

DISTRIBUTED FEEDBACK LASERGaAs Semiconductor Laser Diode
with integrated grating structure**PRELIMINARY SPECIFICATION****DFB Laser****EYP-DFB-0760-00040-1500-SOT02-0000****General Product Information**

Product	Application
760 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	-20		75
Forward Current	I _F	mA			110
Reverse Voltage	V _R	V			0
Output Power	P _{opt}	mW			50

Recommended Operational Conditions

	Symbol	Unit	min	typ	max
Temperature at Case	T _{Chip}	°C	15		40
Forward Current	I _F	mA			100
Output Power	P _{opt}	mW	10		40

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

Parameter	Symbol	Unit	min	typ	max
Center Wavelength	λ _c	nm	759	760	761
Spectral Width (FWHM)	Δν	MHz		2	10
Temperature Coefficient of Wavelength	dλ / dT	nm / K		0.06	
Current Coefficient of Wavelength	dλ / dl	nm / mA		0.003	
Output Power @ I _F = 100 mA	P _{opt}	mW	40		
Slope Efficiency	S	W / A	0.6	0.8	1.0



Stress in excess of the Absolute Maximum Ratings can cause permanent damage to the device. Operation at the Absolute Maximum Rating for extended periods of time can adversely affect the device reliability and may lead to reduced operational life.

total output measured with integrated sphere

Measurement Conditions / Comments

see images on page 4

total output measured with integrated sphere

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**PRELIMINARY SPECIFICATION****DFB Laser****EYP-DFB-0760-00040-1500-SOT02-0000****Characteristics at T_{amb} 25 °C at Begin Of Life**

Parameter	Symbol	Unit	min	typ	max
Threshold Current	I_{th}	mA			70
Operational Current @ $P_{opt} = 40$ mW	I_{op}	mA			100
Sidemode Suppression Ratio	SMSR	dB	30	45	
Cavity Length	L	μm		1500	
Divergence parallel	$\Theta_{ }$	$^{\circ}$	6	8	10
Divergence perpendicular	Θ_{\perp}	$^{\circ}$	18	21	24
Polarization				TM	
Spatial Mode (transversal)				TEM_{00}	
Spectral Mode (longitudinal)				Single Mode	

Measurement Conditions / Comments $P_{opt} = 40$ mW

E field perpendicular to Pin 2 - Pin 3 - plane
fundamental mode

Monitor Diode

Parameter	Symbol	Unit	min	typ	max
Monitor Detector Responsivity	I_{mon} / P_{opt}	$\mu\text{A} / \text{mW}$	0.5		5
Reverse Voltage Monitor Diode	U_{RMD}	V	3		5
Monitor Linearity	Lin_{MD}	%	-10		+10

Measurement Conditions / Comments $U_R = 5$ V, target values $P_{opt} = 10 \dots 40$ mW, $U_R = 5$ V

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Package Dimensions

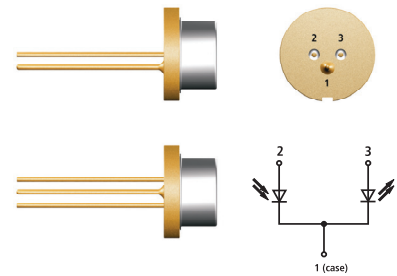
	Symbol	Unit	min	typ	max
Emission Plane	d_{EP}	mm		3.65	
Housing Diameter	d	mm		9	
Pin Length	l	mm		14	

reference plane: top side of TO header

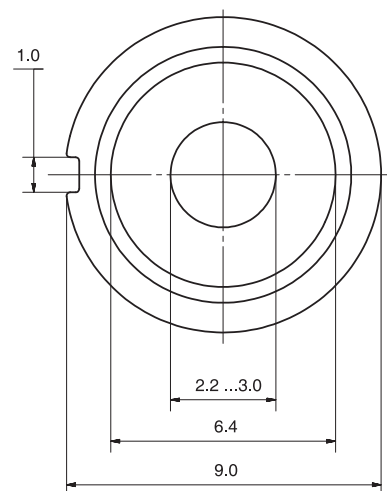
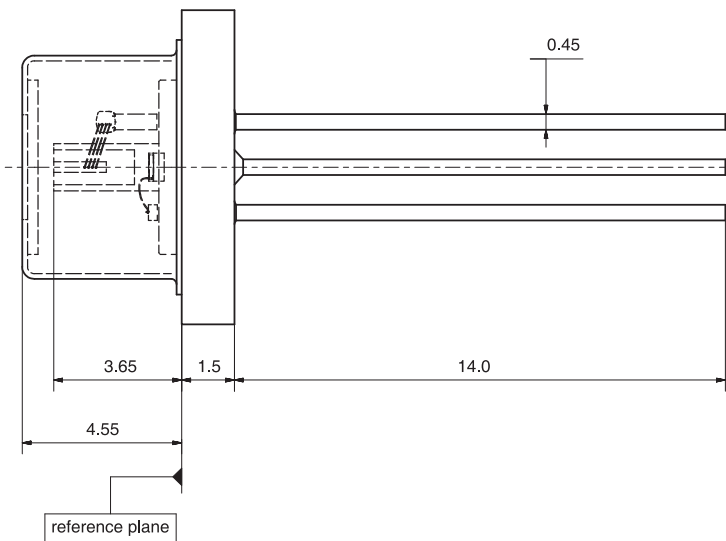
Package Pinout

M-Type

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



Package Drawings



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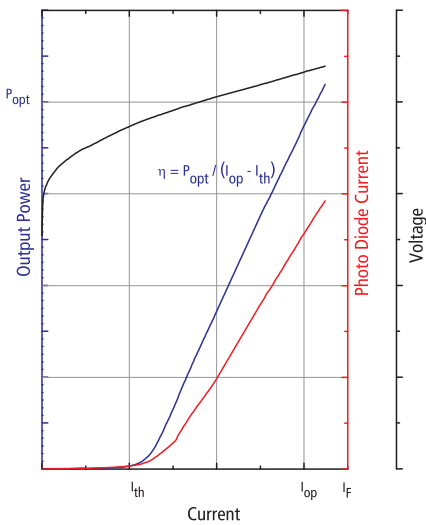
PRELIMINARY SPECIFICATION

DFB Laser

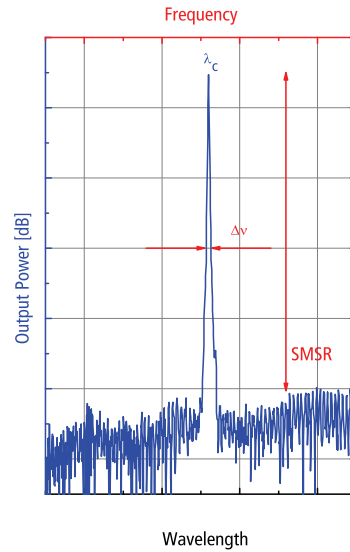
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Typical Measurement Results

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 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.

