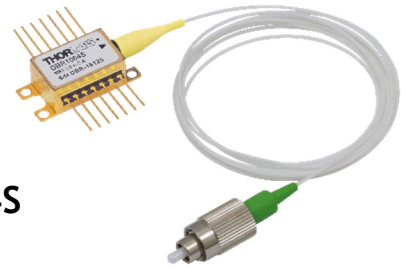
1064 nm Pigtailed DBR Laser Diode, 40 mW



DBR1064S

Description

Thorlabs' DBR1064S Distributed Bragg Reflector (DBR) laser is a single-frequency laser diode that is well-suited for fiber amplifier seeding, second harmonic generation, gain switching, and low-noise pump applications. The DBR1064S includes an integrated optical isolator, thermo-electric cooler (TEC), thermistor, and monitor photodiode. It is packaged in a 14 pin butterfly package with HI1060 single mode optical fiber and an FC/APC connector.

Specifications

DBR1064S	
LD Reverse Voltage (Max)	2 V
Absolute Max Current	200 mA
Absolute Max Power	75 mW
PD Reverse Voltage (Max)	15 V
Operating Temperature	0 to 50 °C
Storage Temperature	-10 to 65 °C

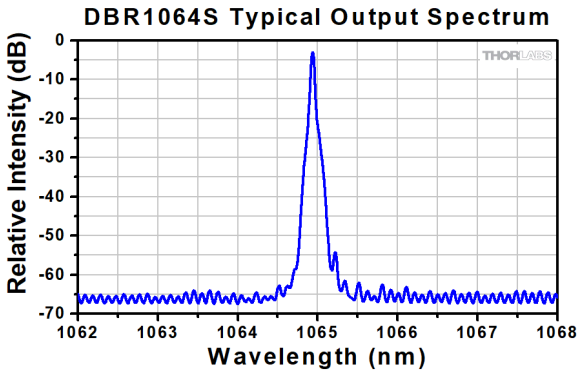
T_{CHIP} = 15 – 35 °C, T_{BASE} = 25 °C, I_{OP} = 150 mA

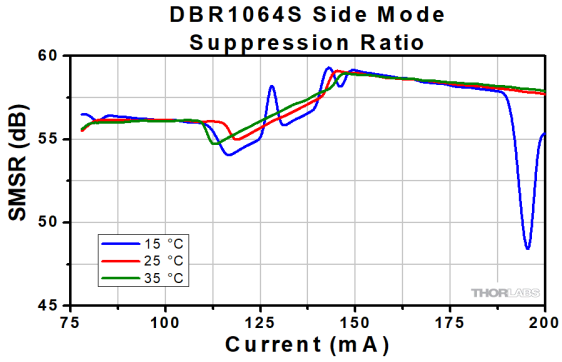
DBR1064S				
	Symbol	**Min**	**Typical**	**Max**
Center Wavelength[a]	λ_C	1062 nm	1064 nm	1066 nm
Laser Linewidth	Δv	-	5 MHz	-
Output Power CW @ I_{OP}[a]	P_{OP}	20 mW	40 mW	-
Operating Current	I_{OP}	-	150 mA	200 mA
Mode Hop Free Range[b]	$\Delta I_{Mode\text{-}Hop\text{-}Free}$	20 mA	50mA	-
SMSR in Mode Hop Free Range	SMSR	30 dB	50 dB	-
Threshold Current	I_{TH}	-	35 mA	-
Forward Voltage[a]	V_F	-	2.0 V	2.5 V
Slope Efficiency	ΔP/ΔI	-	0.25 W/A	-
Current Tuning @ I_{OP}	Δλ/ΔI	-	0.002 nm/mA	-
Temperature Tuning @ I_{OP}	Δλ/ΔT	-	0.08 nm/°C	-
Monitor Diode Responsivity @ I_{OP}	I_{MON}/P	-	10 µA/mW	-
Internal Isolator Isolation	ISO	-	25 dB	-

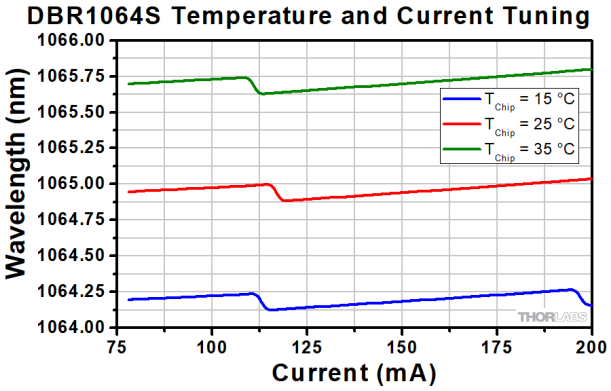
a. T_{CHIP} = 25C.
b. Continuous tuning range between mode hops.

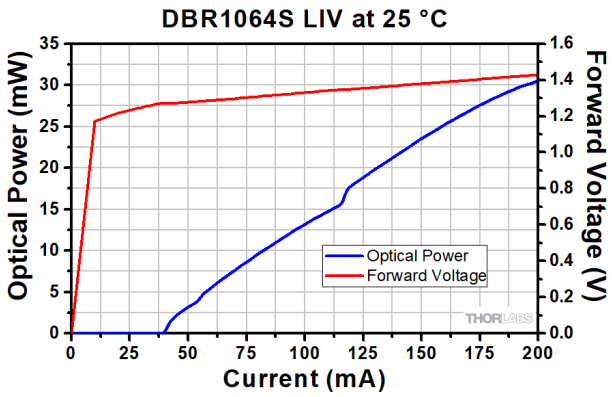
DBR1064S TEC Operation				
	Symbol	Min	Typical	Max
TEC Current	I_{TEC}	-	0.1 A	1.5 A
TEC Voltage	V_{TEC}	-	2.8 V	4.0 V
Thermistor Resistance @ 25 °C	R_{TH}	-	10 kΩ	-

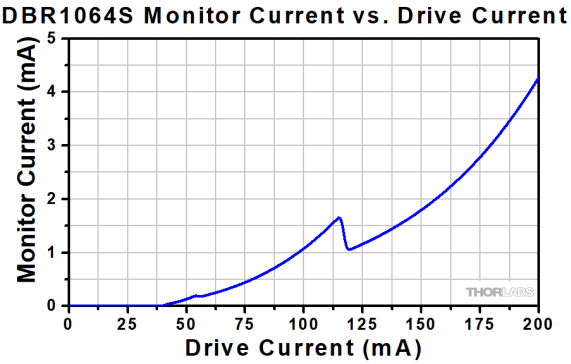
Typical Performance Plots



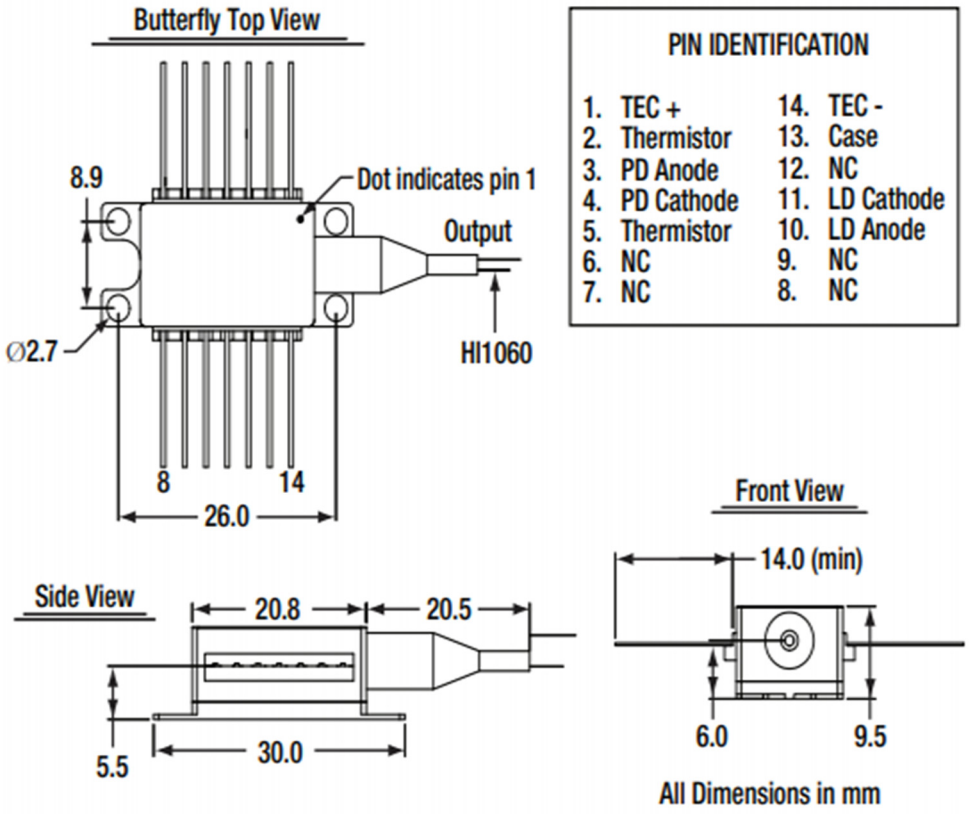








Drawings



PIN IDENTIFICATION			
1.	TEC +	14.	TEC -
2.	Thermistor	13.	Case
3.	PD Anode	12.	NC
4.	PD Cathode	11.	LD Cathode
5.	Thermistor	10.	LD Anode
6.	NC	9.	NC
7.	NC	8.	NC