

TLB-2020-L

20 mW Full Band Tunable CW Laser Butterfly

Full C Band Tunable CW Laser

Features

- Wide tuning range using highly reliable DFB laser arrays
- Excellent wavelength stability with no possibility of mode hop
- CW output power of 20 mW
- Polarization Maintain Fiber

Applications

- 1550 nm widely tunable DFB source for DWDM systems
- Large form factor full band tunable transponders

Benefits

- DFB laser performance
- Simple control loops for tunable laser

*The **TLB-2020-L** is the second generation of compact 20 mW widely tunable transmission lasers built with Santur's own proprietary DFB laser array, MEMs coupling and packaging technology. Santur's technology provides for a highly efficient, small form factor full band tunable butterfly with the lowest power dissipation in the industry.*

*Ideally suited for use in a wide variety of DWDM Metro and LH systems, the Santur **TLB-2020-L** provides the best combination of performance features available, offering a unique combination of optical power, wide tunability, and low power dissipation. The **TLB-2020-L** includes an integrated wavelength locker and a uniquely stable DFB laser array.*

High-power performance, reliability, ease of control, and economies of scale derived from the exclusive, proven technology, differentiate this product from others in the industry.



TLB-2020-L-DS

This is a technical data sheet – parameters are subject to change without notice.

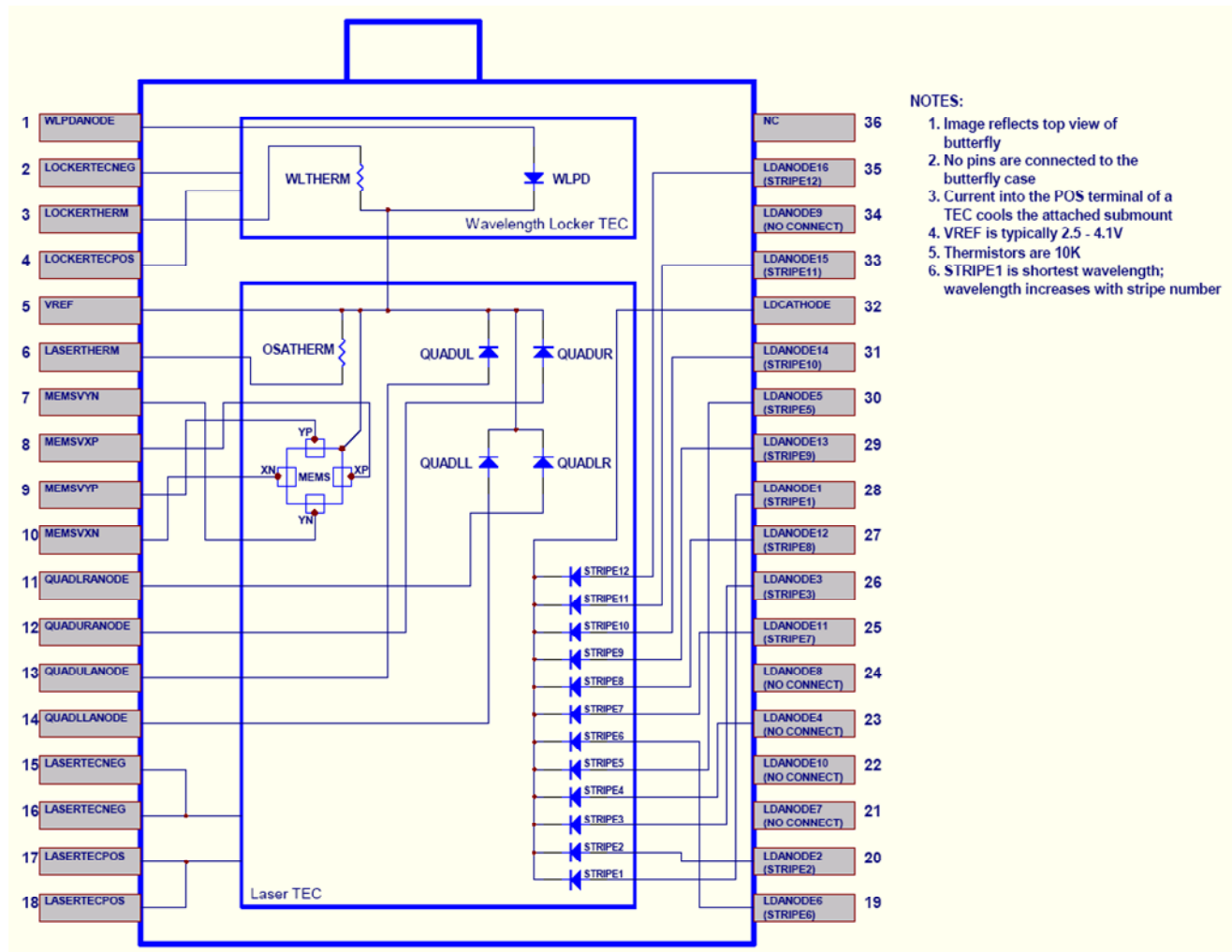
Specifications:

Absolute Maximum Ratings						
#	Parameter	Symbol	Min.	Max.	Unit	Comments
1	Storage temperature	T_{stg}	-40	85	C	
2	Laser diode reverse voltage	V_{R_max}		2	V	
3	Laser diode forward current	I_{f_max}		400	mA	
4	Etalon photodiode reverse voltage	V_{EPD_max}		10	V	
5	Etalon photodiode reverse current	I_{EPD_max}		3	mA	
6	Quad detector reverse voltage	V_{quad_max}		5	V	
7	Quad detector reverse current	I_{quad_max}		3	mA	
8	MEMS X voltage	$V_{MEMS\ X_max}$		210	V	
9	MEMS Y voltage	$V_{MEMS\ Y_max}$		175	V	
10	MEMS current	I_{MEMS_max}		100	μ A	
11	Laser TEC current	I_{OSATEC_max}		3	A	
12	Locker TEC current	I_{WLTEC_max}		1.5	A	
13	Lead Soldering			250C, 5sec		
14	Electrostatic discharge (ESD)	V_{ESD}		500	V	C=100pF, R=1.5k Ω , Human Body Model

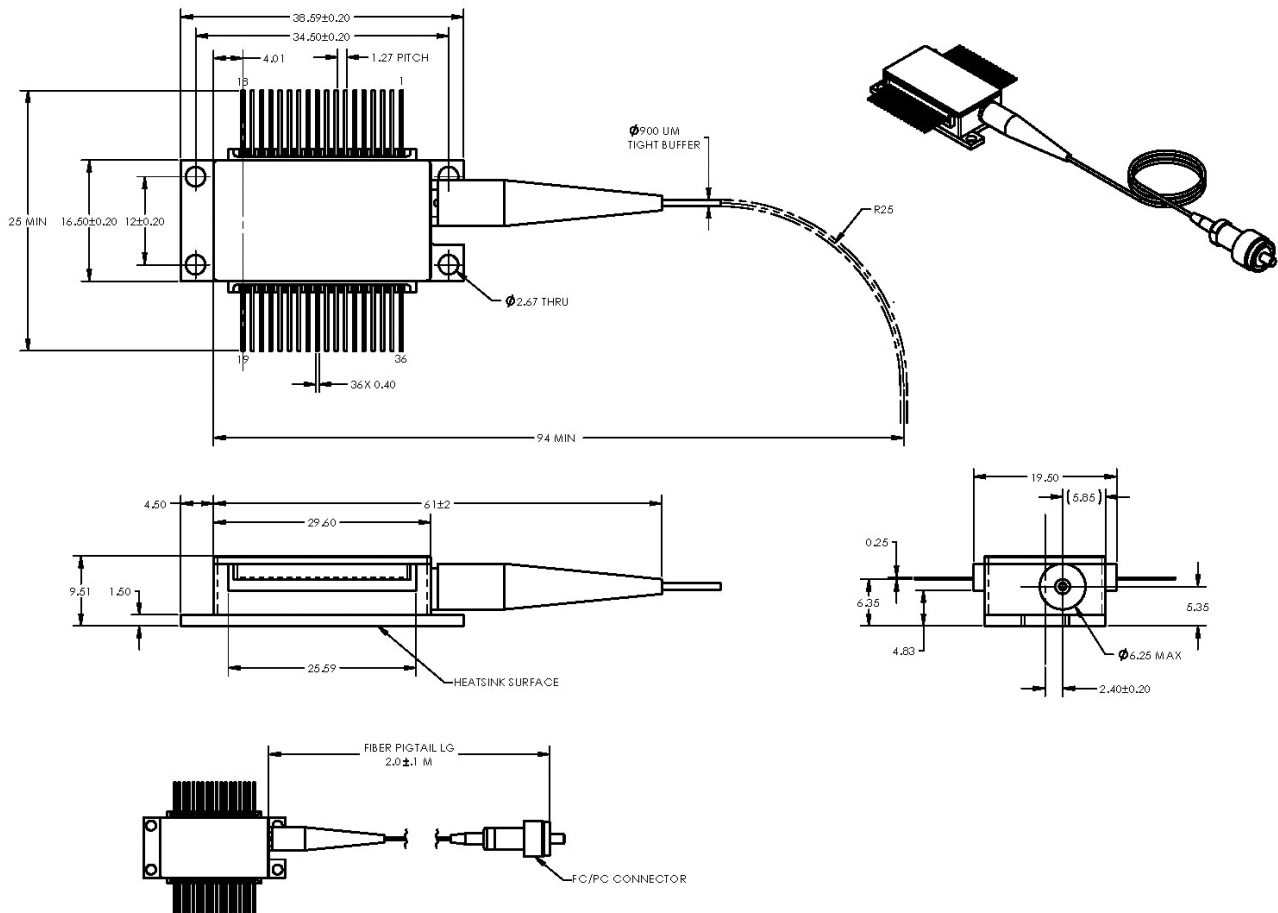
#	Parameter	Symbol	Test Condition	Min.	Typical	Max.	Unit
1	Fiber-coupled power	P_{op}	CW		20		mW
2	Wavelength range	λ_{min}		1565		1605	nm
4	Total Tuning Range			40			nm
5	Laser Set Temperature	T_{set}		15		60	C
6	Case Temperature	T_{case}	TEC Active	-5	-	75	C
7	Power variation over case temp			-0.5		0.5	dBm
8	Laser Forward Current @ rated power	I_{op}	-	-	-	350	mA
9	Laser Forward Voltage @ rated power	V_{op}	-	-	-	2.5	V
10	Threshold Current	I_{th}	-	-	65	-	mA
11	Spectral Width	$\Delta\lambda$	FWHM	-	2	5	MHz
12	Side-mode Suppression Ratio	SMSR	-	40	50	-	dB
13	Relative Intensity Noise	RIN	20 MHz to 10 GHz	-	-143	-135	dB/Hz
14	Extinction Ratio	TE/TM	-	20	-	-	dB
15	Optical Isolation	ISO	-	30	35	-	dB
16	MEMS X Voltage	V_{xp}, V_{xn}	200 BOL	-	-	205	V
17	MEMS Y Voltage	V_{yp}, V_{yn}	-	-	-	170	V
18	MEMS X snapdown Voltage*	$V_{x snap}$	-	$ V_{x cal} + 10$	-	-	V
17	Laser TEC Current	I_{TEC}	-	-	-	2.1	A
18	Laser TEC Voltage	V_{TEC}	-	-	-	2.75	V
19	Laser Thermistor Resistance	R_{TH}	@ 25 C	9.5	10	10.5	k Ω
20	Locker TEC Current	I_{TEC}	-	-	-	0.75	A
21	Locker TEC Voltage	V_{TEC}	-	-	-	1.25	V
22	Locker Thermistor Resistance	R_{TH}	@ 25 C	9.5	10	10.5	k Ω
23	Etalon max/min ratio			2			
24	Total quad detector photocurrent				1		mA
25	Peak etalon photodiode photocurrent				0.04		mA
26	Pigtail Length	L		1			m
27	Connector Type				FC/UPC		
29	Power Dissipation	P_{dis}	70 C			3.8	W

Pin Assignment

Pin	Description	Pin	Description	Pin	Description	Pin	Description
1	Locker PD anode	10	MEMs V_{xn}	19	LD Anode (+) 6	28	LD Anode (+) 1
2	Locker TEC (-)	11	Quad LR Anode	20	LD Anode (+) 2	29	LD Anode (+) 13
3	Locker Therm. (+)	12	Quad UR Anode	21	NC	30	LD Anode (+) 5
4	Locker TEC (+)	13	Quad UL Anode	22	NC	31	LD Anode (+) 14
5	MEMs/Qu/Th GND	14	Quad LL Anode	23	LD Anode (+) 4	32	LD Ground
6	Laser Therm. (+)	15	Laser TEC (-)	24	NC	33	LD Anode (+) 15
7	MEMs V_{yn}	16	Laser TEC (-)	25	LD Anode (+) 11	34	NC
8	MEMs V_{xp}	17	Laser TEC (+)	26	LD Anode (+) 3	35	LD Anode (+) 16
9	MEMs V_{yp}	18	Laser TEC (+)	27	LD Anode (+) 12	36	NC



Mechanical Outline:



dimensions are in millimeters.

Connector is Samtec CLM-118-02 style.

Connection to customer system is via mating Samtec FTM-118-03 or custom flex jumper.



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This is an OEM product that does not comply with the requirements of 21 CFR Subchapter I as applicable. It is the responsibility of the user to report the end product and to certify that it meets all applicable requirements.



DANGER: Fiber output is >10 mWatt at 1555 nm.
Do not look into fiber end.

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