Laser Diodes

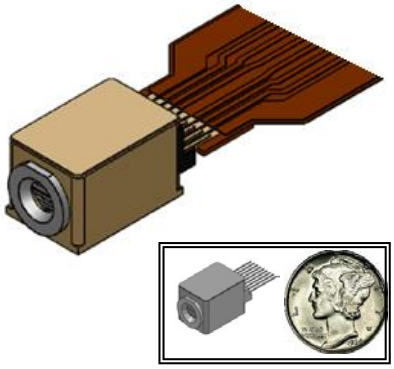
Photodigm

LASER COMPONENTS

March, 2014

PRODUCT BULLETIN

895nm Mercury™ Series
High-Power Single-Frequency Laser Diode
PH895DBRXXXTS



Technology

- DBR Single-Frequency Laser Chip
- AlGaAs QW Active Layer

Features

- Robust, monolithic die design
- Pulsed operation for spectral stability at short pulse lengths
- Package contains TEC cooling with precise thermistor control
- High Slope Efficiency
- Hermetic package for high reliability

Description

The 895nm Mercury™ series of high-power edge-emitting lasers are based on Photodigm's advanced single-frequency laser technology. It provides a diffraction limited, single lateral and longitudinal mode beam in a compact hermetic package. Facets are passivated for high-power reliability. Applications include mobile spectroscopy instrumentation where durability and reliability are essential.

Absolute Maximum Ratings

Parameter	Symbol	Unit	Min	Max
Storage Temperature	T_{STG}	°C	0	80
Operating Temperature	T_{OP}	°C	5.0	70
CW Laser Forward Current, T=25°C	I_F	mA	-	**
Laser Reverse Voltage	V_R	V	-	0.0
TEC Current	I_{TEC}	A	-1.1	1.1
TEC Voltage	V_{TEC}	V	-3.0	3.0
Thermistor Current	I_{THRM}	mA	-	1.0
Thermistor Voltage	V_{THRM}	V	-	10

**Do not exceed drive current or operating power of supplied LIV

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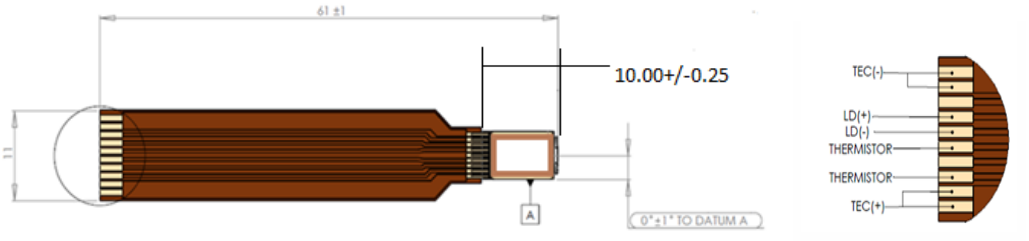
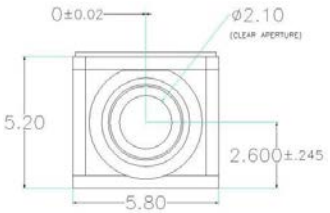
CW Characteristics at T_C = 25°C unless otherwise specified

Parameter	Symbol	Unit	Min	Typ	Max
Center Wavelength @ 150mA	λ_c	nm	893	895	897
Optical Output Power	P_o	mW	See Power Options Call-out		
Slope Efficiency	η_d	W/A	0.6	0.75	-
Threshold Current	I_{th}	mA	-	50	80
Laser Series Resistance	R_S	Ω	-	2.0	2.5
Laser Forward Voltage @ 150mA	V_F	V	-	2.0	2.5
Thermistor Resistance @ 25°C	R_T	KΩ	-	10	-
Laser Line Width	Δv	MHz	-	1	10
Beam Divergence @ FWHM	θ_{II} X $\theta_{\perp}$	°	-	6 X 28	8 X 32
Side Mode Suppression Ratio	SMSR	dB	-30	-	-
Laser Polarization				TE	
Mode Structure			Fundamental Mode		





Dimensions in mm

1. Hermeticity: < $5X10^{-8}$ $ATM_{(He)}$cc/sec
2. Window: Sapphire coated with AR both sides, 700nm-1100nm >90% transmission
3. LD facet to outer surface of window holder is 1.3mm typical
4. LD is centered to package (not window)
5. Package base is W85CU15
6. Final finish: 60µ" of Au over 100µ" Ni
7. Module is supplied with 2" flex interconnect (FPC). FPC will interface to Molex connector PN522071060. Custom FPC is optional.

How To Order

Part number example: PH895DBR080TS. Assign optical power from those available. Use a three-digit format for all power entries. These devices are sensitive to ESD.

PH895DBR___TS

Typical Power (mW)

040	180
080	240
120	280

Photodigm, Inc. reserves the right to make changes in design, specifications and other information at any time, and without prior notice. The information contained within the product bulletin is believed to be accurate. However, no responsibility is assumed for possible inaccuracy or omission.

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