

High power Red LD for Laser Projection

HL63290HD 638nm, CW 2.2W/Pulse 2.5W

USHIO OPTO SEMICONDUCTORS, INC.

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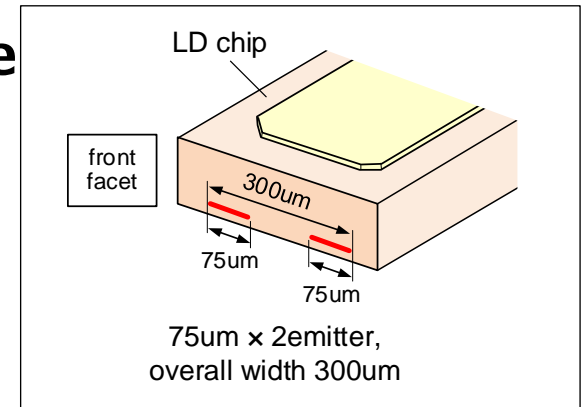
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HL63290HD : Features and Specifications

➤ Pulse 2.5W at double emitters structure

Features

- ❑ Output power : CW 2.2W / Pulse 2.5W
- ❑ Short wavelength : 638nm Typ.
- ❑ Double emitters



❑ Optical and Electrical characteristics (Tc = 25°C)

LD chip enlarged view around front facet

Item		Min	Typ	Max	Unit	Test condition
Optical output power	CW	-	2.2	-	W	lop = 2.4A
	Pulse	-	2.5	-	W	lop(Pulse) = 2.5A
Threshold current		-	0.60	0.75	A	-
Operating voltage		-	2.4	2.8	V	Po = 2.0W
Beam divergence	horizontal	3	10	20	°	Po = 2.0W, FWHM
	vertical	23	33	43	°	
Peak wavelength		632	638	642	nm	Po = 2.0W

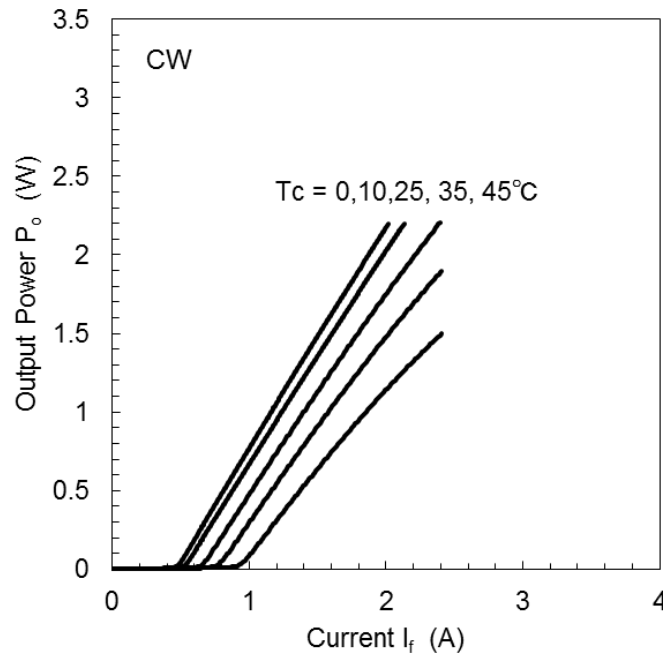
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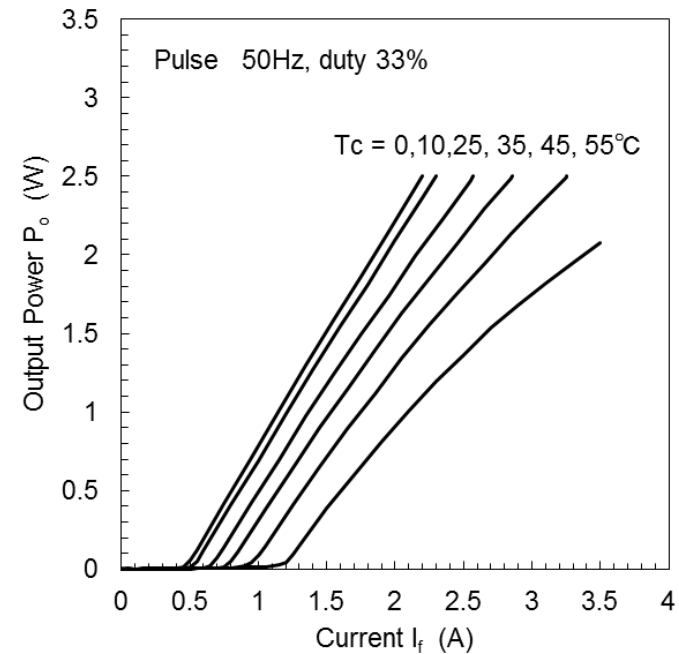
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Typical characteristics curves : I-L characteristics

- ✓ Low operating current : 2.2A Typ. at 25°C
- ✓ High wall plug efficiency : 40% Typ. at 25°C, Pulse
- ✓ High wall plug efficiency : 29% Typ. at 45°C, Pulse



CW operation



Pulsed operation

(Note 1) Pulse condition : $f = 120$ Hz, duty = 30%

(Note 2) Operating temperature is defined as case temperature T_c .

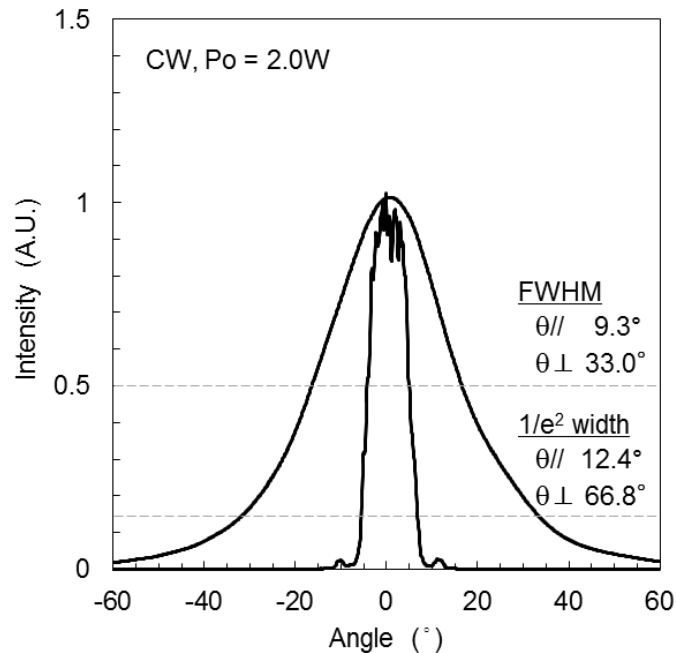
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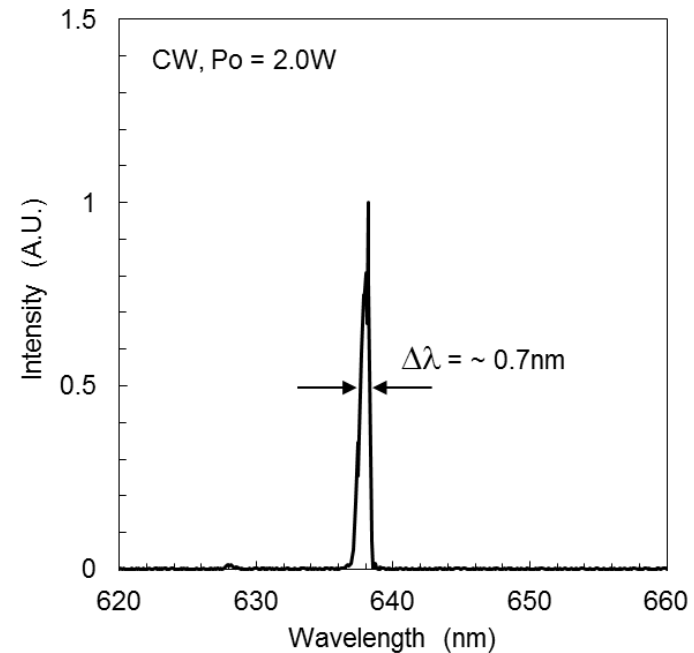
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Typical characteristics curves : Far field pattern, Lasing spectrum

- ✓ FFP FWHM : V-FWHM = 32°typ., H-FWHM = 9°typ.
- ✓ Spectrum width FWHM = 0.7nm



Far field pattern



Lasing spectrum

(Note 1) Test condition : Tc = 25 °C, CW, Po = 2.0W

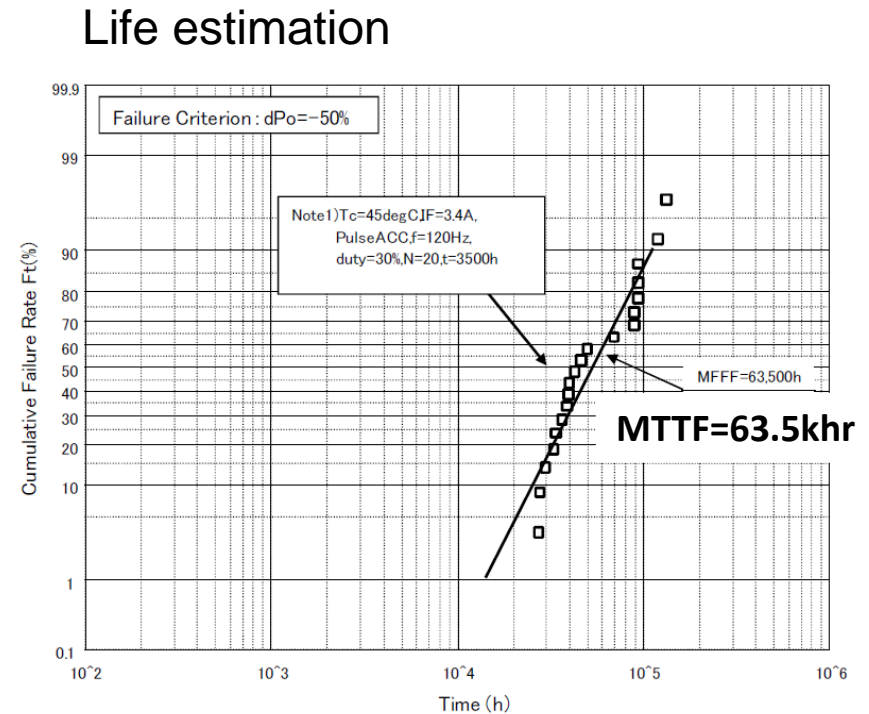
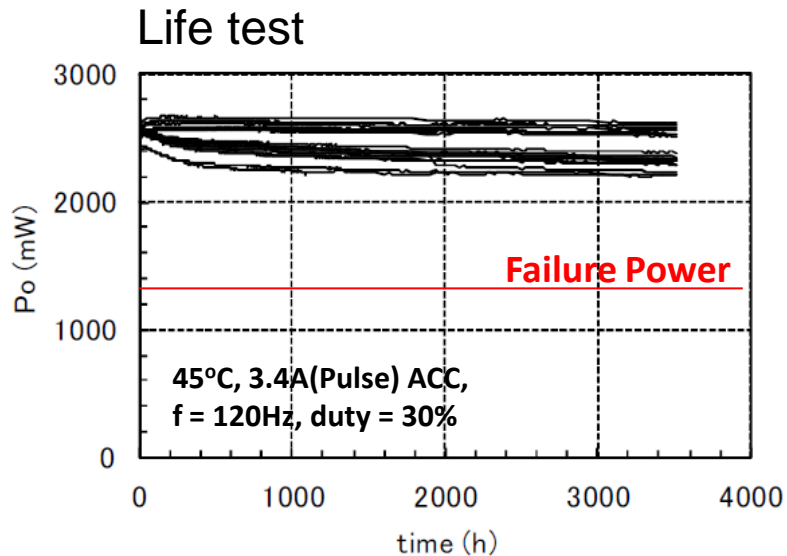
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Life test results

- ✓ High reliability : MTTF 63,500 hours at 45°C, $I_o = 3.4A$ (Pulse)
N=20pcs



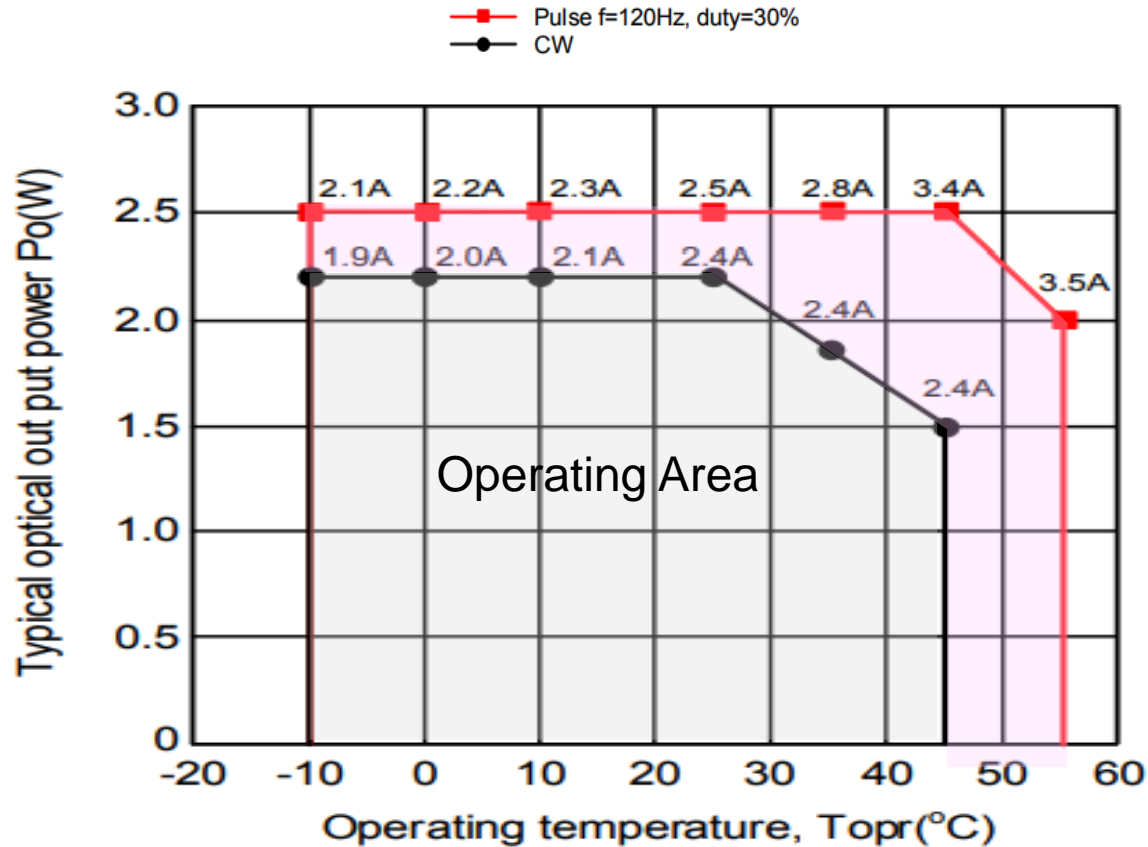
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Expected Life Time

✓ Life(MTTF)=20,000hr over at the following operating area.



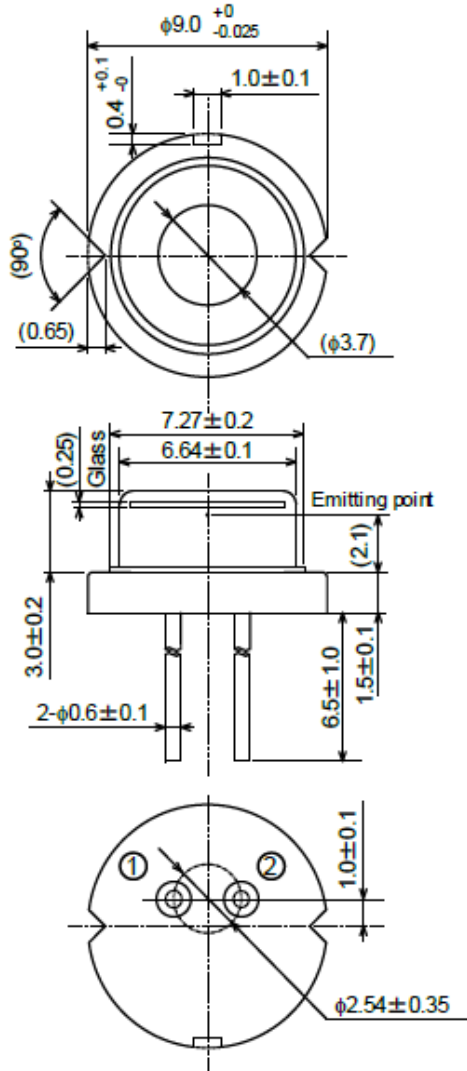
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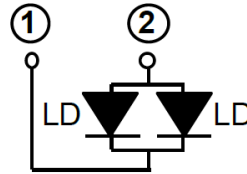
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Product outline

□ Outline



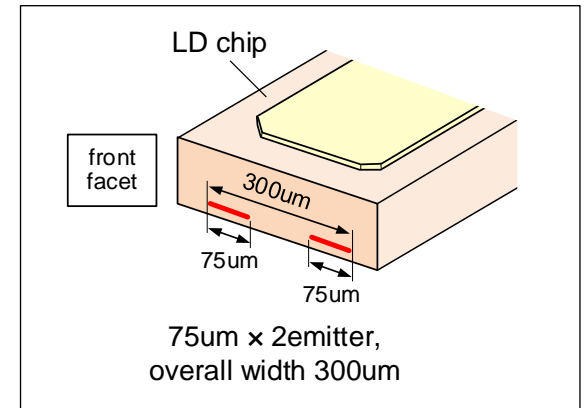
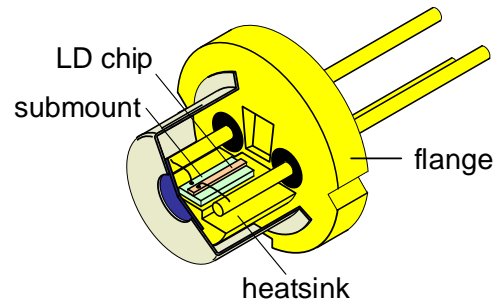
□ Internal circuit



□ Outline photograph



□ Emitter information



LD chip enlarged view around front facet

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