

EYP-RWL-1060-00750-4000-FLW01-0006

Revision 0.92

10.06.2020

SINGLE MODE LASER DIODES Fabry-Perot Laser

General Product Information

| Product | Application |
|-----------------------------------|-------------|
| 1060 nm Fabry-Perot Laser | Sensing |
| mini FlatPack Package with Window | |
| | |
| | |



Absolute Maximum Ratings

| Parameter | Symbol | Unit | min | typ | max |
|---------------------------------|-----------|------|-----|-----|-----|
| Storage Temperature | T_S | °C | -40 | | 85 |
| Operational Temperature at Case | T_C | °C | -20 | | 60 |
| Forward Current | I_F | mA | | | 950 |
| Reverse Voltage | V_R | V | | | 2 |
| Output Power | P_{opt} | mW | | | 680 |

Measurement Conditions / Comments

Stress in excess of one of the Absolute Maximum Ratings may damage the laser. Please note that a damaging optical power level may occur although the maximum current is not reached. These are stress ratings only, and functional operation at conditions beyond those indicated under Recommended Operational Conditions is not implied.

Recommended Operational Conditions

| Parameter | Symbol | Unit | min | typ | max |
|---------------------------------|-----------|------|-----|-----|-----|
| Operational Temperature at Case | T_C | °C | 0 | | 50 |
| Forward Current | I_F | mA | | | 940 |
| Output Power | P_{opt} | mW | 650 | | |

Measurement Conditions / Comments

measured with integrating sphere

Characteristics at 25° C at Begin Of Life

| Parameter | Symbol | Unit | min | typ | max |
|---------------------------------------|------------------|--------|------|------|------|
| Center Wavelength | λ_c | nm | 1054 | 1064 | 1074 |
| Spectral Width (FWHM) | $\Delta\lambda$ | nm | | 0.3 | 3 |
| Temperature Coefficient of Wavelength | $d\lambda / dT$ | nm / K | | 0.3 | |
| Output Power @ I_F : mW | P_{opt} | mW | 650 | | |
| Slope Efficiency | η_d | W / A | | 0.9 | |
| Threshold Current | I_{th} | mA | | 90 | |
| Cavity Length | L | µm | | 4400 | |
| Polarization | L | µm | | TE | |
| Beam Propagation Factor | M^2 | | | 1.2 | |
| Divergence parallel | $\Theta_{ }$ | ° | | 5 | |
| Divergence perpendicular | Θ_{\perp} | ° | | 20 | |

Measurement Conditions / Comments

total output measured with integrating sphere

E field parallel to the base plate of the package

FWHM

FWHM

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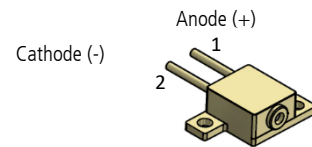
Package Dimensions

| Parameter | Symbol | Unit | min | typ | max |
|--------------------------|----------|------|-----|-----|-----|
| Height of Emission Plane | h_{EP} | mm | | 4 | |

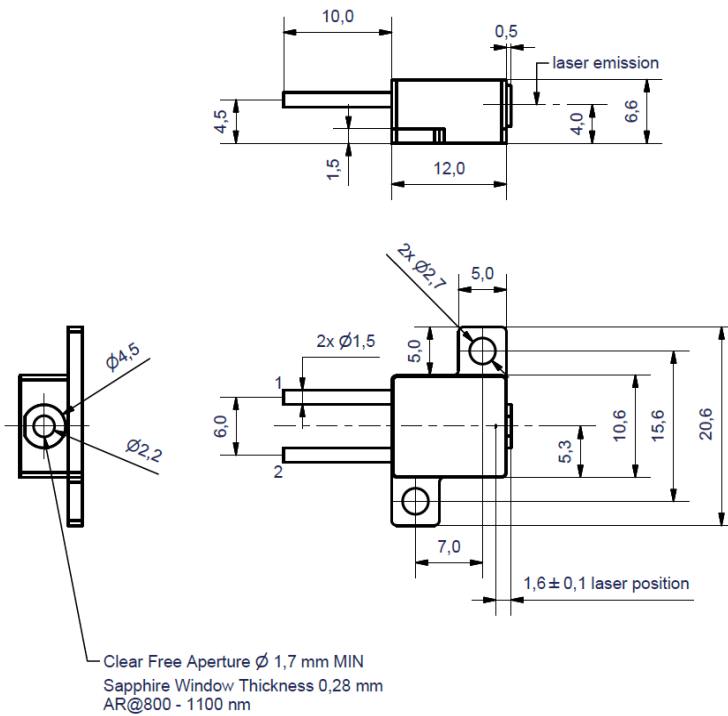
Measurement Conditions / Comments

Package Pinout

| | |
|----------------------------|-------------|
| Pin 1 (isolated from case) | Anode (+) |
| Pin 2 (isolated from case) | Cathode (-) |



Package Drawings



AIZ-18-0108-1400

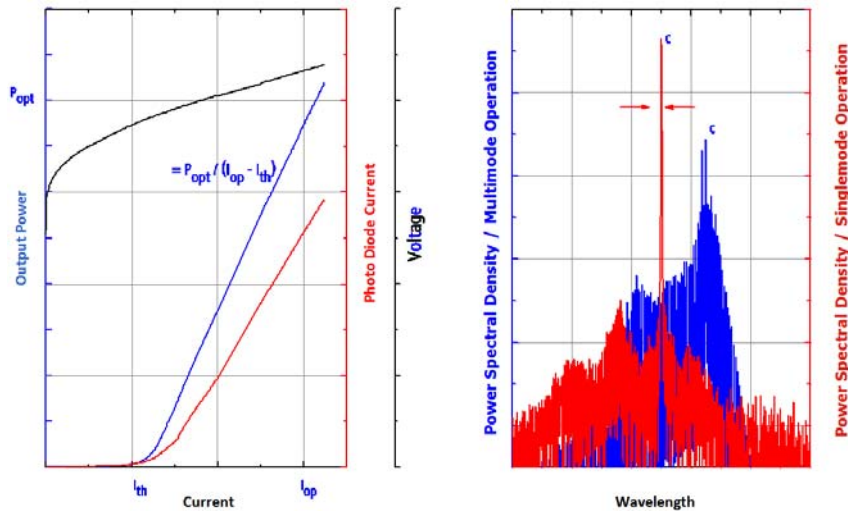
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Typical Measurement Results



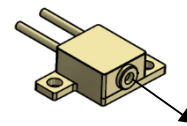
Unpacking, Installation and Laser Safety

Unpacking the laser diodes should only be done at electrostatic safe workstations (EPA). Though protection against electro static discharge (ESD) is implemented in the laser package, charges may occur at surfaces. Please store this product in its original package at a dry, clean place until final use. During device installation, ESD protection has to be maintained.

The RWL diode type is known to be sensitive against thermal stress. It should not be operated without appropriate injection from a seed laser. Operating at moderate temperatures on proper heat sinks will contribute to a long lifetime of the diode. The chip should be protected against moisture. A water vapor content below 5000 ppm is recommended for applications with high reliability requirements.

The laser emission from this diode is close to the invisible infrared region of the electromagnetic spectrum. Avoid direct and/or indirect exposure to the free running beam. Collimating the free running beam with optics as common in optical instruments will increase threat to the human eye.

Each laser diode will come with an individual test protocol verifying the parameters given in this document.



Laser Emission

