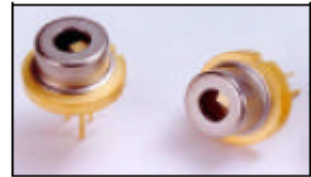




## LD1490-C010



### TECHNICAL DATA

## Infrared Distributed Feedback Laser Diode

### Features

- Lasing Mode: single longitudinal mode
- Peak Wavelength : typ. 1490 nm
- Optical Output Power: 10 mW, CW
- Package: 5.6 mm, flat window



### Absolute Maximum Ratings ( $T_C=15^\circ\text{C}$ )

Item	Symbol	Value	Unit
CW Output Power	$P_O$	20	mW
LD Reverse Voltage	$V_r$	2	V
LD Forward Current	$I_{op}$	200	mA
PD Reverse Voltage	$V_{rPD}$	20	V
PD Forward Current	$I_{PD}$	10	mA
Operating Case Temperature	$T_C$	0 ...70	$^\circ\text{C}$
Storage Temperature	$T_{stg}$	-40 ...85	$^\circ\text{C}$

### Specifications ( $T_C=25^\circ\text{C}$ )

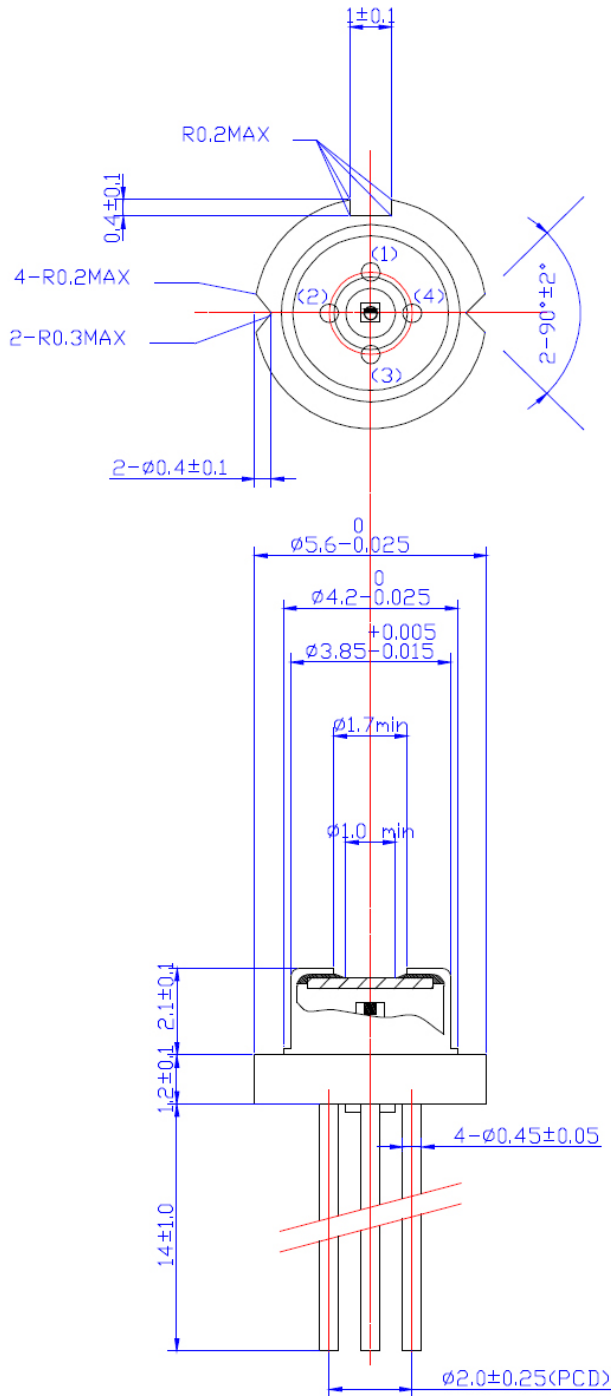
Item	Conditions	Symbol	Min.	Typ.	Max.	Unit
<b>Optical Specifications</b>						
CW Output Power	0 ...70 $^\circ\text{C}$	$P_O$	-	10	-	mW
Center Wavelength	25 $^\circ\text{C}$ , $P_O=3\text{mW}$	$\lambda_C$	1487	1490	1493	nm
	0..70 $^\circ\text{C}$ , $P_O=5\text{mW}$		1482	-	1498	
Spectral Width	25 $^\circ\text{C}$ , $P_O=5\text{mW}$	$\Delta\lambda$	-	0.11	0.2	nm
Wavelength Temp. Coefficient	0..70 $^\circ\text{C}$ , $P_O=5\text{mW}$	$\Delta\lambda / \Delta T$	-	0.11	-	nm/K
FWHM Beam Divergence	25 $^\circ\text{C}$ , $P_O=3\text{mW}$	$\Theta_{  }$	-	26	-	deg.
		$\Theta_{\perp}$	-	45	-	deg.
Modulation Bandwidth	25 $^\circ\text{C}$ , $I_{op}=I_{th}+16\text{mA}$	$f_{-3dB}$	6	-	-	GHz
	60 $^\circ\text{C}$ , $I_{op}=I_{th}+16\text{mA}$		4	-	-	
Resonance Frequency	25 $^\circ\text{C}$ , $I_{op}=I_{th}+16\text{mA}$	$f_r$	-	5	-	GHz
	60 $^\circ\text{C}$ , $I_{op}=I_{th}+16\text{mA}$		-	4	-	
<b>Electrical Specifications</b>						
Threshold Current	25 $^\circ\text{C}$	$I_{th}$	-	18	30	mA
	70 $^\circ\text{C}$		-	35	-	
Operating Current	25 $^\circ\text{C}$ , $P_O=5\text{mW}$	$I_{op}$	-	38	50	mA
	70 $^\circ\text{C}$ , $P_O=5\text{mW}$		-	65	-	
Slope Efficiency	25 $^\circ\text{C}$ , $P_O=5\text{mW}$	$\eta$	0.17	0.26	-	W/A
	70 $^\circ\text{C}$ , $P_O=5\text{mW}$		-	0.16	-	
Operating Voltage	25 $^\circ\text{C}$ , $P_O=5\text{mW}$	$V_{op}$	-	1.2	1.6	V
Serial resistance	25 $^\circ\text{C}$ , $P_O=5\text{mW}$	$R_S$	-	6	-	$\Omega$
Monitor Current	25 $^\circ\text{C}$ , $P_O=5\text{mW}$	$I_m$	40	100	700	$\mu\text{A}$
Monitor Dark Current	25 $^\circ\text{C}$ , $V_{RPD}=5\text{V}$	$I_d$	-	0.1	1.0	$\mu\text{A}$
Monitor Capacitance	F=1MHz, $V_{RPD}=5\text{V}$	$C_m$	-	5	10	pF

The above specifications are for reference purpose only and subjected to change without prior notice. Distributed

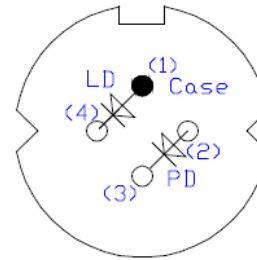


## Package Dimensons

### 5.6 mm Package (Unit:mm)



### Bottom View



PIN	Funciton
1	Case, LD Anode
2	PD Anode
3	PD Cathode
4	LD Cathode



## Safety of Laser light

- Laser Light can damage the human eyes and skin. Do not expose the eye or skin directly to any laser light and/or through optical lens. When handling the LDs, wear appropriate safety glasses to prevent laser light, even any reflections from entering to the eye. Focused laser beam through optical instruments will increase the chance of eye hazard.
- The LD emits invisible light



## Cautions

### 1. Operating methode

- This LD shall change its forward voltage requirement and optical output power according to temperature change. Also, the LD will require more operation current to maintain same output power as it degrades. In order to maintain output power, use of APC (Automatic Power Control) is recommended. Which use monitor feedback to adjust the operation current.
- Confirm that electrical spike current generated by switching on and off does not exceed the maximum operating current level specified herein above as absolute maximum rating. Also, employ appropriate countermeasures to reduce chattering and/or overshooting in the circuit.

### 2. Static Electricity

- Static electricity or electrical surges will reduce and degrade the reliability of the LDs. It is recommended to use a wrist trap or anti-electrostatic glove when handling the product.

### 3. Absolute Maximum Rating

- Active layer of LDs shall have high current density and generate high electric field during its operation. In order to prevent excessive damage, the LD must be operated strictly below absolute maximum rating.



**NOTE**  
LASERDIODE  
MUST BE COOLED