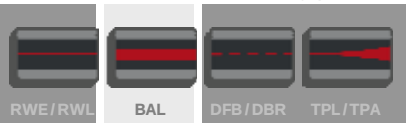
BROAD AREA LASER

GaAs Semiconductor Laser Diode
Single Emitter Structure

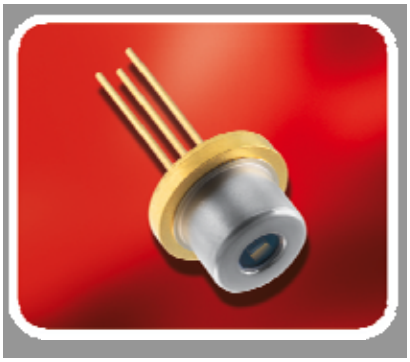


DATA SHEET **BA Laser**

EYP-BAL-0808-06000-2013-SOT12-0001

General Product Information

Product	Application
808 nm Broad Area Laser	Pulsed Material Processing
sealed SOT Housing	Medical
for Pulse Mode Operation	



Absolute Maximum Ratings

	Symbol	Unit	min	typ	max	Measurement Conditions / Comments
Storage Temperature	T_S	°C	-20		85	
Operational Temperature at Case	T_C	°C	-20		65	see burst mode characteristics
Forward Current	I_F	A			8	see burst mode characteristics
Reverse Voltage	V_R	V			0	
Peak Output Power	$P_{opt-peak}$	W			8	see burst mode characteristics
Forward Voltage	V_F	V			2.7	at 6.5 W peak output power

Recommended Operational Conditions

	Symbol	Unit	min	typ	max	
Operational Temperature at Case	T_C	°C	15		40	
Forward Current	I_F	A			8	see burst mode characteristics
Peak Output Power	$P_{opt-peak}$	W		6.5		see burst mode characteristics

Characteristics at T_{amb} 25 °C at Begin Of Life

Parameter	Symbol	Unit	min	typ	max	Measurement Conditions / Comments
Center Wavelength	λ_C	nm	803	808	813	see burst mode characteristics, 8A,
Spectral Width (FWHM)	$\Delta\lambda$	nm		2		measured pulse 4.000 to 4.150 (integrating)
Temperature Coefficient of Wavelength	$d\lambda / dT$	nm / K		0.28		
Slope Efficiency	η_d	W / A	1.0		1.25	
Threshold Current	I_{th}	A	0.50	0.85	1.50	
Peak Power of first Pulse @ 8A	P_{pulse1}	W	6.5			see burst mode characteristics
Average Electrical Power Consumption	P_{el}	mW			350	during 2 seconds (one burst)
Differential Series Resistance	R_S	Ω	0.10	0.15	0.25	

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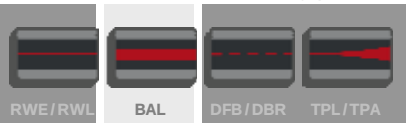

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Characteristics at T_{amb} 25 °C at Begin Of Life

Parameter	Symbol	Unit	min	typ	max	Measurement Conditions / Comments
Cavity Length	L	µm		2000		
Stripe width	Ws	µm		130		
Divergence parallel FWHM)	$\Theta_{\parallel}$	°	7	10	13	
Divergence perpendicular (FWHM)	$\Theta_{\perp}$	°	25	30	35	
Polarization				TM		polarization in perpendicular plane
Spectral Mode (longitudinal)				Multi Mode		

Burst Mode Characteristics

Parameter	Symbol	Unit	min	typ	max	Measurement Conditions / Comments
Pulse Length		µs		5		
Period Length		µs		10		
Duty Cycle		%		50		
Burst Length		ms		200		20.000 pulses
Burst Repetition Rate		s^{-1}			0.5	

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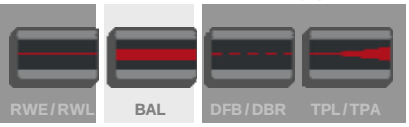

DATA SHEET

BA Laser

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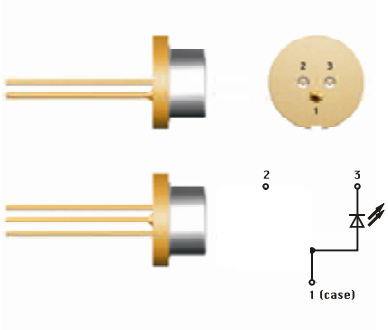
Package Dimensions

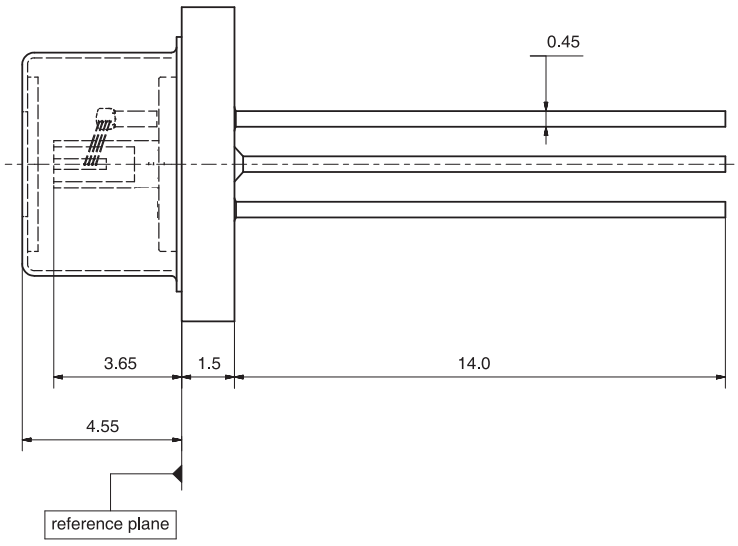
	Symbol	Unit	min	typ	max	
Height of Emission Plane	d_{EP}	mm	3.50	3.65	3.70	reference plane: top side of TO header
Excentricity of Emission Center	R	mm			0.12	reference: center of outer diameter of header
Pin Length	l	mm		14		

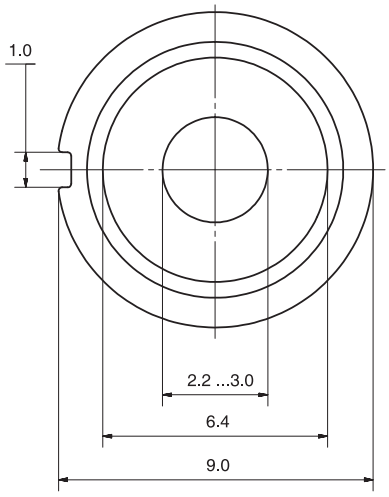
Package Pinout

Laser Anoode (+) connected to case	1
not connected	2
Laser Cathode (-)	3



Package Drawings





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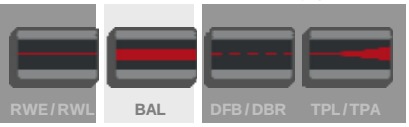

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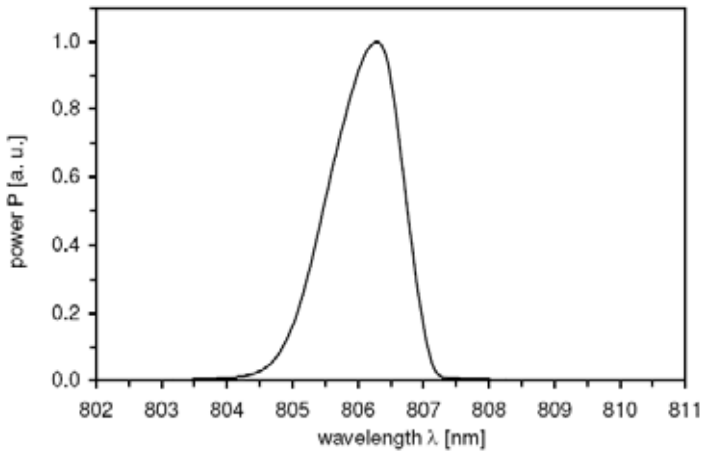
Typical Measurement Results

Spectrum Example at Specified Optical Output Power



Performance figures, data and any illustrative material provided in this specification are typical and must be specifically confirmed in writing by eagleyard Photonics before they become applicable to any particular order or contract. In accordance with the eagleyard Photonics policy of continuous improvement specifications may change without notice.

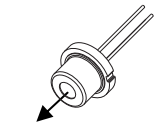
Unpackaging, Installation and Laser Safety

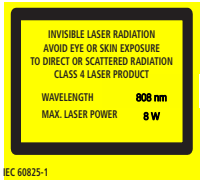
Unpacking the laser diodes should only be done at electrostatic safe workstations (EPA). Though protection against electro static discharge (ESD) is implemented in the laser package, charges may occur at surfaces. Please store this product in its original package at a dry, clean place until final use.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

The BAL diode type is known to be sensitive against thermal stress. Operating at moderate temperatures on propper heat sinks willl 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 thread to the human eye.

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


Laser Emission



Complies with 21 CFR 1040.10 and 1040.40

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