

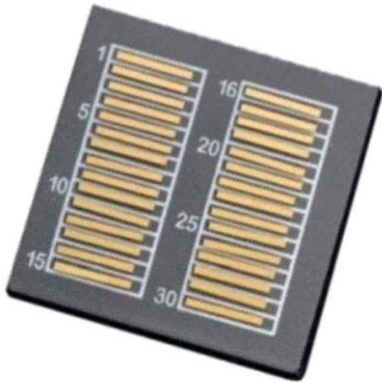
DFB Laser Diode Chips

1550nm, Linewidth up to 50kHz, 300mW



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Features

- AlGaInAs MQW (Multiple Quantum Well)
- Single mode
- Edge-emitting
- High output power
- Narrow beam divergence angle
- RoHS Compliant
- Telcordia Technologies™ GR-468 Compliant

Applications

- DWDM
- Silicon Photons



We provide a wide range of premium laser diode chips for all application scenarios. These laser diode chips are produced using state-of-the-art quantum-well epitaxial layer growth and a reliable ridge waveguide structure. We offer these lasers in many configurations, with various back-face and front-face reflection options. Custom designs and production are also available. The chips are typically offered as metalized bar chips or on submount, with full testing and burn-in processes. Additionally, we provide packaging and fiber pigtail services.

Due to their high sensitivity to electrostatic discharge, warranty coverage applies only to fully metal covered modules the benchtops, which include proper protection. Other versions of the lasers and photodetectors are not covered by any warranty. Please use them with great caution.

Specifications

Parameter	Min	Typical	Max	Unit
Threshold Current		40	50	mA
Optical Output Power	70	80	300	mW
Forward Voltage		1.63	2	V
Peak Wavelength	1547	1550	1553	nm
Wavelength/Temperature Coefficient*			0.1	nm/°C
Current/Temperature Coefficient*			0.07	nm/mA
Lorentzian Linewidth *			500	kHz
Slope Efficiency	0.1		0.2	W/A
Side Mode Suppression Ratio	50	55		dB
Farfield (Vertical) *		26	30	°
Farfield (Horizontal) *		14	18	°
Storage Temperature	-40		85	°C
Forward current			400	mA
Forward power**			120	mW
Reverse Voltage			2	V
ESD(HBM)			500	V

* Specification is met by design and process control, but not tested.

Note: Applying current to a bare chip can damage the device. These maximum parameters should only be applied after the chip is properly bonded to a heat sink. Prolonged exposure to absolute maximum ratings may adversely affect the reliability of the device.

Note: The specifications provided are for general applications with a cost-effective approach. If you need to narrow or expand the tolerance, coverage, limit, or qualifications, please [click this link](#):

Rev 02/25/26

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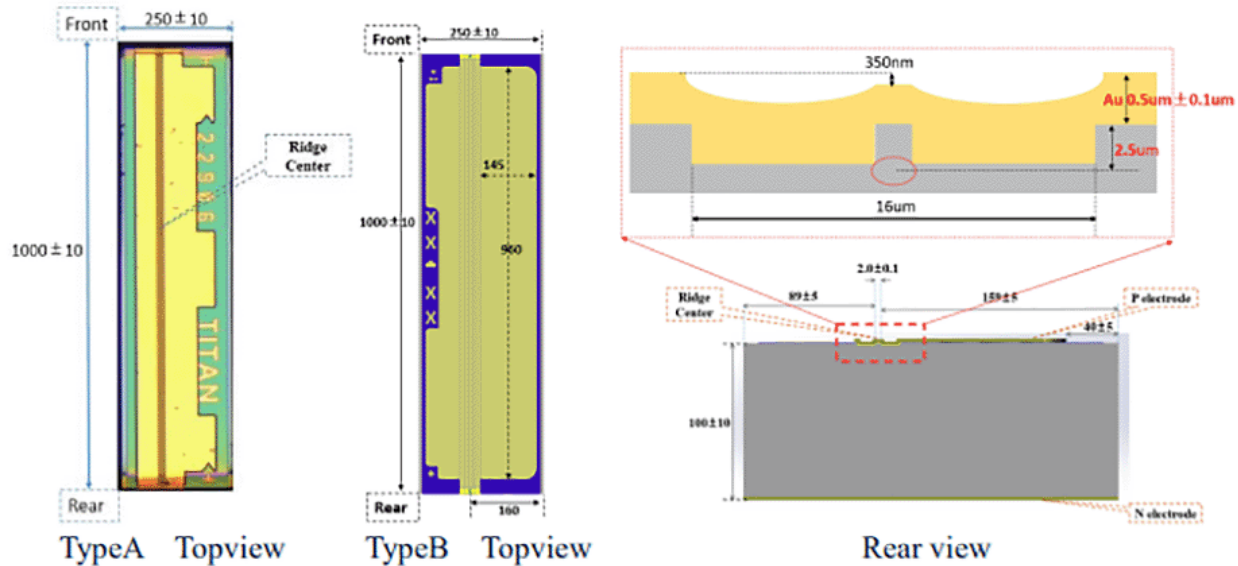
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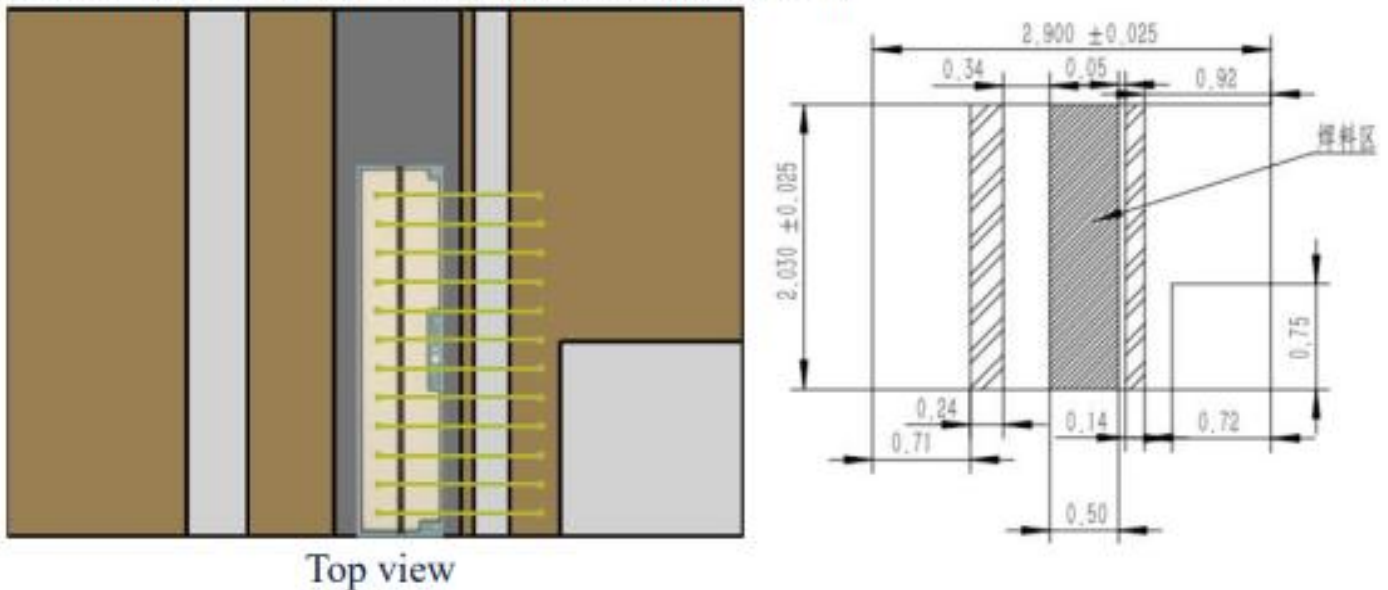
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Mechanical Dimension (mm)

Chip Dimensions (W x L x H): 250 μ m x 1000 μ m x 100 μ m



COC Dimensions (w x l x h) = 2.90mm x 2.03mm x 0.5mm



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Handling Procedures:

- InP chips are inherently fragile and easily damaged. Special caution should be used when handling. Do not handle with tweezers. A vacuum tip with a flat surface is recommended.
- Facets should not be touched.
- Suggested bonding condition:
 - Eutectic AuSn solder Bonding temperature: 325°C
 - Bonding force: 16 grams
 - Bonding force and temperature should be applied in a gradual fashion
 - Bonding time: 1.5 seconds.
- Suggested burn-in conditions:
 - Chip heatsink temperature: 85°C Current: 350mA
 - Time: 24 hours
 - Pass Criteria: | Delta I_{th} (T=25°C) | ≤ 9% , | Delta P (T=25°C) | ≤ 5% @ 350mA
 - Or | Delta I_{th} (T=55°C) | ≤ 5% | Delta P (T=55°C) | ≤ 9% @ 350mA

ESD and EOS

Switching transients can cause electrical overstress (EOS) damage in a chip.

EOS may result from improper ESD handling, incorrect power sequencing, a faulty power supply, or an intermittent connection.

Proper turn-on sequence:

1. All ground connections
2. Most negative supply
3. Most positive supply
4. All remaining connections

Proper turn-off sequence:

- Reverse the order of the turn-on process.

Ordering Information (Part Number)

Prefix	Wavelength	Power	Linewidth	Package
LCDF-	1550nm = 1550	40mW = 030 5mW = 005 10mW = 010 20mW = 020 60mW = 060 70mW = 070 80mW = 080 100mW = 100 120mW = 120 200mW = 200	0.05nm = 1 0.01nm = 2 500kHz = A 300kHz = B 100kHz = C 50kHz = D	Bare = B Submount = S Special = 0

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Caution Electrostatic Sensitivity



- Never touch laser diode and the module using hands
- Always use protections when handle a laser diode
- Recommend mounting the laser diode using an ionic gun and ESD finger cots



Laser Safety

This product meets the appropriate standard in Title 21 of the Code of Federal Regulations (CFR). FDA/CDRH Class 1M laser product. This device has been classified with the FDA/CDRH under accession number 0220191. All versions of this laser are Class 1M laser products, tested according to IEC 60825-1:2007 / EN 60825-1:2007. An additional warning for Class 1M laser products. For diverging beams, this warning shall state that viewing the laser output with certain optical instruments (for example eye loupes, magnifiers, and microscopes) within a distance of 100 mm may pose an eye hazard. For collimated beams, this warning shall state that viewing the laser output with certain instruments designed for use at a distance (for example telescopes and binoculars) may pose an eye hazard.

Wavelength = 1.3/1.5 μm .

Maximum power = 30 mW.



*Caution - Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

*IEC is a registered trademark of the International Electrotechnical Commission.

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