

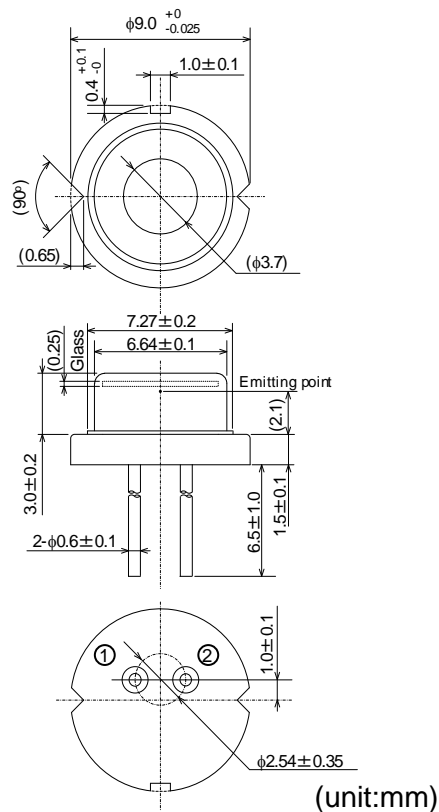
## Data Sheet

# HL63520HD

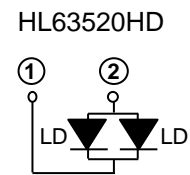
638nm / 2.4W (CW) / 3.5W (Pulse)  
AlGaInP Laser Diode

USHIO

### Outline



### Internal Circuit



### Features

- Dual emitters
- Optical output power: 2.4W (CW)  
3.5W (Pulse)
- Shorter wavelength: 638nm
- High wall plug efficiency: 43%
- High heat dissipation  $\phi$ 9mm CAN package
- Multi transverse mode
- TM mode oscillation

### Application

- Laser Projector
- Laser TV
- Light source of optical equipments

## Absolute Maximum Ratings (Tc=25°C)

Item	Symbol	Ratings	Unit
Operating current <sup>Note1)</sup>	I <sub>op</sub>	2.4	A
Pulse operating current <sup>Note1) Note2)</sup>	I <sub>op</sub> (Pulse)	3.3	A
LD reverse voltage	V <sub>R(LD)</sub>	2	V
Operating temperature <sup>Note1)Note3)</sup>	T <sub>opr</sub>	-10 ~ +55	°C
Storage temperature	T <sub>stg</sub>	-40 ~ +85	°C

Note1) The relation of operating temperature vs operating current and typical optical output power are based on Fig.1, 2.

Note2) Pulse condition: Pulse frequency ≥ 120Hz, duty ≤ 30%

Note3) Operating temperature is defined by Case temperature "Tc". High increase in temperature of LD chip itself is expected during operation due to high current density. Thus, without proper heat dissipation, it is observed that no specific output power is achieved or it results to LD degradation. It is advised that sufficient measure of heat dissipation should be taken so that LD's maximum operating temperature is not exceeded during actual operation.

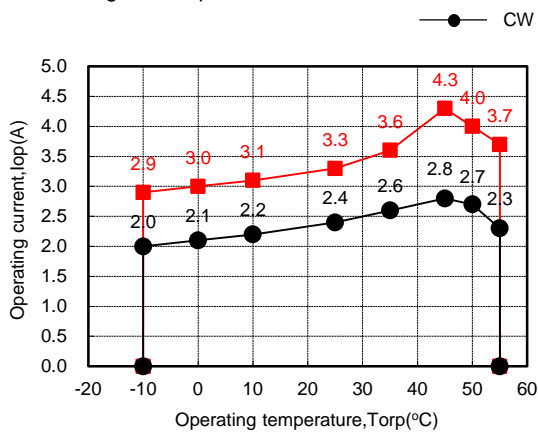


Fig.1 The relation of operating temperature vs maximum operating current

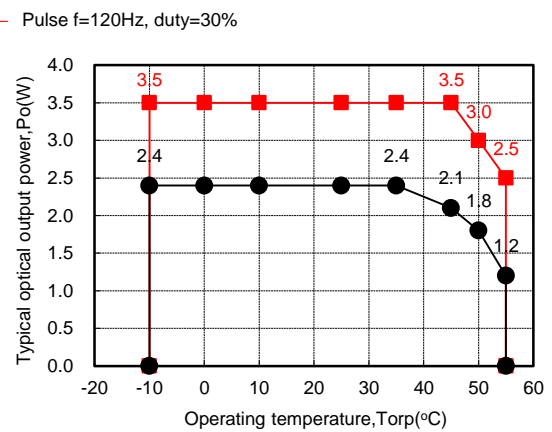


Fig.2 The relation of operating temperature vs optical output

## Optical and Electrical Characteristics (Tc=25°C, CW)

Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Optical output power	P <sub>o</sub>	-	2.4	-	W	I <sub>op</sub> =2.4A
Pulse optical output power	P <sub>o</sub> (Pulse)	-	3.5	-	W	I <sub>op</sub> (Pulse)=3.3A, f=120Hz, duty=30%
Threshold current	I <sub>th</sub>	-	570	750	mA	-
Operating voltage	V <sub>op</sub>	-	2.4	2.8	V	P <sub>o</sub> =2.2W
Beam divergence <sup>Note4)</sup> Parallel to the junction	θ <sub>//</sub>	3	10	20	°	P <sub>o</sub> =2.2W, FWHM
Beam divergence <sup>Note4)</sup> Perpendicular to the junction	θ <sub>⊥</sub>	23	33	43	°	P <sub>o</sub> =2.2W, FWHM
Lasing Wavelength	λ <sub>p</sub>	632	638	644	nm	P <sub>o</sub> =2.2W

Note4) Designed value

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