

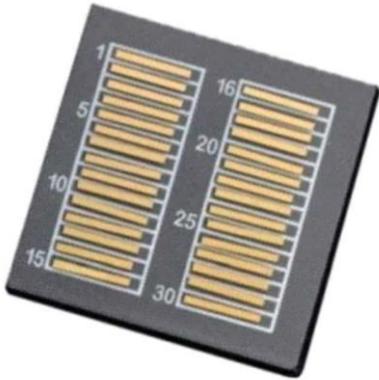
Single Mode Laser Diode Chips-FP

650-1600nm, 80mW



DATASHEET

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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.

Features

- Single mode
- Edge-emitting
- High output power
- Narrow beam divergence angle
- RoHS compliant
- Telcordia-GR468

Applications

- Sensors
- Lasers



Specifications

Parameter	Min	Typical	Max	Unit
Threshold Current		40	50	mA
Slope Efficiency		0.3		W/A
Optical Output Power	10	30	110	mW
Series Resistance		2	6	Ohm
Peak Wavelength	650		1600	nm
Side Mode Suppression Ratio	45	55		dB
Farfield (Vertical)*		21	26	°
Farfield (Horizontal)*		15	16	°
Relative Intensity Noise**			-140	dB/Hz
Storage Temperature	-20		85	°C
Forward current			500	mA
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 01/05/25

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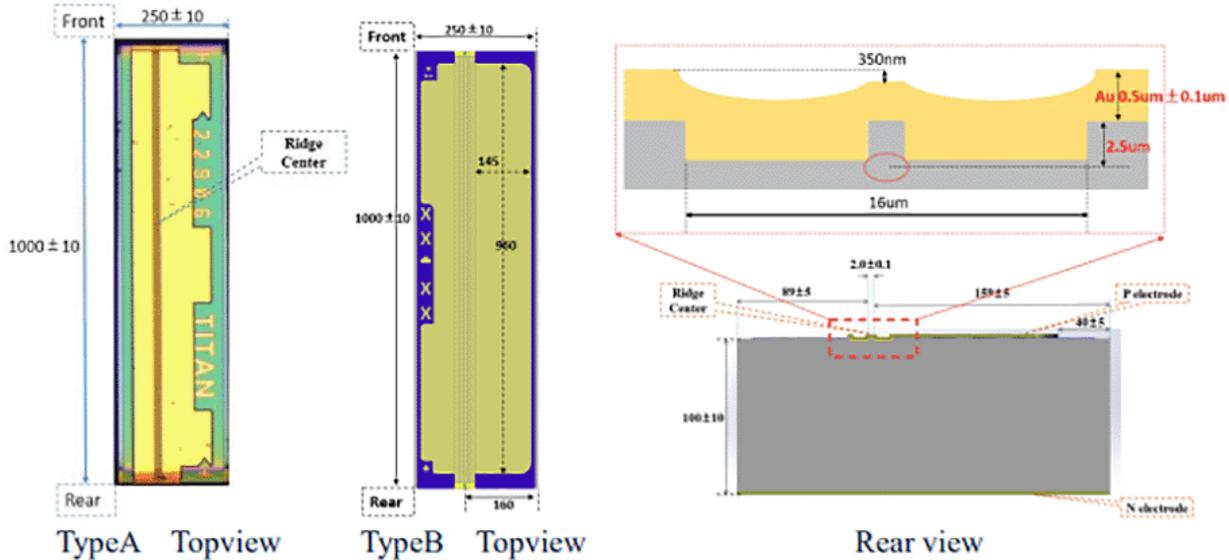
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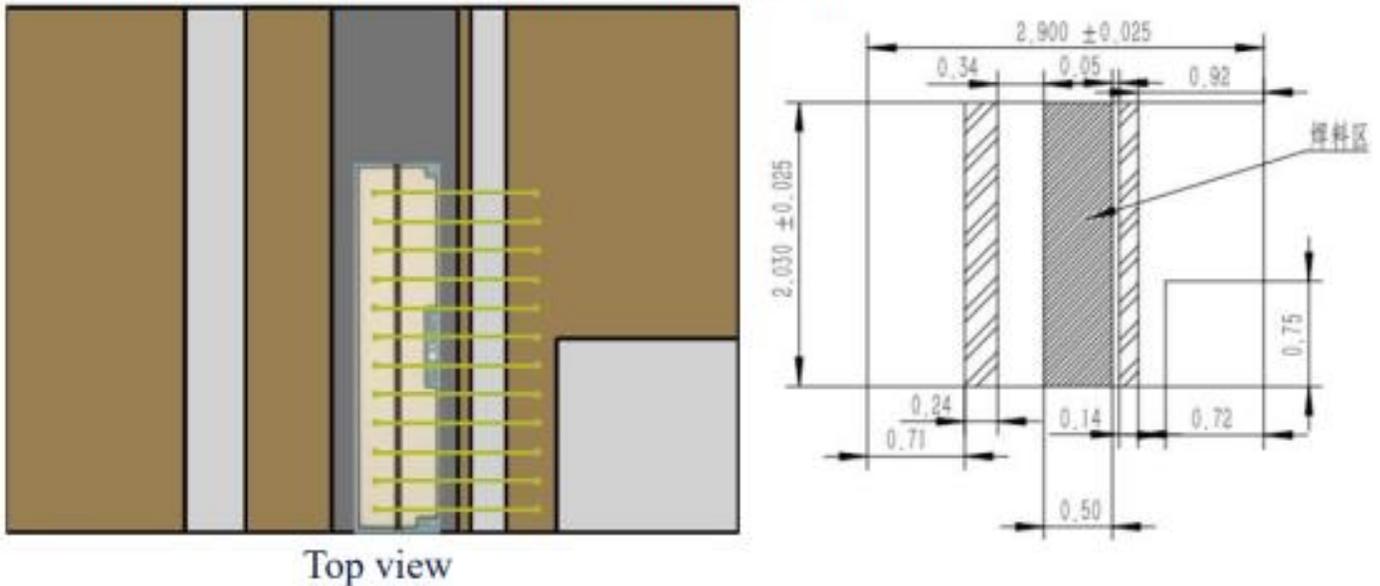
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Mechanical Dimension (mm)

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



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



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Handling Procedures:

The chips are inherently fragile and easily damaged. Special care is required when handling. Do not use tweezers; a vacuum tip with a flat surface is recommended. The facets should not be touched.

Suggested bonding conditions:

- Eutectic AuSn solder
- Bonding temperature: 430°C (pulse heating)
- Bonding force: 25 grams
- Apply bonding force and temperature gradually
- Bonding time: 10 seconds

Suggested burn-in conditions:

- Chip heatsink temperature: 85°C
- Current: 350 mA
- Time: 24 hours
- Pass criteria:
Delta I_{th} (T=55°C) ≤ 5%,
Delta P (T=55°C) ≤ 9% @350 mA

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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.

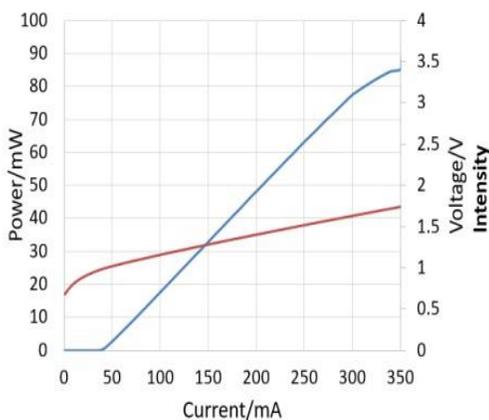
Proper turn-on sequence:

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

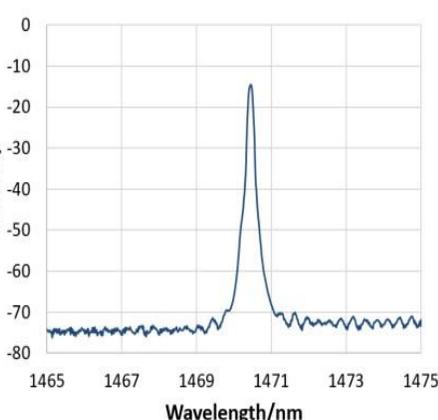
Proper turn-off sequence:

- Reverse the order of the turn-on process.

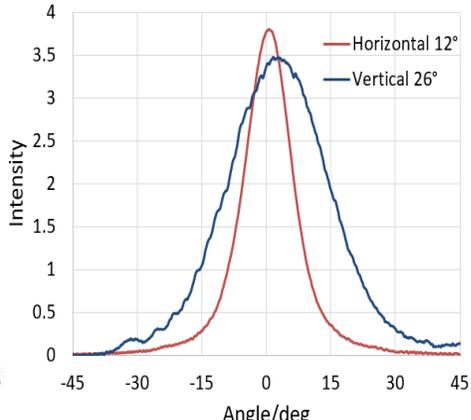
Typical Performance Curves For Narrow Band FP 1470nm



LIV @ 25°C



Spectrum @ 25°C && 300mA



Angle @ 25°C && 300mA

Ordering Information

Prefix	Wavelength	Power	Bandwidth	Package	Back Facet Reflectivity	Front Facet Reflectivity
LDCP-	1465-1480nm = 147 1310nm = 131 1550nm = 152 1620nm = 162 980nm = 098 780nm = 078 650nm = 065	5mW = 005 10mW = 010 20mW = 020 40mW = 030 60mW = 060 70mW = 070 80mW = 080 100mW = 100 120mW = 120	Broad = 1 Narrow = 2 Special = 0	Bare = B Submount = S Special = 0	>95% = 1 >98% = 2 Special = 0	<5% = 5 <3% = 3 <1% = 1 >10% = A >20% = B >50% = C >70% = D

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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.