



1653nm Laser Components

The SBF-X-653XX-XXX is a series of ultra narrow linewidth laser designed for applications in optical metrology & instrumentation and optical gas & chemical sensing, requiring narrow spectral linewidth, excellent SMSR, power stability, and a very highly wavelength stable laser output.

Features

- Multiple Quantum Well (MQW) Distributed Feedback (DFB) Laser
- Built - in optical isolator
- Low capacitance and low dark current
- Low threshold current , low operating current
- High-output power
- Industry-standard 14-pin Butterfly package



Applications

- Optical measuring instrumentation
- Optical gas and chemical sensor

Absolute Maximum Ratings

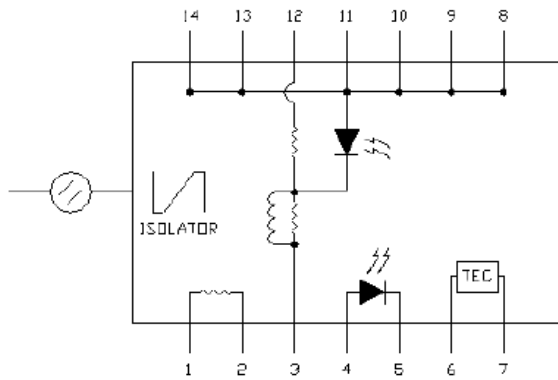
Parameter	Symbol	Condition	Min.	Max.	Unit
Reverse Voltage	V_R			2	V
Forward Current	I_F			120	mA
Forward Voltage	V_F	IOP		2.5	V
Operating Temperature	T_C	IOP	0	60	°C
Storage Temperature	T_{LASER}	IOP	-40	85	°C
Thermoelectric Cooler Voltage	V_{TEC}			3.0	V
Thermoelectric Cooler Current	I_{TEC}		-40	1.8	A
Storage Temperature	T_{STG}	Unbiased	5	85	°C
Storage Humidity	-			85	%RH
Lead Soldering Temperature	S_{TEMP}			260	°C
Lead Soldering Time	S_{TIME}			10	sec



Optical & Electrical Characteristics

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Optical Output Power	Po	CW	6	8	-	mW
Threshold Current	Ith	CW	-	25	35	mA
Operating Current	Iop	Po=PL, TL=25 °C	-	80	100	mA
Operation Voltage	Vop	Po=PL	-	1.2	2.0	V
Slope Efficiency	η	Po=PL, TL=25 °C	-	0.1	-	mW/mA
Peak Wavelength	λ_P	Po=PL, TL=25 °C	1652	1653.5	1655	nm
Side Mode Suppression	SMST	Po=PL, TL=25 °C	35	-	-	dB
Linewidth	$\Delta\lambda$	Po=PL, TL=25 °C	-	-	10	MHz
Thermistor Resistance	Rtherm	T=25°C	9.5	-	10.5	k Ω
Thermistor B Constant	B	T=25°C	-	3900	-	k
Laser Set temperature	TL	-	15	25	35	°C
Monitor Current	I _{mon}	V _{rpd} =5v	50	-	150	
Monitor Dark Current	I _D	V _{rpd} =5v	-	-	200	nA
TEC Current	I _C	$\Delta T=40^\circ C$	-	-	1.5	A
TEC Voltage	V _C	$\Delta T=40^\circ C$	-	-	2.0	V

Pin Assignment

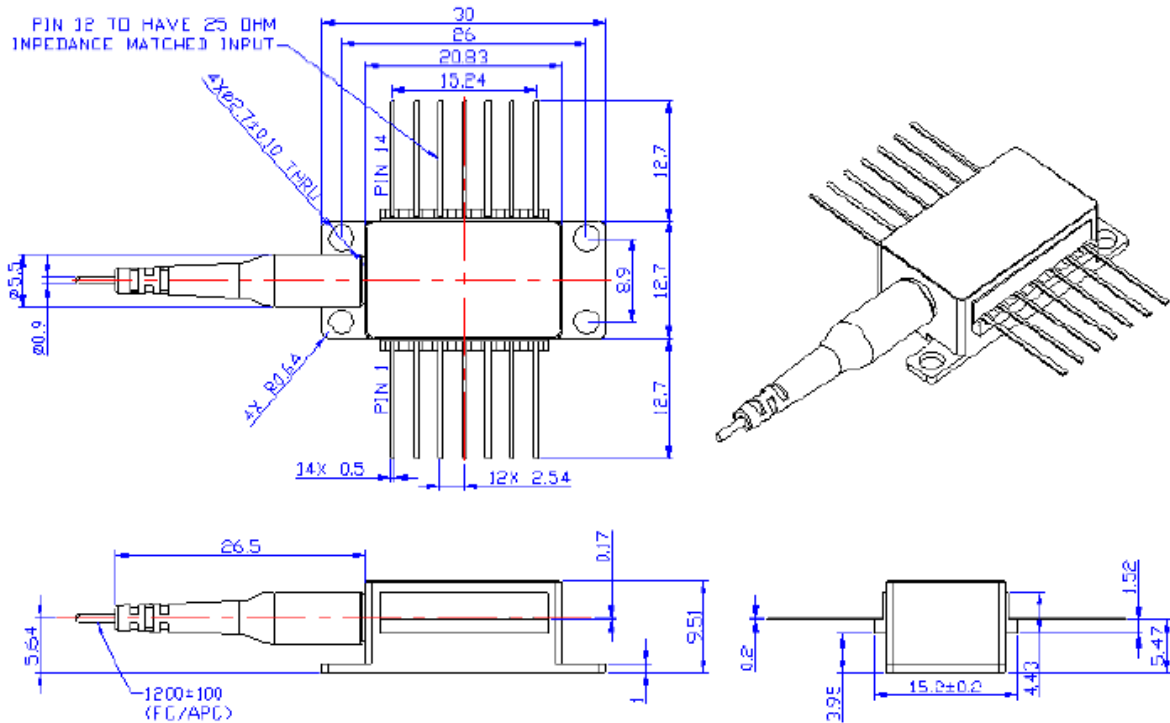


ELECTRICAL SCHEMATICS

PIN ASSIGNMENT:

1	Thermistor
2	Thermistor
3	DC Laser Bias (-)
4	PD Anode (-)
5	PD Cathode (+)
6	Thermoelectric Cooler (+)
7	Thermoelectric Cooler (-)
8	Laser Common (+)
9	Laser Common (+)
10	Laser Common (+)
11	Laser Common (+)
12	Laser Modulation (-)
13	Laser Common (+)
14	Laser Common (+)

Drawing



Order Information

SBF-D653X2-XXX

S	BF	-D	653	X	2	-X	X	X
Mode	Product Type	Chip	Wavelength	Insolator	Bandwidth	Connector	Pigtail Length	Power Range
		D: DFB	653: 1653nm	S: Single W: without	2: 2.5Gb/s	1: FC/APC 2: FC/PC 3: SC/APC 4: SC/PC 5: LC/APC 5: LC/PC W: Without	05: 0.5M 10: 1.0M	P6: >6mw P8: >8mw

Additional requirements can be settled through friendly negotiation.
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