulse condition : Pulse width = 100 ns, duty = 50%

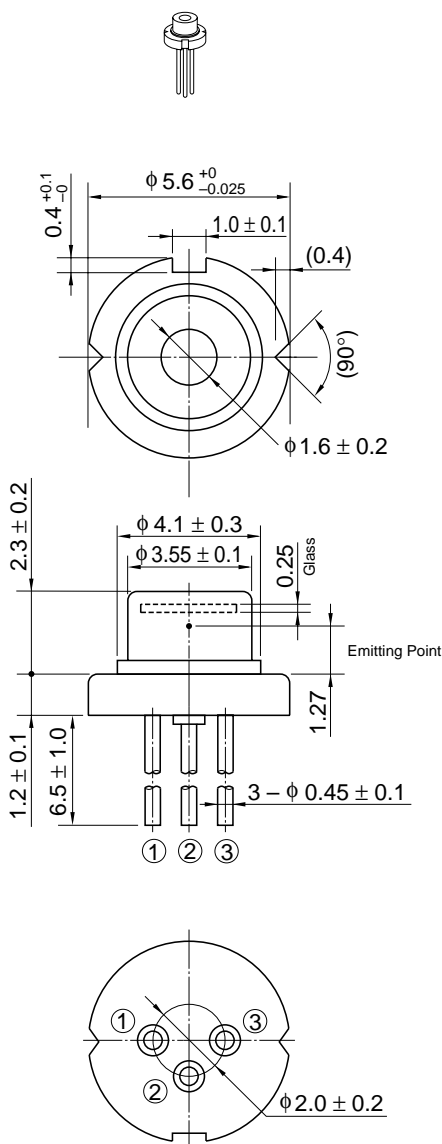
Optical and Electrical Characteristics ($T_C = 25^\circ\text{C}$)

Items	Symbol	Min	Typ	Max	Unit	Test Conditions
Optical output power	P_o	50	—	—	mW	Kink free *
Pulse optical output power	$P_{o(pulse)}$	70	—	—	mW	Kink free *
Threshold current	I _{th}	30	45	60	mA	—
Operating current	I _{op}	—	115	135	mA	$P_o = 50$ mW
Operating voltage	V_{OP}	2.1	2.6	3.0	V	$P_o = 50$ mW
Beam divergence parallel to the junction	$\theta_{//}$	7	9	11	deg.	$P_o = 50$ mW
Beam divergence perpendicular to the junction	θ_{\perp}	17	21	25	deg.	$P_o = 50$ mW
Asigmatism	A_s	—	5	—	μm	$P_o = 5$ mW, NA = 0.55
Lasing wavelength	λ_p	655	664	667	nm	$P_o = 50$ mW

Note: Kink free is confirmed at the temperature of 25 $^\circ\text{C}$.

Package Dimensions

Unit: mm



Hitachi Code	LD/MG
JEDEC	—
EIAJ	—
Weight (reference value)	0.3 g

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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.

HITACHI

Hitachi, Ltd.

Semiconductor & IC Div.
 Nippon Bldg., 2-6-2, Ohte-machi, Chiyoda-ku, Tokyo 100-0004, Japan
 Tel: Tokyo (03) 3270-2111 Fax: (03) 3270-5109

URL NorthAmerica : <http://semiconductor.hitachi.com/>
 Europe : <http://www.hitachi-eu.com/hel/ecg>
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For further information write to:

Hitachi Semiconductor
 (America) Inc.
 179 East Tasman Drive,
 San Jose, CA 95134
 Tel: <1> (408) 433-1990
 Fax: <1>(408) 433-0223

Hitachi Europe GmbH
 Electronic components Group
 Dornacher Straße 3
 D-85622 Feldkirchen, Munich
 Germany
 Tel: <49> (89) 9 9180-0
 Fax: <49> (89) 9 29 30 00

Hitachi Europe Ltd.
 Electronic Components Group.
 Whitebrook Park
 Lower Cookham Road
 Maidenhead
 Berkshire SL6 8YA, United Kingdom
 Tel: <44> (1628) 585000
 Fax: <44> (1628) 778322

Hitachi Asia Pte. Ltd.
 16 Collyer Quay #20-00
 Hitachi Tower
 Singapore 049318
 Tel: 535-2100
 Fax: 535-1533

Hitachi Asia Ltd.
 Taipei Branch Office
 3F, Hung Kuo Building, No.167,
 Tun-Hwa North Road, Taipei (105)
 Tel: <886> (2) 2718-3666
 Fax: <886> (2) 2718-8180

Hitachi Asia (Hong Kong) Ltd.
 Group III (Electronic Components)
 7/F., North Tower, World Finance Centre,
 Harbour City, Canton Road, Tsim Sha Tsui,
 Kowloon, Hong Kong
 Tel: <852> (2) 735 9218
 Fax: <852> (2) 730 0281
 Telex: 40815 HITEC HX

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