

Discrete Mode Laser Diode EP780-DM-B



The EP780-DM-B laser diode module is a cost effective, highly coherent laser source. The patented discrete mode (DFB-like) ridge waveguide technology and epistructure design is used to deliver an InP-based strained quantum-well laser diode source emitting at a wavelength of 780nm with high SMSR. The Discrete Mode laser diode chip is packaged in an industry standard, hermetically sealed 14 pin butterfly package with integrated optical isolator, thermo-electric cooler (TEC) and thermistor.

Key Features

Excellent Reliability
Mode-Hop Free Tuning >2nm
Integrated Optical Isolator
Narrow Linewidth ~3MHz

Applications

Rb-based Atomic Clocks
Custom Applications

Optical and Electrical Characteristics: (T = 25°C)

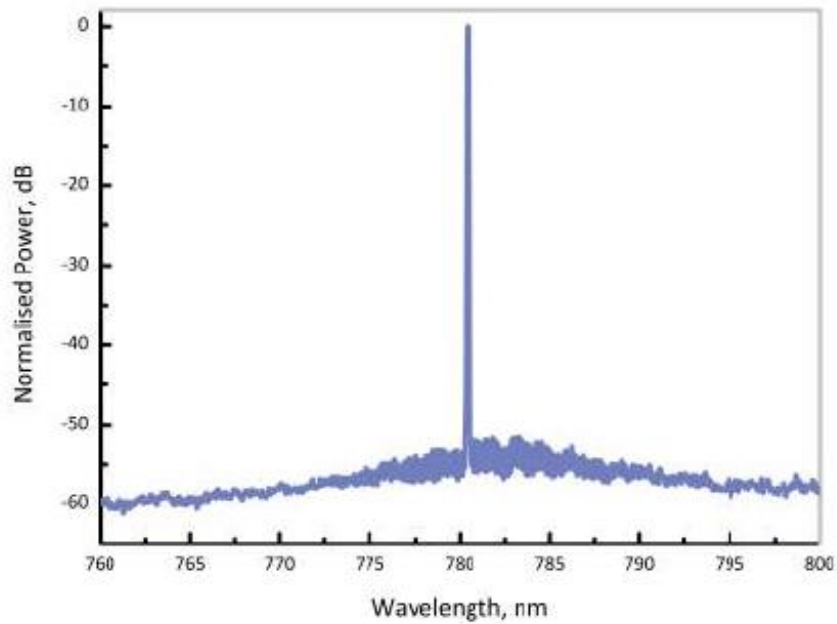
PARAMETER	SYMBOL	MIN	TYP	MAX	UNIT
LASER DIODE					
Output Power in Fibre	P_f	2	4	-	mW
Centre Wavelength	λ_{cen}	776	780	784	nm
Threshold Current	I_{th}	-	60	-	mA
Operating Current	I_{op}	-	-	150	mA
Forward Voltage	V_f	-	-	2.5	V
Reverse Voltage	V_r	-	-	2	V
Spectral Width (FWHM)	Δv	-	3	4	MHz
Side Mode Suppression Ratio	SMSR	30	40	-	dB
Temperature Tuning Coefficient		-	0.06	-	nm/K
Current Tuning Coefficient		-	6	-	pm/mA
Slope Efficiency	η	0.05	0.07	-	mW/mA

PARAMETER	SYMBOL	MIN	TYP	MAX	UNIT
THERMISTOR					
Thermistor Resistance	R _T	9.5	10	10.5	kW
Thermistor Temp. Coefficient		-	-4.4	-	%/°C
Thermoelectric Cooler					
TEC Forward Current	I _C	-	-	1.2	A
FIBER					
Type	-	SM or PM*			
Core/Cladding Diamter	D _C /D _{Cl}	-	9/125	-	μm
Length	L	0.5	-	-	m
Optical Connector	-	FC/APC, FC/PC others available on request			
TEMPERATURE					
Operating Case Temperature	T _{case}	-20	-	65	°C
Chip Submount Temperature	T _{sub}	-	-	50	°C
Storage Temperature	T _{sta}	-40	-	85	°C

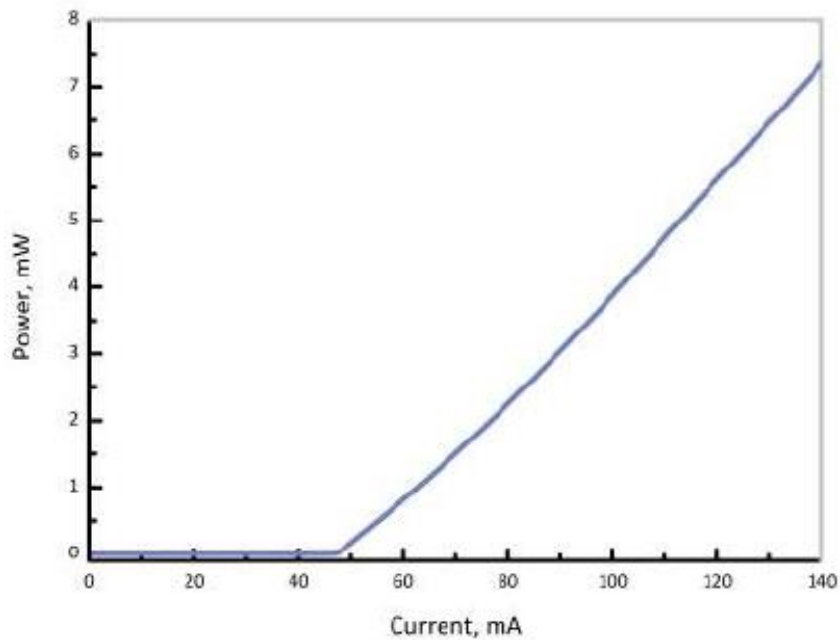
* Need to be specified

TYPICAL PERFORMANCE

Typical Optical Spectrum at 25 °C

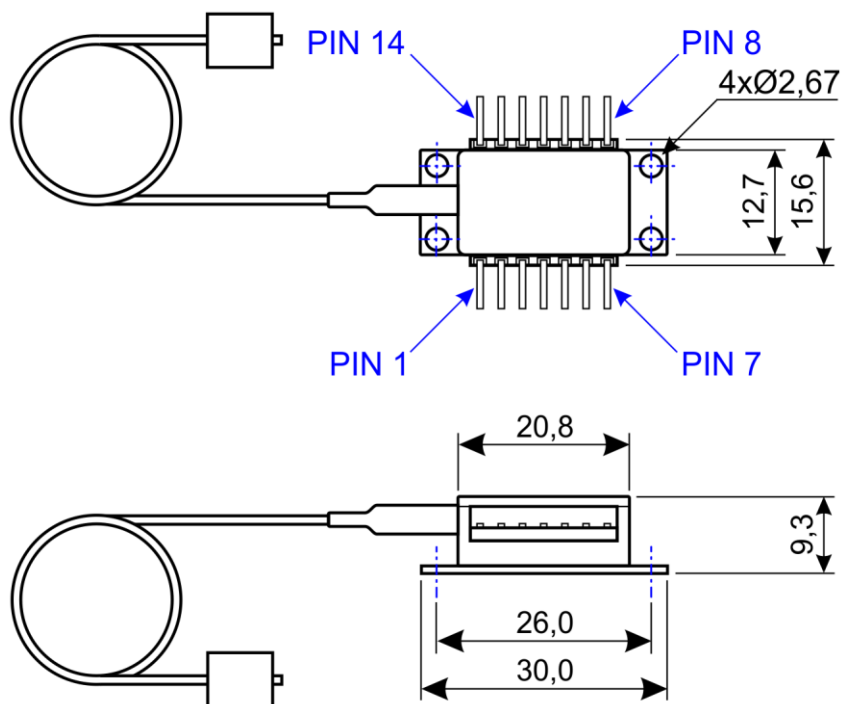


Power vs. Operating Current



Package Specification

Housing Drawing



Pin No.	Pin Information
1	Thermistor
2	Thermistor
3	Laser cathode
4	NC
5	NC
6	Thermoelectric cooler +
7	Thermoelectric cooler -
8	Case ground
9	Case ground
10	NC
11	Laser anode
12	Laser cathode
13	Laser anode
14	NC