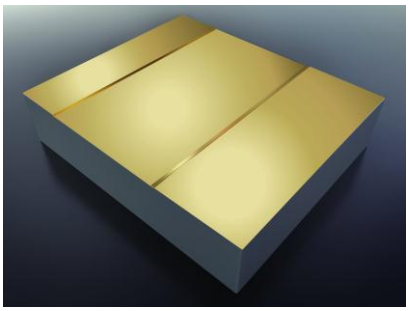
ML1112

905 nm high-power pulsed laser chip

Overview

ML1112 is a single-emitter multi-mode laser diode chip with a typical output power of 8 W. This laser diode is designed for short pulse applications at 905 nm. The laser chip is available as bare die chip.



Applications

Defense	Industrial	Medical
Range-finding Laser radar	Distance measurement Speed detectors	Low-level laser therapy

Electro-optical Characteristics

Parameter	Symbol	Typical value	Unit
Peak Wavelength	λ	905	nm
Optical Output Power (peak power)	P_{OPT}	8	W
Operating Current	I_{OP}	8	A
Operating Voltage	V_{OP}	2.0	V
Slope Efficiency	η	0.8	W/A
Threshold Current	I_{TH}	0.4	A
Wavelength Temperature Coefficient	$\Delta\lambda/\Delta T$	0.3	nm/K
Spectral Width	$\delta\lambda$	5	nm
Parallel Beam Divergence (FWHM)	$\theta\parallel$	8…12	°
Perpendicular Beam Divergence (FWHM)	$\theta\perp$	35…45	°

All above values are typical for pulsed operation (50 ns, 2 kHz) @ 20°C.

Absolute Maximum Ratings

Parameter	Symbol	Rating	Unit
LD Forward Current	I_{FLD}	15	A
Operating Temperature Range	T_{OP}	-10…+40 [1]	°C
Storage Temperature Range	T_{ST}	-40…+85	°C

[1] A non-condensing environment is required for operation temperatures below 10 °C.

Mechanical Specification

Parameter	Symbol	Value	Unit
Cavity Length	L	700	µm
Chip Width	W	500	µm
Emitter Width	W_e	150	µm
Chip Thickness	H	130	µm

Safety Information

- The laser light emitted from this laser diode is invisible and potentially 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.

Liability note