

EYP-RWL-1060-00100-1300-SOT01-0000

Revision 1.00

07.09.2021

SINGLE MODE LASER DIODES Fabry-Perot Laser



General Product Information

Product	Application
1060 nm Fabry-Perot Laser with hermetic TO Housing Integrated Monitor Diode	Spectroscopy



Absolute Maximum Ratings

Parameter	Symbol	Unit	min	typ	max
Storage Temperature	T_S	°C	-20		85
Operational Temperature at Case	T_C	°C	-20		50
Forward Current	I_F	mA			180
Reverse Voltage	V_R	V			0
Output Power	P_{opt}	mW			110

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

Recommended Operational Conditions

Parameter	Symbol	Unit	min	typ	max
Operational Temperature at Case	T_C	°C	15		40
Forward Current	I_F	mA			170
Output Power	P_{opt}	mW	10		100

Measurement Conditions / Comments

Characteristics at $T_C = 25^\circ\text{C}$ at Begin Of Life

Parameter	Symbol	Unit	min	typ	max
Center Wavelength	λ_C	nm	1050	1060	1070
Spectral Width (FWHM)	$\Delta\lambda$	nm			1
Temperature Coefficient of Wavelength	$d\lambda / dT$	nm / K		0.3	
Output Power @ 170 mA	P_{opt}	mW	100		
Slope Efficiency	η_d	W / A	0.6	0.8	
Threshold Current	I_{th}	mA			70
Cavity Length	L	µm		1300	
Divergence parallel	$\Theta_{ }$	°		8	
Divergence perpendicular	Θ_{\perp}	°		14	
Polarization				TE	
Spatial Mode (transversal)				TEM ₀₀	
Spectral Mode (longitudinal)				Single/Multi Mode	

Measurement Conditions / Comments

total output measured with integrating sphere

FWHM

FWHM

E field parallel to Pin 2 - Pin 3 - plane

Fundamental Mode

Depending on operating conditions

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Monitor Diode



Parameter	Symbol	Unit	min	typ	max
Monitor Detector Responsivity	I_{mon} / P_{opt}	$\mu A / mW$	0.2		10
Reverse Voltage Monitor Diode	$U_{R MD}$	V	3		5

Measurement Conditions / Comments

$U_R = 5 V$, target values

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Package Dimensions

Parameter	Symbol	Unit	min	typ	max
Height of Emission Plane	h_{EP}	mm	2.30	2.45	2.50
Excentricity of Emission Center	R	mm			0.12
Pin Length	l_{PIN}	mm		14	

Measurement Conditions / Comments

Reference plane: top side of TO header

Reference: center of outer diameter of header

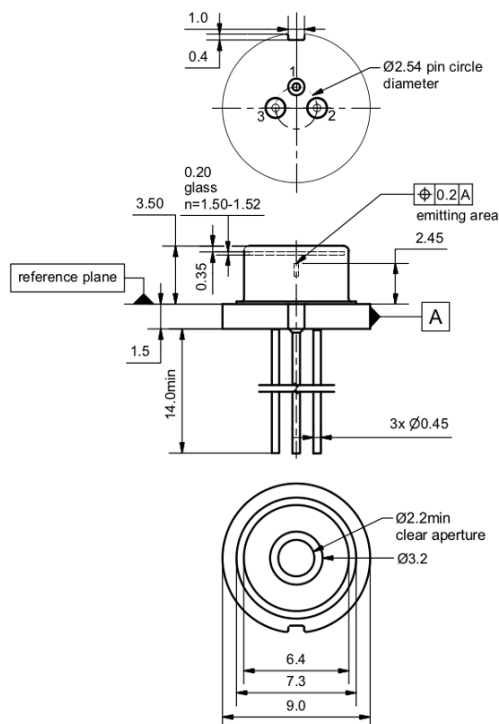
Package Pinout

- 1 Laser Diode Cathode, Monitor Diode Cathode, Case
- 2 Photo Diode Anode
- 3 Laser Diode Anode

Bottom View



Package Drawings



AIZ-16-0421-1455

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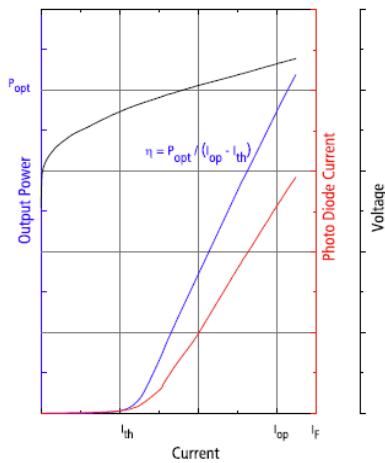
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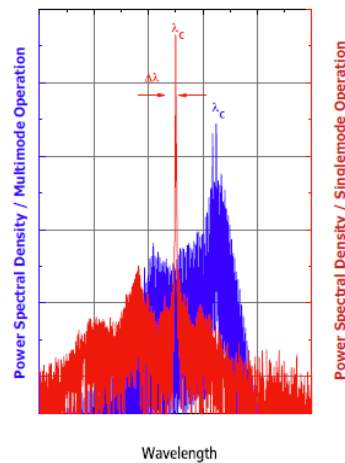


Typical Measurement Results

Output Power vs. Current



Spectra at Specified Optical Output Power



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.

