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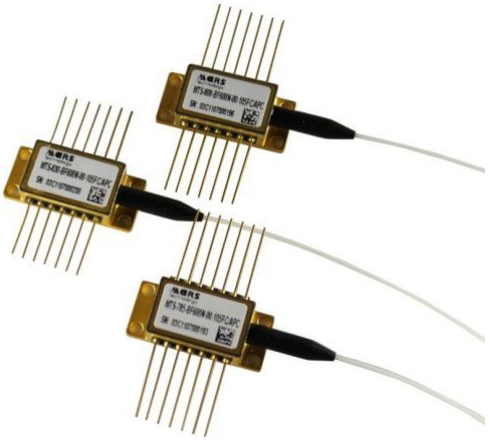

Feathure

633 nm DFB Laser with hermetic Butterfly Housing
Monitor Diode, Thermoelectric Cooler and Thermistor
SM Fiber with angle-polished Connector

Application

Spectroscopy
Metrology
Sensing
HeNe Laser Replacement

Absolute Maximum Ratings

	Symbol	Unit	min	typ	max
Storage Temperature	T_S	°C	-40		85
Operational Temperature at Case	T_C	°C	-20		75
Operational Temperature at Laser Chip	T_{LD}	°C	0		25
Forward Current	I_F	mA			220
Reverse Voltage	V_R	V			2
Output Power	P_{opt}	mW			6
TEC Current	I_{TEC}	A			1.8
TEC Voltage	V_{TEC}	V			3.2

Recommended Operational Conditions

	Symbol	Unit	min	typ	max	Measurement Conditions / Comments
Operational Temperature at Case	T_C	°C	0		50	
Operational Temperature at Laser Chip	T_{LD}	°C	10	15	18	measured by integrated Thermistor
Forward Current	I_F	mA		160	200	
Output Power	P_{opt}	mW		5		ex fiber

Characteristics at TLD = 15 °C at Begin Of Life

Parameter	Symbol	Unit	min	typ	max	Measurement Conditions / Comments
Center Wavelength	λC	nm	632	633	634	see images on page 4
Spectral Width (FWHM)	Dn	MHz		1		
Temperature Coefficient of Wavelength	dλ / dT	nm / K		0.045		
Current Coefficient of Wavelength	dλ / dI	nm / mA		0.001		
Output Power	P_{opt}	mW		5		ex fiber

Characteristics at Tamb 15 °C at Begin Of Life cont'd

Parameter	Symbol	Unit	min	typ	max	Measurement Conditions / Comments
Slope Efficiency	S	W / A		0.2		
Threshold Current	I_{th}	mA		80		
Sidemode Supression	SMSR	dB	3			

Monitor Diode

Parameter	Symbol	Unit	min	typ	max	Measurement Conditions / Comments
Monitor Detector Responsivity	I_{mon} /P_{opt}	µA/mW	5		200	U_R = 5 V
Reverse Voltage Monitor	$U_{R\ MD}$	V	3		5	

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Thermoelectric Cooler

Parameter	Symbol	Unit	min	typ	max	Measurement	Conditions
Current	ITEC	A		0.4		Popt = 5 mW,	DT = 20 K
Voltage	UTEC	V		0.8		Popt = 5 mW,	DT = 20 K
Power Dissipation (total loss at case)	Ploss	W		0.5		Popt = 5 mW,	DT = 20 K
Temperature Difference	DT	K			50	Popt = 5 mW,	DT = I Tcase - TLD I

Thermistor (Standard NTC Type)

Parameter	Symbol	Unit	min	typ	max	Measurement Conditions / Comments
Resistance	R	kW		10		
Beta Coefficient	b			3892		

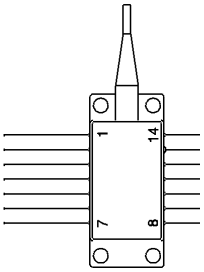
Fiber and Connector Type

SM Fiber 125 / 4.5 µm (l = 1 +/-0.1 m)

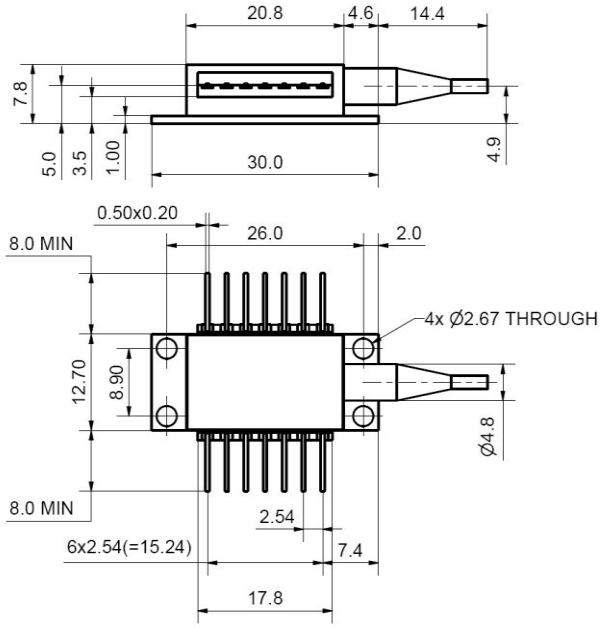
Connector FC/APC (narrow key / 2mm)

other types on request

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

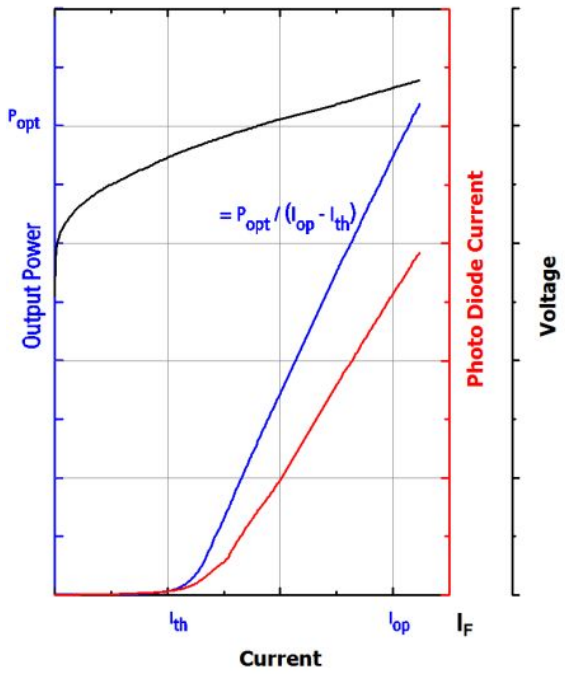


Package Drawings

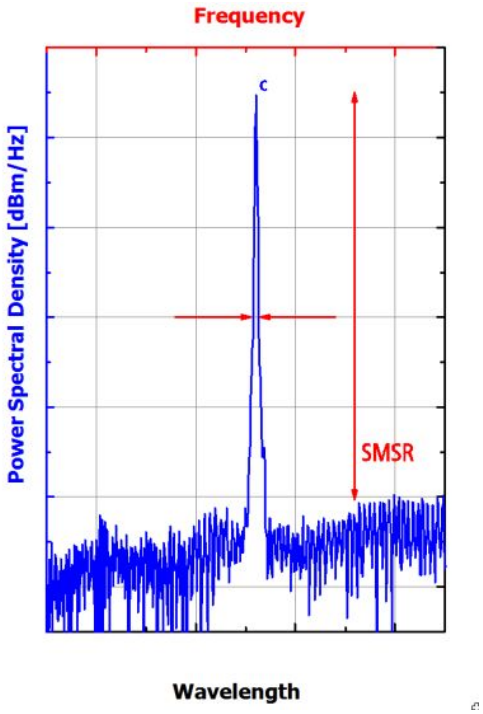


recommended min. bending radius: 30 mm
hermetically sealed Package:
Leak Rate < 5 . 10-8 atm.cc./s
acc. MIL-STD-883E

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.