

EYP-RWL-0808-00800-4000-BFW39-0010

Revision 0.90

17.11.2020

SINGLE MODE LASER DIODES Fabry-Perot Laser

General Product Information

Product	Application
808 nm Fabry-Perot Laser with hermetic Butterfly Package	Metrology
Monitor Diode	
Beam Collimation	
RoHS compliant	



Absolute Maximum Ratings

Parameter	Symbol	Unit	min	typ	max
Storage Temperature	T_S	°C	-40		85
Operational Temperature at Case	T_C	°C	-20		75
Forward Current	$I_{F \text{ Peak}}$	A			1.6
Reverse Voltage	V_R	V			2
Output Power	$P_{\text{opt Peak}}$	W			0.9

Measurement Conditions / Comments

Stress in excess of one of the Absolute Maximum Ratings can cause permanent damage to the device.

Recommended Operational Conditions

Parameter	Symbol	Unit	min	typ	max
Operational Temperature at Case	T_C	°C	0		40
Forward Current	$I_{F \text{ Peak}}$	A		1.0	1.5
Output Power	$P_{\text{opt Peak}}$	W			0.8

Measurement Conditions / Comments

see Pulse Mode Conditions

see Pulse Mode Conditions

Characteristics at $T_{\text{case}} = 25^\circ \text{C}$, at Begin Of Life

Parameter	Symbol	Unit	min	typ	max
Center Wavelength	λ_c	nm	796	806	816
Spectral Width (FWHM)	$\Delta\lambda$	nm		1	3
Temperature Coefficient of Wavelength	$d\lambda / dT$	nm / K		0.28	
Threshold Current	I_{th}	A			0.3
Output Power @ $I_{F \text{ Peak}} = 1.5 \text{ A}$	$P_{\text{opt Peak}}$	W	0.8		
Divergence parallel ($1/e^2$)	$\Theta_{ }$	°		0.1	0.15
Divergence perpendicular ($1/e^2$)	Θ_{\perp}	°		0.1	0.15
Divergence Ratio	$\Theta_{\perp} / \Theta_{ }$		0.66		1.5

Measurement Conditions / Comments

$P_{\text{opt Peak}} = 0.8 \text{ W}$, multi mode emission

see Pulse Mode Conditions

full angle, parallel to base plate (see p. 3)

full angle, perpendicular to base plate (see p. 3)

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Characteristics at $T_{\text{case}} = 25^\circ \text{C}$, at Begin Of Life

Parameter	Symbol	Unit	min	typ	max
Beam Diameter parallel ($1/e^2$)	$d_{ }$	mm		1	1.5
Beam Diameter perpendicular ($1/e^2$)	d_{\perp}	mm		1	1.5
Aspect Ratio of Beam Diameters	$d_{ } / d_{\perp}$		0.66		1.5
Beam propagation factor	M^2			1.2	1.5
Polarization Extinction Ratio	DOP	%		90	

Measurement Conditions / Comments

parallel to base plate (see p. 3)

perpendicular to base plate (see p. 3)

E field perpendicular to base plate (see p. 3)

Pulse Mode Conditions

Parameter	Symbol	Unit	min	typ	max
Pulse Length	t_p	ms	0.1		10
Duty Cycle	D	%			10

Measurement Conditions / Comments

Monitor Diode

Parameter	Symbol	Unit	min	typ	max
Monitor Detector Responsivity	I_{mon}	μA	10		1000

Measurement Conditions / Comments

 $U_R = 5 \text{ V}$; $P_{\text{opt}} = 800 \text{ mW}$

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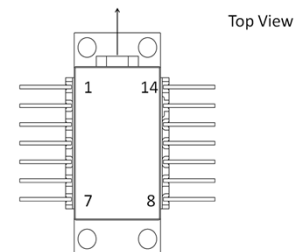
Package Dimensions

Parameter	Symbol	Unit	min	typ	max
Height of Emission Plane	h_{EP}	mm		4.9	

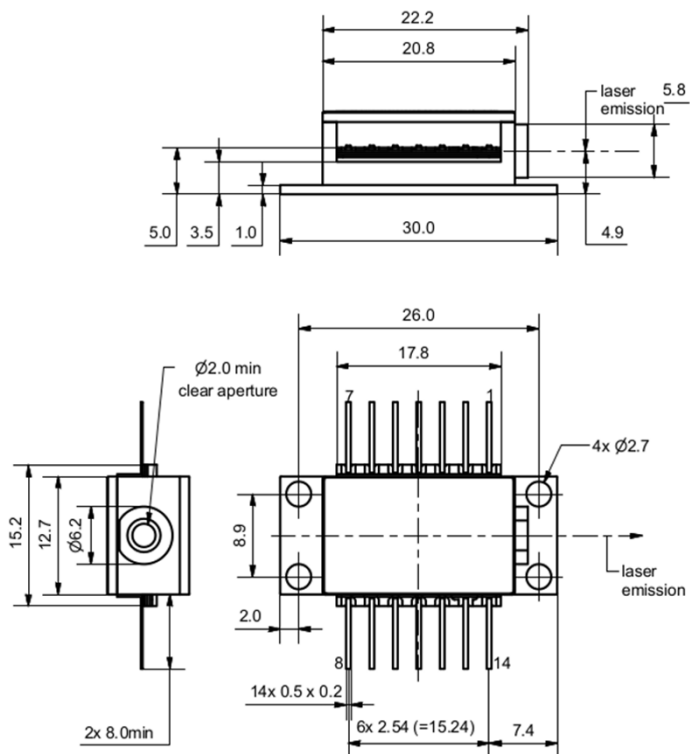
Measurement Conditions / Comments

Package Pinout

1	not connected	14	not connected
2	not connected	13	Case
3	not connected	12	not connected
4	not connected	11	Laser Diode (Cathode)
5	not connected	10	Laser Diode (Anode)
6	not connected	9	Photodiode (Anode)
7	not connected	8	Photodiode (Cathode)



Package Drawings



Polarization:

E field perpendicular to base plate

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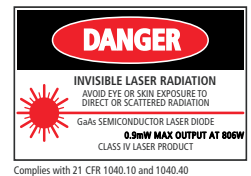
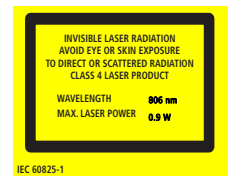
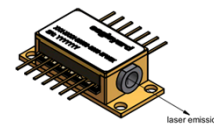
Unpacking, Installation and Laser Safety

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.

Operating at moderate temperatures on proper heat sinks will contribute to a long lifetime of the diode.

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.



Ordering Information:



800 Village Walk #316
Guilford, CT 06437
Ph: 203-401-8093

Email orders to: sales@xsoptix.com
Fax orders to: 800-878-7282