

905nm 50000mW 85°C Pulsed Laser Diode in TO-18 ϕ 5.6mm Package

Part No. LDP905D50WC48

FEATURES

- 905nm 50W laser diode
- Package: TO-18 (5.6mm)
- Short pulse operation
- TE mode

APPLICATIONS

- Laser range finder (LRF)
- Automotive application

ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Rating	Unit
Peak output power	P_{peak}	60	W
Forward current	I_f	40	A
Pulse width (FWHM)	t_p	100	ns
Duty ratio	D_r	0.1	%
Reverse voltage	V_R	3	V
Operating temperature	T_{opr}	-40 to +85	°C
Storage temperature	T_{stg}	-40 to +100	°C

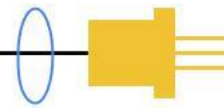
ELECTRICAL AND OPTICAL CHARACTERISTICS ($T_c = 25^\circ\text{C}$)

Parameter	Symbol	Min.	Typ.	Max.	Unit
Lasing wavelength	λ_p	895	905	915	nm
Optical output power	P_o	46	50	-	W
Spectral width (FWHM)	λ_w	-	7	-	nm
Threshold current	I_{th}	-	-	1	A
Operating current	I_{op}	-	30	-	A
Operating voltage	V_{op}	-	-	10.5	V
Parallel divergence angle	$\Theta_{//}$	-	10	-	deg
Perpendicular divergence angle	Θ_{\perp}	-	28	-	deg
Temperature coefficient of wavelength	$\Delta\lambda/\Delta T$	-	0.28	-	nm/°C
Temperature coefficient of optical power	$\Delta P_o / (\Delta T \times P_o)$	-	-0.3	-	%/°C

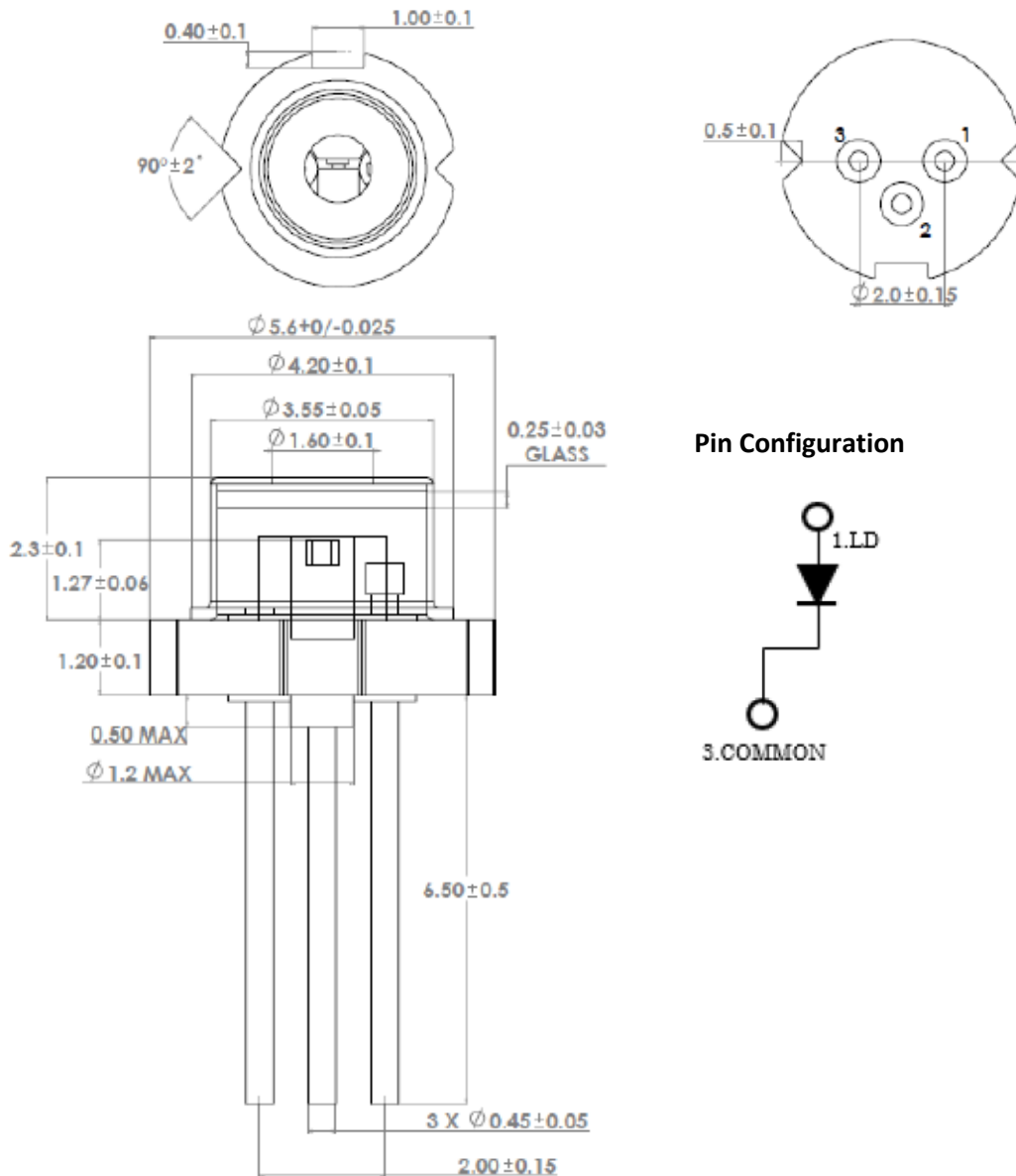
Note: Operating condition – Pulse width $t_p = 100\text{nsec}$, Repetition frequency $F_r = 1\text{kHz}$, Duty ratio $D_r = 0.01\%$.

CHIP CHARACTERISTICS

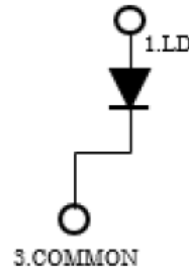
Parameter	Symbol	Min.	Typ.	Max.	Unit
Aperture size	$W \times H$	-	200 x 5	-	μm



MECHANICAL OUTLINE (unit: mm)



Pin Configuration



ADDITIONAL NOTES

- Do not operate the device above maximum ratings. Doing so may cause unexpected and permanent damage to the device.
- Take precautions to avoid electrostatic discharge and/or momentary power spikes. A change in the characteristics of the laser or premature failure may result.
- Proper heat sinking of the device assures stability and lifetime. Always ensure that maximum operating temperatures are not exceeded.
- Observing visible or invisible laser beams with human eye directly, or indirectly, can cause permanent damage. Use a camera to observe the laser.
- No laser device should be used in any application or situation where life or property is at risk in the event of device failure.
- Specifications are subject to change without notice. Ensure that you have the latest specification by contacting us prior to purchase or use of the product.

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