

1310nm MQW DFB Laser Diode TO

Part No:TOLD 31 D – xxxx DA

1 Description

This component is a DFB laser diode designed for high-speed data communication up to 10Gb/s. It is packaged with a TO-56 header.

2 Application

- 10Gb/s Gigabit Ethernet
- 10Gb/s Fiber Channel



3 Feature

- High speed up to 10Gb/s and MQW active layer.
- Temperature range(0℃~75℃).
- High bandwidth.
- High performance and reliability.
- TO-56 Package with 1.5mm or 2.0mm ball lens, 7.5mm aspherical lens.

4 Absolute Operation Environment

Parameter	Symbol	Min.	Max.	Unit
Storage Temperature	Tst	-40	+85	℃
Operating Temperature	Top	0	+75	℃
Optical Output Power	P _o	-	30	mW
Forward Current (LD)	I _f	-	150	mA
Reverse Voltage (LD)	V _r	-	2	V
ESD susceptibility	V _{ESD}	500	-	V

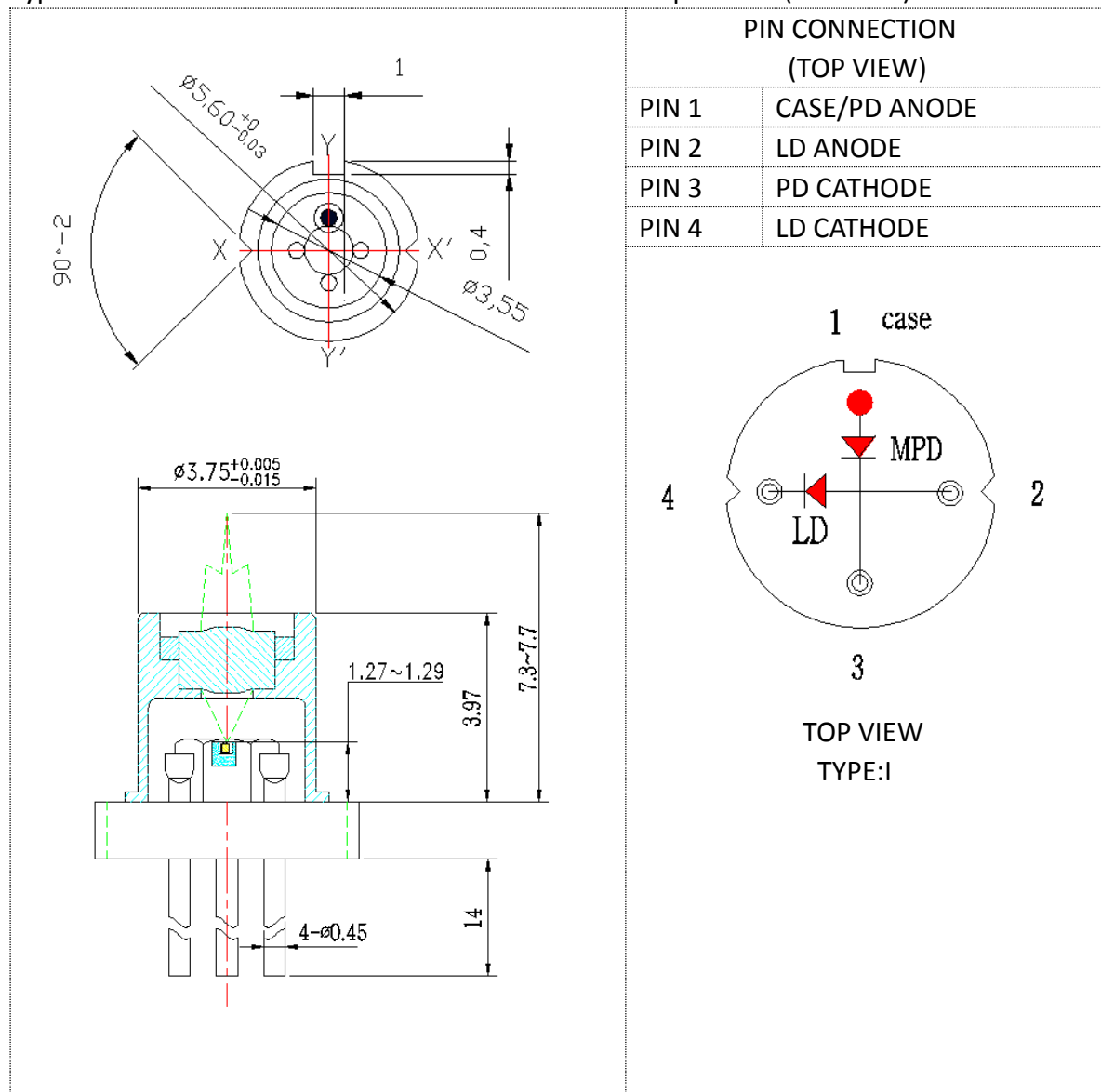
5 Electro-Optical Characteristics (T = 25℃, unless noted otherwise)

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Threshold Current	I _{th}	CW, T=25℃	-	10	15	mA
		CW, T=75℃	-	-	30	mA
Operating Voltage	V _{op}	CW, I _{op} =I _{th} +20mA	-	1.0	1.5	V
Optical Output Power	P _o	CW, I _{op} =I _{th} +20mA	4.0	7.0	-	mW
Slope Efficiency	η _s	CW, T=25℃ (I _{th} +20mA)	0.2	0.35	-	W/A
Kink Current	I _{kink}	I _{th} to 100mA	70			mA
Monitor Current	I _m	CW, I _{op} =I _{th} +20mA	100	-	1000	uA

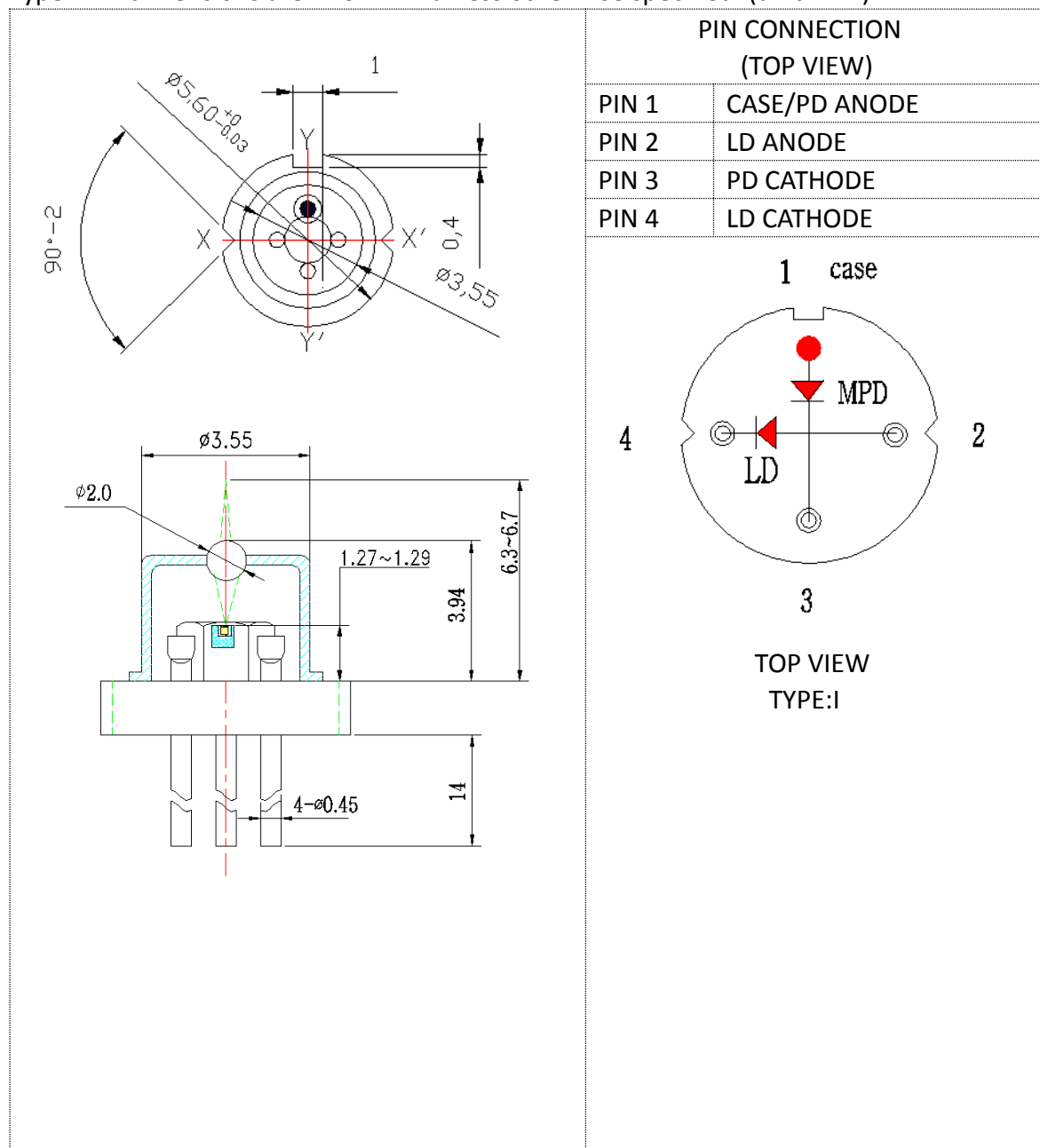
Dark Current	I_d	CW, $V_f=5V$			100	nA
SMSR	SMSR	$I_{op}=I_{th}+20mA$	35	40	-	dB
Center Wavelength	λ	CW, $P_o=5mW$	1300	1310	1330	nm
Spectral Width	$\Delta \lambda$	CW 5mW -20dB	-	0.3	1.0	nm
Wavelength temperature coefficient	$\Delta \lambda / \Delta T$	CW $P_o=5mW$	-	0.1	-	nm/°C
Band width	BW	20mA, -3dB	10			GHz
Focus	F_s	CW, Type1	7.2	7.5	7.8	mm
		CW, Type2	6.3	6.5	6.7	mm
		CW, Type3	5.8	6.0	6.2	mm
		CW, Type4	5.8	6.0	6.2	mm

6 Outline Specification

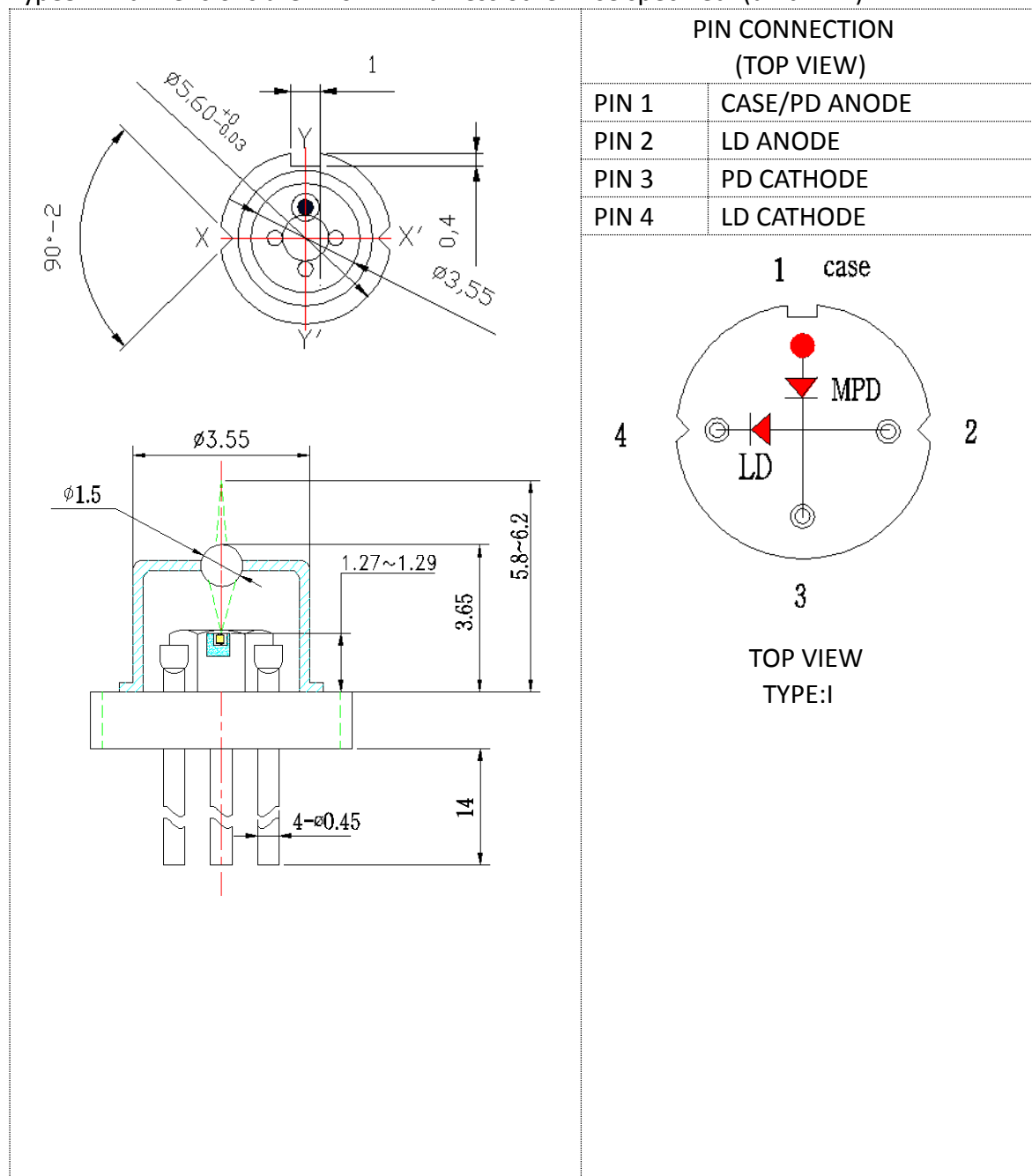
Type1: All dimensions are $\pm 0.1mm$ unless otherwise specified. (unit: mm)



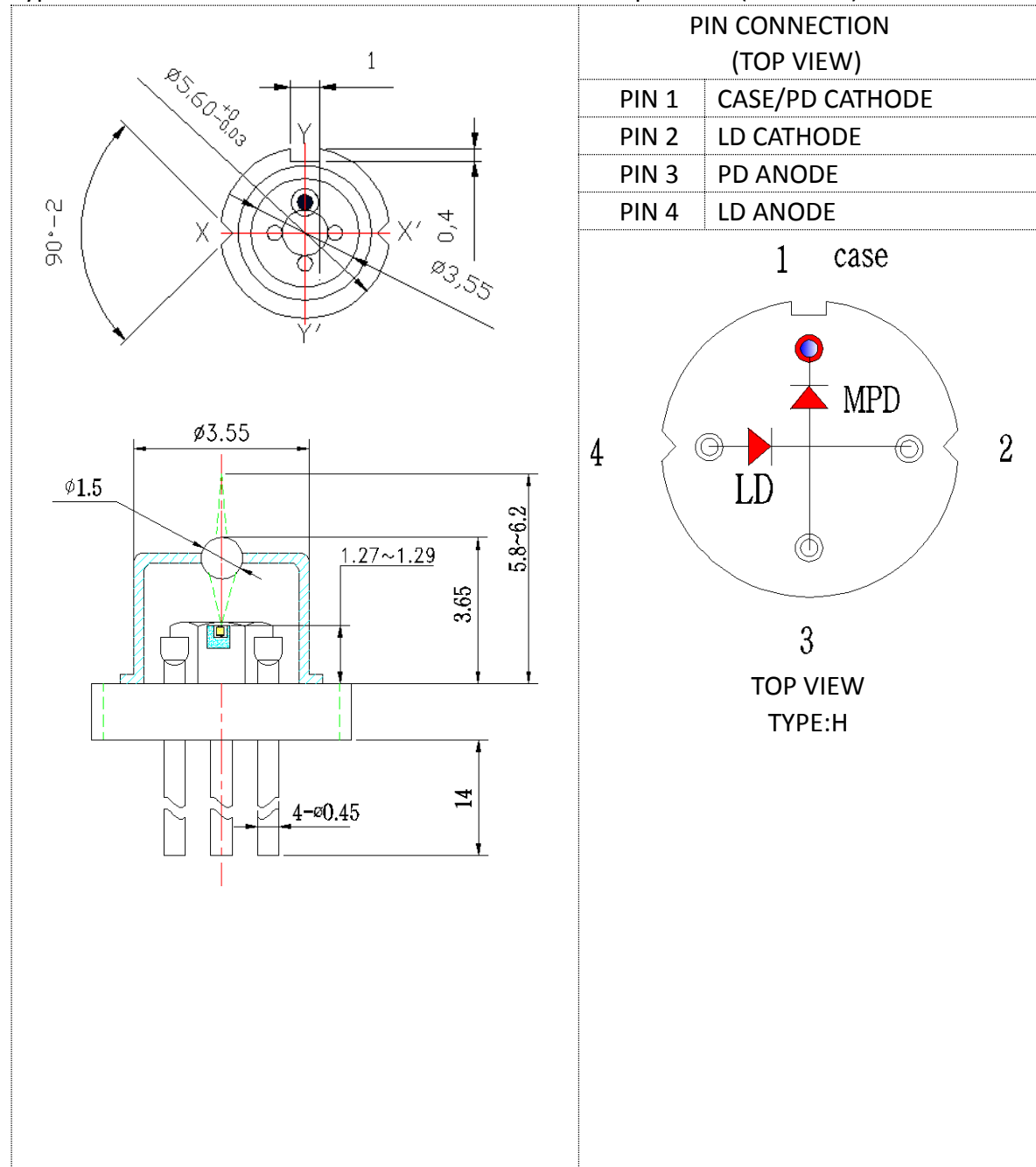
Type2: All dimensions are $\pm 0.1\text{mm}$ unless otherwise specified. (unit: mm)



Type3: All dimensions are $\pm 0.1\text{mm}$ unless otherwise specified. (unit: mm)



Type4: All dimensions are $\pm 0.1\text{mm}$ unless otherwise specified. (unit: mm)



7 Warning



AVOID BEAM



ESD prevention

7.1 Treatment of the laser light

Semiconductor laser radiates laser light during operation. Laser light is very dangerous when shot directly into human eyes. Don't look at laser light directly, or through optics such as a lens. The laser light should be observed using the IR-viewer, or other appropriate instruments.

7.2 Static Electric Safety Cautions:

The optoelectronic devices are sensitive to static electricity (ESD, electro-static discharge).

The product can be broken by ESD. When handling this product, please observe the following countermeasures against Static Electricity and Surge:

- 1) Ground all equipments, machinery jigs, and tools in the process line with earth wires;
 - 2) Workers should always use earth bands;
 - 3) Humidity in working environment should be controlled to be 40 percent RH or higher
 - 4) Use conductive materials for this product's container, etc;
 - 5) Ground the mat on the workbench and keeping it in order by scheduled checking
- It is extremely important to prevent surge, eliminate it rapidly, and prevent it from spreading.

8 Part No Assigned

TOLD 31 D – xxxx D A

(1) (2) (3) (4) (5)(6)

Series No	Description
(1)TOLD	FIXED: LASER DIODE IN TO PACKAGE
(2)CW CODE	31: 1310nm 55: 1550nm,
(3)CHIP TYPE	F: FP CHIP D: DFB CHIP V:VCSEL
(4)LD CHIP CODE	FOR INTERNAL USED ONLY
(5)PIN CONNECTION TYPE	D: TYPE D
(6)TEMP RANGE CODE	A 0℃ ~+70℃
	B -10℃ ~+75℃
	C 0℃ ~+85℃
	D -5℃ ~+85℃
	E -20℃ ~+85℃
	F -40℃ ~+85℃

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