



HBFC976P140W-S

976nm 140W Wavelength Stabilized Fiber Coupled Laser Diode

Overview

The HBFC976P140W-S laser diode is a 976nm wavelength, fiber coupled single emitter based with VBG laser diode that offers high brightness with up to 140W of optical power output with a 105um core multimode optical fiber. Idea for applications in fiber laser pumping, solid state laser pumping, Raman laser pumping, direct diode material processing, biomedical.

Features

- Single emitter-based with volume Bragg grating (VBG) laser diode module
- Extremely narrow wavelength shift over wide current and temperature range
- 976nm wavelength
- 140W CW output power
- 0.22NA, 105um fiber core diameter

Applications

- Direct diode material processing
- Fiber laser pumping
- Biomedical
- Solid state laser pumping
- Raman laser pumping

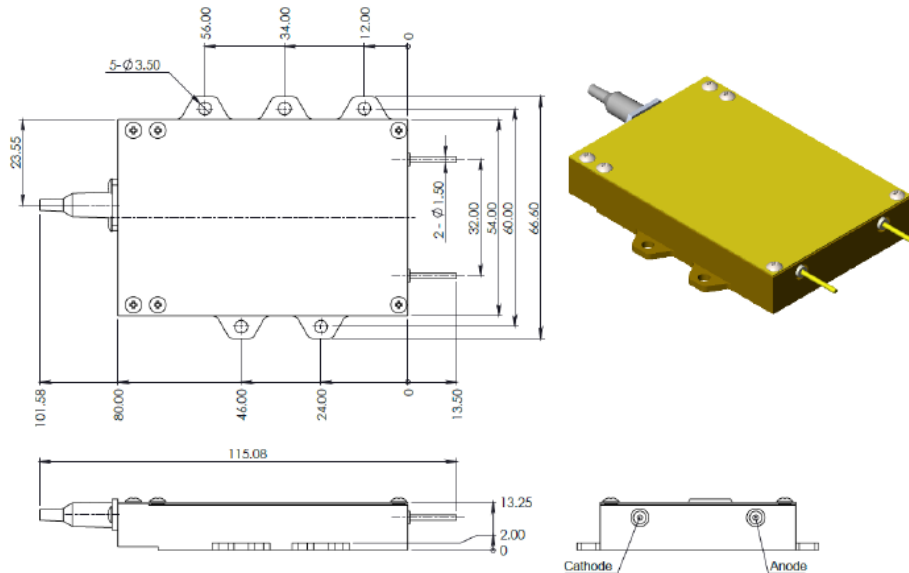
Specifications

OPTICAL CHARACTERISTICS ($T_{OP} = 25^{\circ}C$)					
PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT
Output power	P_o	140			W
Center wavelength	λ_c	975	976	977	nm
Spectral width (FWHM)	$\Delta\lambda$		0.3		nm
Wavelength shift with current	$\Delta\lambda/\Delta A$		0.03		nm/A
Core diameter	D_{core}		105		um
NA	NA		0.22		
Cladding diameter	D_{clad}		125		um

ELECTRICAL CHARACTERISTICS ($T_{OP} = 25^{\circ}C$)					
PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT
Electrical-to-optical efficiency	PE		48		%
Threshold current	I_{th}		0.55		A
Operating current	I_{op}		12.5		A
Operating voltage	V_{op}		23.3		V
Slope efficiency	η		11.7		W/A
Wavelength stabilized operating current	-	1		13.5	A

THERMAL CHARACTERISTICS ($T_{OP} = 25^{\circ}C$)					
PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT
Case operating temperature	T_{op}	25		30	$^{\circ}C$
Storage temperature	T_{stg}	-20		70	$^{\circ}C$
Spectral temperature shift	$\Delta\lambda/\Delta T$		0.02		nm/ $^{\circ}C$

Outline Dimensions (unit: mm)



Additional Notes

- The HBFC976P140W-S laser diodes are designated solely as OEM components for incorporation into the customer's end products. Therefore, it is the customer's responsibility to comply with the appropriate requirements of FDA 21CFR, section 1040.10 and 1040.11 for complete laser products. For the code of FDA regulations, please refer to [FDA Performance Standards for Light-Emitting Products](#) for detailed information.
- Avoid eye and skin exposure to direct radiation during operation.
- ESD precautions must be taken during storage, transportation and operation. For ESD precaution, short-circuit is required between pins during storage and transportation.
- Soldering point should be close to the root of the pins. Soldering temperature should be lower than 260°C and time shorter than 10 seconds. Use a transformer to reduce the secondary voltage and ground the tip of the soldering iron.
- Make sure that the fiber output end is properly cleaned before operation of laser. Follow safety protocols to avoid injury when handling and cutting the fiber.
- Specifications are subject to change without notice.