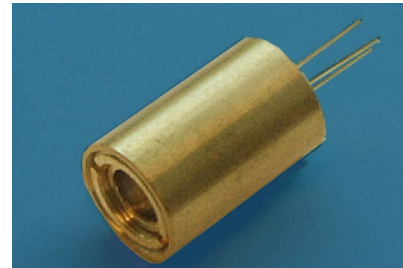


ML1533

1550 nm collimated high-power laser

Overview

A part of Modulight's RangerLase product family, ML1533 is a high-performance multi-mode 1550 nm laser designed for applications requiring high-power laser radiation at eye-safe wavelengths. The laser is housed in a 9-mm TO-can (SOT-148), covered by a rod lens. The laser device is designed to withstand CW operation. Due to the inherent thermal sensitivity of this laser product, proper cooling must be ensured during operation.



Applications

| Defense | Industrial | Medical |
|--|---|---|
| Eye-safe range-finding Illumination | Materials processing Optical pumping | Low-intensity laser therapy Aesthetic Treatments |

Electro-optical Characteristics

| Parameter | Symbol | Typical value | Unit |
|--------------------------------------|--------------------------|---------------|------|
| Peak Wavelength | λ | 1560 ± 20 | nm |
| Optical Output Power (peak power) | P_{OPT} | 400 | mW |
| Operating Current | I_{OP} | 3 | A |
| Operating Voltage | V_{OP} | 2 | V |
| Slope Efficiency | η | 0.24 | W/A |
| Threshold Current | I_{TH} | 0.9 | A |
| Wavelength Temperature Coefficient | $\Delta\lambda/\Delta T$ | 0.6 | nm/K |
| Spectral Width | $\delta\lambda$ | 10 | nm |
| Parallel Beam Divergence (FWHM) | $\theta_{ }$ | 7 | ° |
| Perpendicular Beam Divergence (FWHM) | θ_{\perp} | 7 | ° |
| Emitter Width | W_E | 150 | μm |

All values are typical for CW operation @ 20°C.

Absolute Maximum Ratings

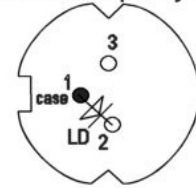
| Parameter | Symbol | Rating | Unit |
|-----------------------|-----------|---------------------|------|
| LD Reverse Voltage | V_{RLD} | 2 | V |
| LD Forward Current | I_{FLD} | 4 | A |
| Operating Temperature | T_{OP} | 0...30 ¹ | °C |
| Storage Temperature | T_{STG} | -40...85 | °C |

¹ A non-condensing environment should be ensured over the useful temperature range.

Package Information

The laser is housed inside a standard 9-mm TO-can (SOT-148), covered by collimating optics. The size of the emitting area of the laser die is $150 \times 1 \mu\text{m}$. More specific package information is available per request - please contact Modulight sales team.

Bottom view - pin layout



Safety Information

- The laser light emitted from this laser diode is invisible and harmful to the human eye. Avoid eye and skin exposure to the beam, both direct and reflected.
- Products are subject to the risks normally associated with sensitive electronic devices including static discharge, transients, and overload. Please ensure ESD protection prior to handling the products.
- These Modulight products are not intended for use in systems where product malfunction can reasonably be expected to result in personal injury.



Peak power and wavelength are for safety analysis only, not to present device performance.

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