

## 1642 nm, 80 mW (Min) DFB TO-56 Diode Laser

DFB1642T



### Description

Thorlabs' DFB1642T Distributed Feedback (DFB) laser is a 1642 nm, 80 mW (min) single-frequency laser. The DFB1642T laser is packaged in a TO-56 package with E-pin configuration, and is designed for high power, single-frequency operation at multiple temperatures. It is a low-noise pump source for near infrared spectroscopy (NIRS), telecommunication, LIDAR, and general sensing.

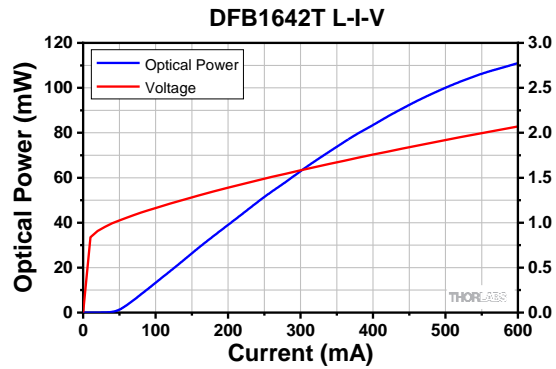
### Specifications

DFB1642T; TCase = 25 °C				
	Symbol	Min	Typical	Max
Center Wavelength	$\lambda_c$	1639 nm	1642 nm	1645 nm
Laser Linewidth	$\Delta\nu$	-	150 kHz	-
Output Power CW @ $I_{OP}$	$P_{OP}$	80 mW	100 mW	-
Operating Current	$I_{OP}$	-	500 mA	600 mA
Mode-Hop-Free Operating Current <sup>a</sup>	$\Delta I_{\text{Mode-Hop-Free}}$	250 mA	-	-
SMSR in Mode-Hop-Free Range <sup>b</sup>	SMSR	30 dB	50 dB	-
Threshold Current	$I_{TH}$	-	45 mA	-
Forward Voltage	$V_F$	-	1.8 V	1.9 V
Slope Efficiency	$\Delta P / \Delta I$	-	0.20 W/A	-
Current Tuning	$\Delta \lambda / \Delta I$	-	0.008 nm/mA	-
Temperature Tuning	$\Delta \lambda / \Delta T$	-	0.10 nm/°C	-

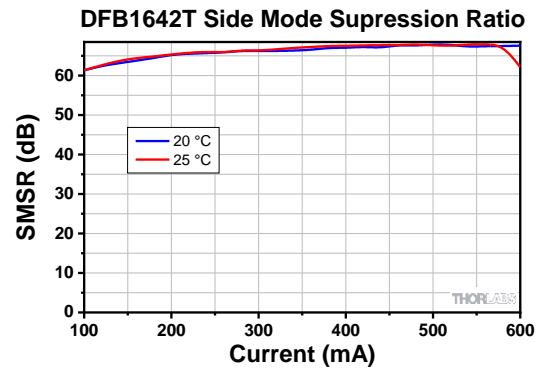
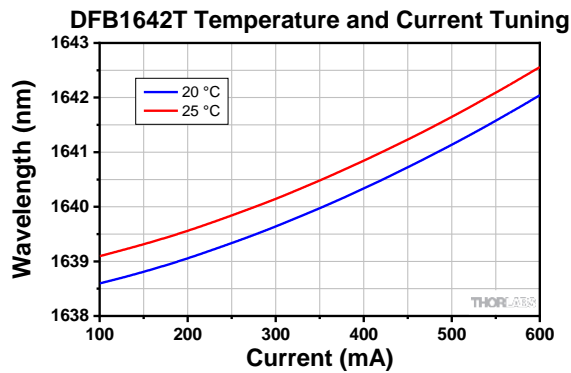
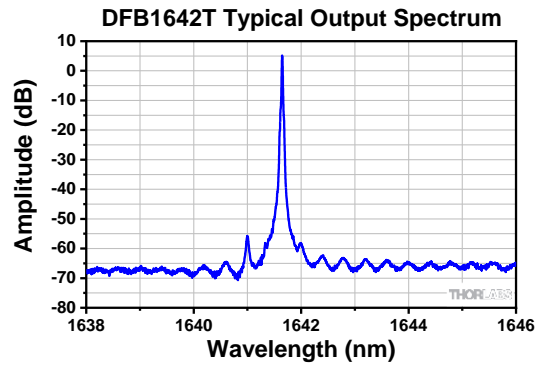
- Continuous tuning range above this value where mode-hops are not observed.
- As measured with an optical spectrum analyzer (OSA) with spectral resolution of 0.02 nm to empirically determine single frequency range. Laser 30 dB bandwidth and SMSR are subject to monochromator settings and OSA internal algorithms and will differ from instrument to instrument.



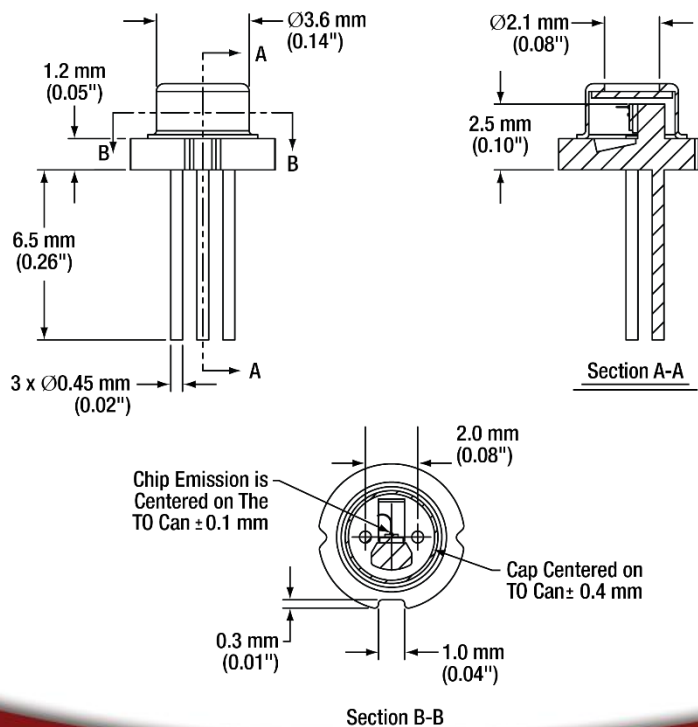
## Typical Performance Plots



Measured at 25 °C



## Drawings



March 17, 2025

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