

1550nm FP Laser Diode TO

Part No:TOLD 55 F – 0302DF

1 Description

This component is a FP laser diode designed for high-speed data communication up to 2.5Gbps with monitor pd in it. It is packaged with a TO-56 header and a 1.5mm ball lens cap.

2 Application

- Telecommunication 155MHZ
- Data communication



3 Feature

- 1550nm typical emission wavelength.
- Low threshold current, low operation current.
- High Power, wide temperature range(-40°C ~85°C).
- High speed up to 2.5Gbps.
- High performance and reliability.

4 Absolute Operation Environment

| Parameter | Symbol | Min. | Max. | Unit |
|-----------------------|--------|------|------|------|
| Storage Temperature | Tst | -40 | 100 | °C |
| Operating Temperature | Top | -40 | 85 | °C |
| Optical Output Power | Po | - | 20 | mW |
| Forward Current (LD) | If | - | 150 | mA |
| Reverse Voltage (LD) | Vr | - | 2 | V |
| ESD susceptibility | VESD | 500 | - | V |

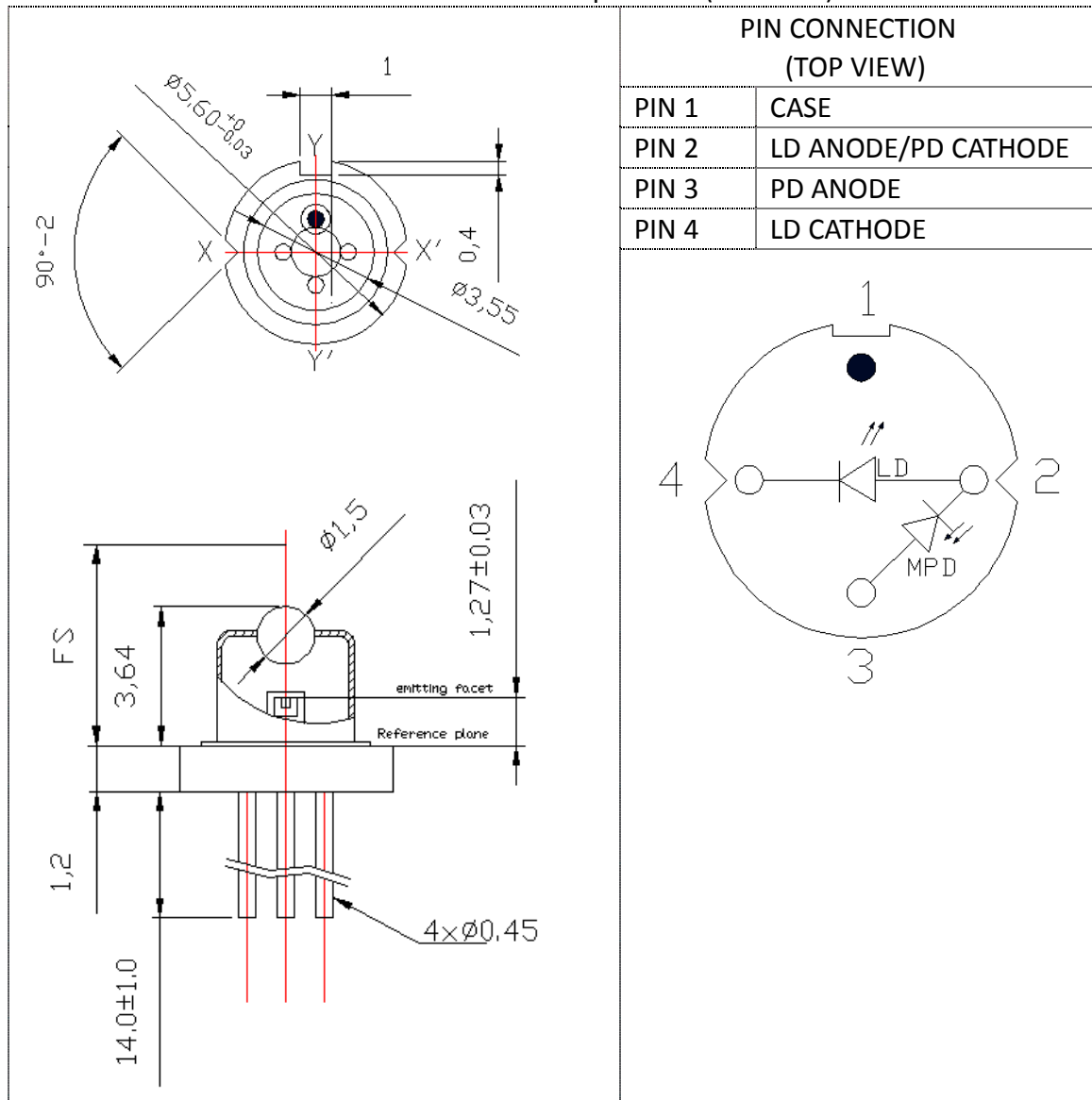
5 Electro-Optical Characteristics (T = 25°C, unless noted otherwise)

| Parameter | Symbol | Test Conditions | Min. | Typ. | Max. | Unit |
|--------------------------|------------------|------------------|------|------|------|------|
| Threshold Current | Ith | CW, T=25°C | - | 14 | 16 | mA |
| | | CW, T=85°C | - | 24 | 32 | mA |
| Operating Voltage | Iop | CW, Iop=Ith+20mA | - | 1.15 | 1.5 | V |
| Optical Output Power | Po | CW, Iop=Ith+20mA | 4.5 | 5.5 | - | mW |
| Slope Efficiency | η_s | CW, T=25°C | 0.2 | 0.3 | - | W/A |
| Center Wavelength | λ | CW, Iop=Ith+20mA | 1530 | 1550 | 1570 | nm |
| Spectral Width (FWHM) | $\Delta \lambda$ | CW, Iop=Ith+20mA | - | - | 2.0 | nm |

| | | | | | | |
|-----------------|----------|------------------------------|-----|-----|------|----|
| Rise/Fall Time | tr/tf | From 10% to 90% | - | 200 | 240 | ps |
| Focus | fs | CW | 6.1 | 6.3 | 6.5 | mm |
| Monitor Current | I_{PD} | CW, $I_{op} = I_{th} + 20mA$ | 100 | - | 1000 | uA |
| Dark Current | I_d | CW, $V_r = -5V$ | | | 100 | nA |

6 Outline Specification

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



7 Warning

7.1 Treatment of the laser light

Semiconductor laser radiates laser light during operation. Laser light is very dangerous



AVOID BEAM



ESD prevention

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 55 F – 0302 D F

(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°C ~+70°C |
| | B -20°C ~+70°C |
| | C 0°C ~+85°C |
| | D -5°C ~+85°C |
| | E -20°C ~+85°C |
| | F -40°C ~+85°C |

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