U.S. Lasers, Inc.

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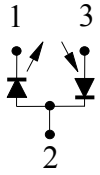
ATTENTION : Observe Precautions
Static Sensitive Device

TECHNICAL DATA

D8505

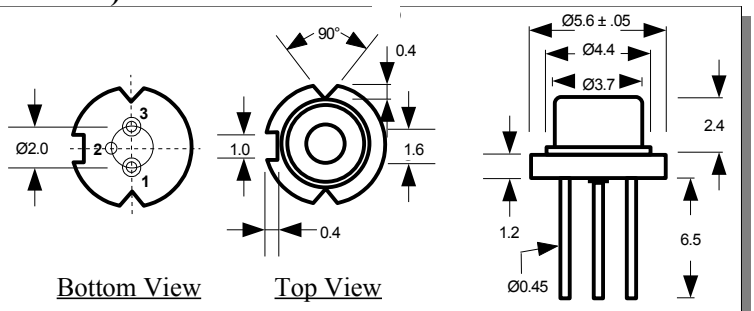
- Index Guided MQW Structure
- Wavelength : 635 nm (Typ.)
- Optical Power : 5 mW CW
- Threshold Current : 25 mA (Typ.)
- Package Style : TO-18 (5.6 mmØ)

Pin Connection
1 - Laser Diode Cathode
2 - Laser Diode Anode
Photodiode Cathode
3 - Photodiode Anode
* Case and Pin No. 2 are common



ABSOLUTE MAXIMUM RATINGS (Tc = 25 °C)

DESCRIPTION	SYMBOL	RATED VALUE
Optical Power (mW)	Po	5
Operation Temp (°C)	Top	-10 to +60
Storage Temp (°C)	Tstg	-40 to +85
LD Reverse Voltage (V)	VLDR	2
PD Reverse Voltage (V)	VPDR	30



OPTICAL AND ELECTRICAL CHARACTERISTICS (Tc = 25 °C)

DESCRIPTION	SYMBOL	MIN.	TYPICAL	MAX.	TEST CONDITION
Lasing Wavelength (nm)	λ_p	835	850	865	Po = 5mW
Threshold Current (mA)	I_{th}	10	25	40	Po = 5mW
Operating Current (mA)	I_{op}	15	30	50	Po = 5mW
Operating Voltage (V)	V_{op}	1.8	2.0	2.5	Po = 5mW
Monitor Current (mA)	I_m	0.05	0.3	1.0	Po = 5mW, VR = 5
Slope Efficiency (mW/mA)	η	0.3	0.5	0.7	********
Beam Divergence ∥ (°)	$\theta\parallel$	8	10	12	Po = 5mW
Beam Divergence ⊥ (°)	$\theta\perp$	25	30	40	Po = 5mW
Astigmatism (μm)	A_s	*	11	*	Po = 5mW, NA = 0.4

The following precautions should be taken to avoid failure of the device;

- Workers and workbenches should be grounded to a common stable earth at all times when working with lasers
- All equipment including power supplies, solder irons, etc. must be grounded to a common stable earth
- Power supplies should be well regulated and free of transients
- Drive circuit connections should be made either by soldering or by high reliability connectors. Clip leads such as alligator clips are not recommended. Mechanically unreliable contacts cause transients and destroy laser diodes
- Maximum soldering temp is 250 C for a maximum of 5 seconds
- High quality and high reliability components should be used throughout the drive circuit
- It is recommended that laser diodes be driven by an Automatic Power Control (APC) circuit using built in monitor photodiode in a feedback loop to maintain constant optical power output over the full operating temperature range and throughout the life of the device.
- Always store laser diodes in static-free containers.
- Never connect or disconnect any components or external equipment such as voltmeters, to or from the device circuit while power is on.
- Leads have to be soldered to their environment without mechanical stress. Any force during and after mounting must be avoided

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