

TO56 LD (TOLD) Series

Product Description: The TO56 LD laser diodes are uncooled multi-quantum-well DFB (Distributed Feedback) laser diodes for 2.5Gbps and 10Gbps transmission at 1310/1490/1550nm. The laser diodes are packaged in a standard TO56 coaxial package with a photodiode for optical power monitor. Among these laser diodes, four products at 1270nm, 1290nm, 1310nm and 1330nm are suitable for 10Gbps transmission. The products are Telcordia GR-468 qualified, and in compliance with RoHS directives.

Applications

- 2.5/10Gbps fiberoptic transmission
- Optical communication transceivers
- Storage area networks
- Fiberoptic sensors
- Fiberoptic test and measurement

Features

- 1310/1490/1550nm band wavelengths
- Low threshold and low operating current
- High efficiency and high output power
- Wide operation temperature range
- High reliability
- TO56 standard package



Absolute Maximum Rating

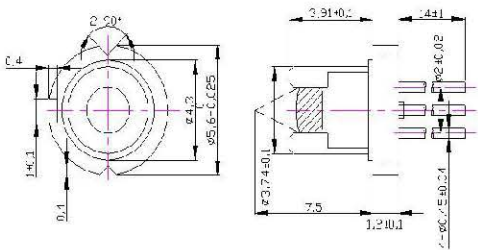
Symbol	Parameter	Ratings	Unit
I_f	Forward Current(Laser Diode)	150	mA
V_{rl}	Reverse Voltage(Laser Diode)	2	V
I_{fd}	Forward Current(Photo Diode)	2	mA
V_{rd}	Reverse Voltage(Photo Diode)	20	V
T_c	Case Temperature	-40 to +85	°C
T_{stg}	Storage Temperature	-40 to +85	°C
Stemp	Soldering Temperature(<10s)	260	°C

Optical and Electric Specifications(T=25°C)

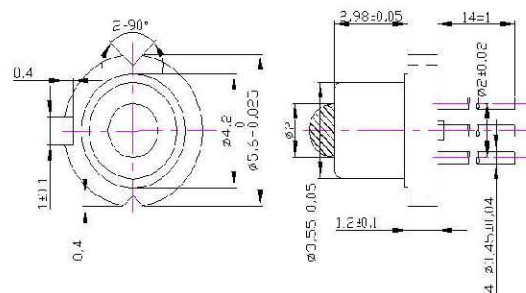
Parameter	Symbol	Test Conditions	Limits			Unit
			Min.	Typ.	Max.	
Threshold Current	I_{th}	CW	-	7	15	mA
		CW,TC=85°C	-	30	40	
Output Power	P_o	CW, $I_f=I_{th}+20mA$	-	6	-	mW
		CW, $I_f=I_{th}+20mA, T=85°C$	-	3	-	
Slope Efficiency	η	CW, $I_f=I_{th}+20mA$	0.3	0.36	-	mW/mA
Operating Voltage	V_{op}	CW, $I_f=I_{th}+20mA$	-	1.1	1.5	V
Peak Wavelength	λ_p	CW, $I_f=I_{th}+20mA, T=-40$ to +85°C	1300	1310	1320	nm
Wavelength/Temperature Coefficient	$D\lambda/dT$	$T=-40$ to +85°C	-	0.09	-	nm/°C
Dynamic Spectral Width	$\Delta\lambda$	2.5GHz at -20dB	-	0.32	-	nm
Side Mode Suppression Ratio	SMSR	CW, $I_f=I_{th}+20mA, T=-40$ to +85°C	35	40	-	dB
Rise time/Fall time	tr/tf	2.5Gbps, $I_{pp}=40mA, I_b=I_{th}$ 20%-80%	-	80	120	ps
Monitor Current (PD)	I_m	CW, $I_f=I_{th}+20mA, V_{RPD}=1V, RL=10$	0.1	0.3	1.0	mA
Dark Current (PD)	I_d	$V_{RPD}=5V$	-	-	1.0	μA
Capacitance (PD)	C_t	$V_{RPD}=5V, f=1MHz$	-	10	20	pF
Focus Length	F	Aspherical	7.0	7.5	8.0	mm

Mecahnical Dimensions

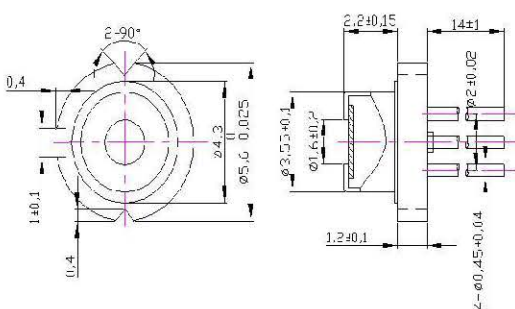
Aspherical Lens:



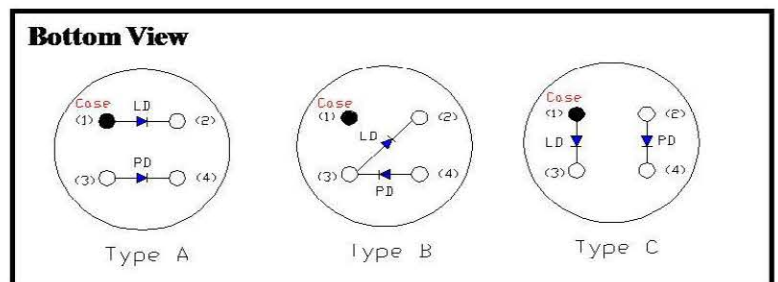
Ball Lens:



Flat Window:



PIN Definition:



Pin Assignment:

Pin No.	Type A	Type B	Type C
1	LD Anode(Case)	Case	LD Anode(Case)
2	LD Cathode (+)	LD Cathode (+)	PD Anode(-)
3	PD Anode (-)	LD Anode/ PD Cathode (+)	LD Cathode(+)
4	PD Cathode (+)	PD Anode (-)	PD Cathode(+)

Ordering Information

TO-	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>
	LD Type	Wavelength	Data	Lens Cap	Pin Out	Output Power
	F:FP	27:1270nm	01:1.25G	A:Aspherical Lens	A:Type A	05:5mW
	D:DFB	29:1290nm	02:2.5G	B:Ball Lens	B:Type B	08:8mW
	S:SLED	...	10:10G	F: Flat Window	C:Type C	10:10mW
		61:1610nm				

Example of Ordering Form: TO-D3102AB10-01

TO-	D	31	02	A	B	10
	DFB	1310nm	2.5G	Aspherical Lens	Type B	10mW

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