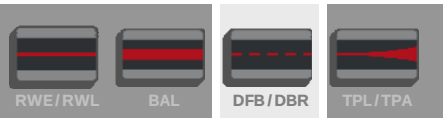
EYP-DFB-0763-00030-1500-SOT02-0000

We focus on power.

DISTRIBUTED FEEDBACK LASER

GaAs Semiconductor Laser Diode
with integrated grating structure



General Product Information

Product	Application
763 nm DFB Laser with TO Housing	Spectroscopy
Monitor Diode	O_2 Detection
	Metrology

Absolute Maximum Ratings

	Symbol	Unit	min	typ	max
Storage Temperature	T_S	°C	-40		85
Operational Temperature at Case	T_C	°C	10		40
Forward Current	I_F	mA			130
Reverse Voltage	V_R	V			0
Output Power	P_{opt}	mW			35

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

Recommended Operational Conditions

	Symbol	Unit	min	typ	max	Measurement Conditions / Comments
Operational Temperature at Case	T_C	°C	15		35	
Operational Temperature at Laser Chip	T_{LD}	°C	15		35	
Forward Current	I_F	mA			120	
Output Power	P_{opt}	mW	5		30	total output measured with integrating sphere

Characteristics at T_{LD} = 25 °C at Begin Of Life

Parameter	Symbol	Unit	min	typ	max	Measurement Conditions / Comments
Center Wavelength	λ_C	nm	762	763	764	see images on page 4
Spectral Width (FWHM)	$\Delta\nu$	MHz		2		
Temperature Coefficient of Wavelength	$d\lambda / dT$	nm / K		0.06		
Current Coefficient of Wavelength	$d\lambda / dI$	nm / mA		0.003		
Output Power @ I_F : 120 mA	P_{opt}	mW	30			total output measured with integrating sphere

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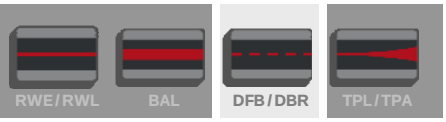

Characteristics at T_{amb} 25 °C at Begin Of Life cont'd

Parameter	Symbol	Unit	min	typ	max	Measurement Conditions / Comments
Slope Efficiency	S	W / A	0.4		0.7	
Threshold Current	I_{th}	mA			70	
Divergence parallel (FWHM)	$\Theta_{\parallel}$	°		8		perpendicular to Pin 2 - Pin 3 - plane
Divergence perpendicular (FWHM)	$\Theta_{\perp}$	°		21		parallel to Pin 2 - Pin 3 - plane
Sidemode Supression Ratio	SMSR	dB	30	45		P_{opt} = 30 mW
Polarization Extinction Ratio	PER	dB		20		P_{opt} = 30 mW; E field perpendicular to Pin 2 - 3 - plane
Spatial Mode (transversal)				TEM_{00}		fundamental mode

Monitor Diode

Parameter	Symbol	Unit	min	typ	max	Measurement Conditions / Comments
Monitor Detector Responsivity	I_{mon} / P_{opt}	µA / mW	0.5		10	U_R = 5 V, target values
Reverse Voltage Monitor Diode	$U_{R\,MD}$	V	3		5	

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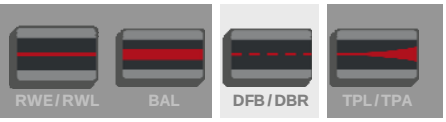
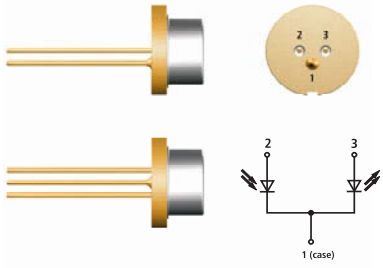


Package Dimensions

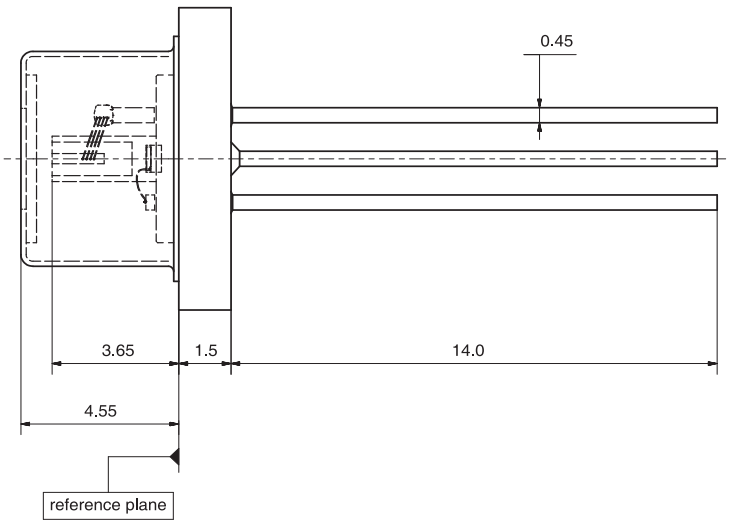
Parameter	Symbol	Unit	min	typ	max	Measurement Conditions / Comments
Height of Emission Plane	d_{EP}	mm	3.50	3.65	3.70	reference plane: top side of TO header
Excentricity of Emission Center	R	mm			0.12	reference: center of outer diameter of header
Pin Length	l_{PIN}	mm		14		

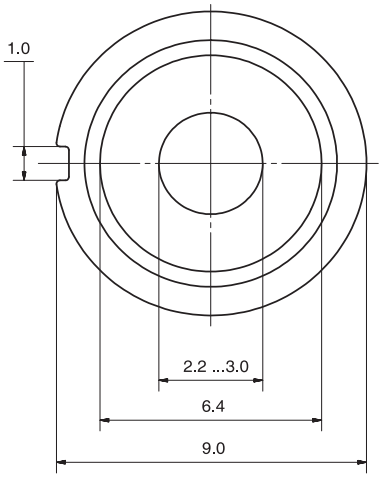
Package Pinout

Ground	1
Photo Diode (+)	2
Laser (+)	3



Package Drawings





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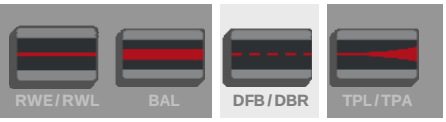
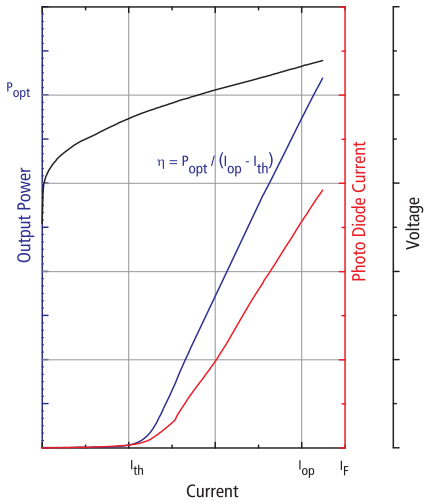
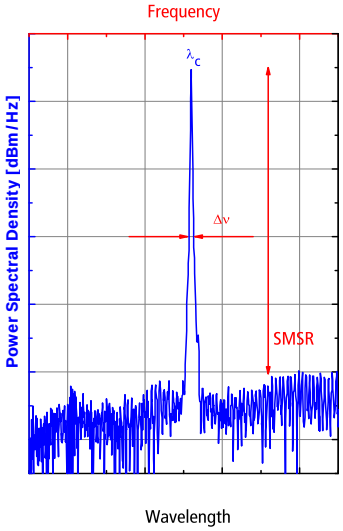


Typical Measurement Results

Output Power vs. Current



Spectra 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.

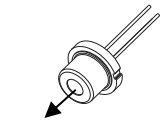
Unpacking, Installation and Laser Safety

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.

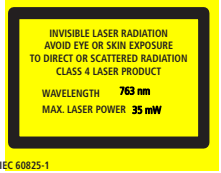
The DFB diode type is known to be sensitive against optical feedback, so an optical isolator may be required in some cases. Operating at moderate temperatures on propper heat sinks willl contribute to a long lifetime of the diode.

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 threat 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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