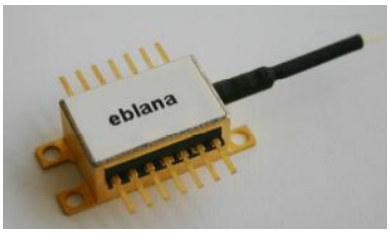
Discrete Mode Laser Diode
EP689-DM-BC - Preliminary



The EP689-DM-BC 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 689nm with high SMSR. The Discrete Mode laser diode chip is packaged in an industry standard, hermetically sealed 14 pin butterfly package with thermo-electric cooler (TEC) and thermistor.

Key Features

Excellent reliability
Mode-Hop free tuning >2nm

Applications

TDLAS-based gas sensing
Strontium (Sr)

Optical and electrical characteristics: (T = 25°C)

PARAMETER	SYMBOL	MIN	TYP	MAX	UNIT
LASER DIODE					
Output Power in Fibre	P_f	5	10	-	mW
Centre Wavelength	λ_{cen}	689	691	695	nm
Threshold Current	I_{th}	-	80	-	mA
Operating Current	I_{op}	-	-	150	mA
Forward Voltage	V_f	-	-	2.5	V
Side Mode Suppression Ratio	SMSR	30	35	-	dB
Temperature Tuning Coefficient		-	0.1	-	nm/K
Current Tuning Coefficient		-	6	-	pm/mA
Slope Efficiency	SE	-	0.3	-	mW/mA

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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	9/125	9/125	9/125
Length	L	-	-	-	-
Optical Connector	-	FC/PC or FC/APC* others available on request			

* Need to be specified

Absolute Maximum Ratings (T_{sub}= 25°C)

Parameter	**Symbol**	**Ratings**	**Units**
Laser diode forward current	I_F	150	mA
Laser diode forward voltage	V_R	2.5	V
Laser diode reverse voltage	V_R	2	V
TEC current	I_{TEC}	1.2	A
Operating case temperature	T_{case}	-20 to 65	°C
Chip submount temperature	T_{sub}	0 to 50	°C
Storage temperature	T_{stg}	-40 to 85	°C

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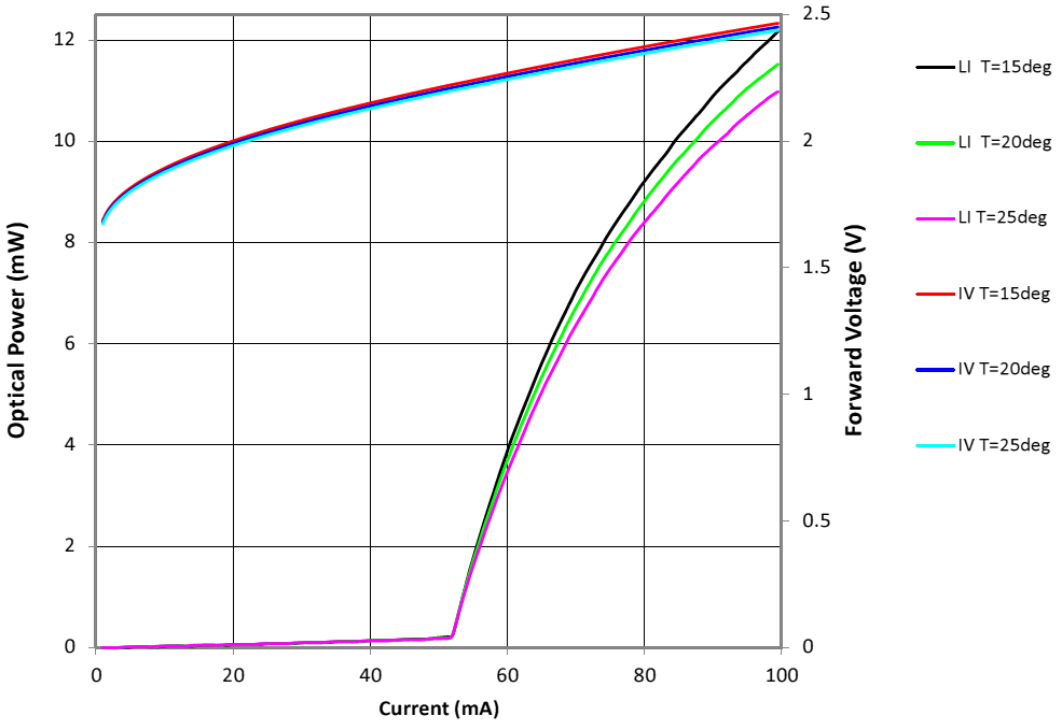
TYPICAL PERFORMANCE

Power vs. Operating Current (T = 25 °C)



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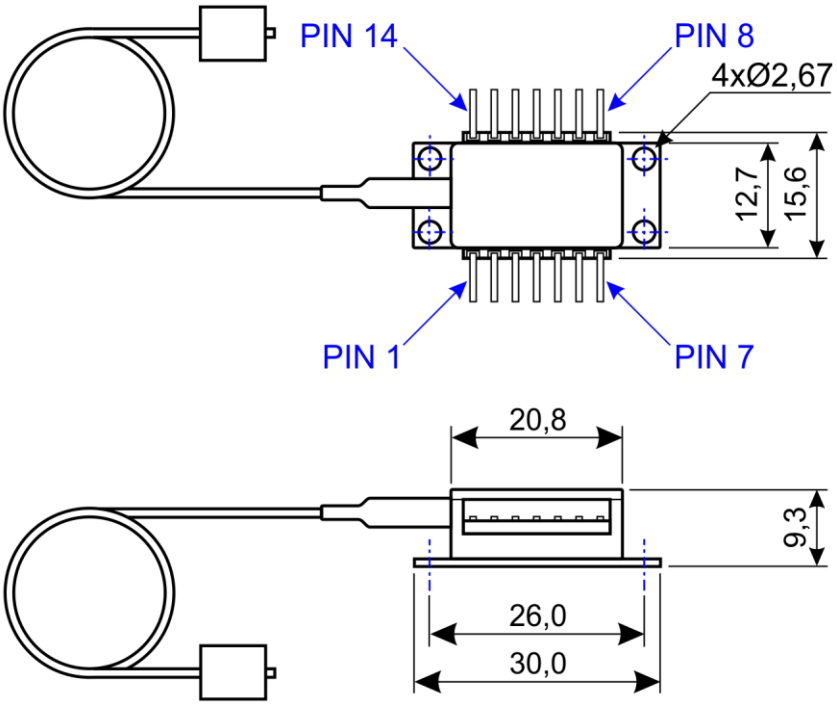
Package Specification

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

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