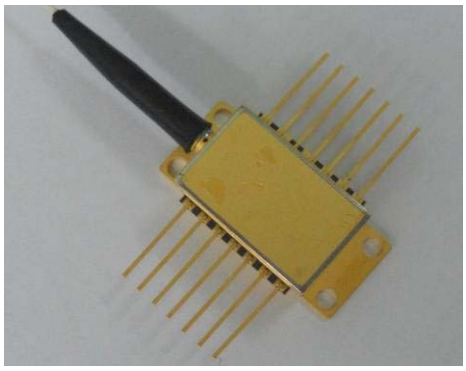
Butterfly High Power Analog 1310nm DFB Laser Device

Features



·High linearity high power DFB LD chip
·Operating wavelength 1310nm
·Built-in isolator
·14-pin butterfly cooled package, single mode
·FC/PC connector or customized
·Output power 4~20mW

Applications

·Analog CATV forward path
·1310nm broadcast and point-to-point application
·Other applications

Description

The high quality DFB laser diode with butterfly package can meet the requirements of high linearity (excellent CSO, CTB parameters) and high power of CATV optical transmitter system and analog AM system. Also, the built-in thermo-electric cooler (TEC) can make the laser diode work properly in various environments.

Absolute Maximum Ratings

Parameter		Symbol	Unit	Min	Max
Storage Temperature Range		Ts	°C	-40	+85
Relative Humidity		RH	%	-	85
Laser chip	Forward current	IFL	mA	-	100
	Reverse current	IRl	mA	-	2
	Reverse voltage	VRL	V	-	2
Monitor detector	Reverse voltage	VRD	V	-	15
	Reverse photo current	IRD	mA		1
	Forward current	IFD	mA		2
Thermal electric cooler	Voltage	-	V	-	2
	Current	-	A	-	1.5
Lead Solder Temperature		-	°C	-	260
Lead Soldering Time		-	S	-	10
Fiber yield strength			kgf	-	1
Fiber bend radius			mm	30	-

Recommended Operating Conditions

Parameter	Symbol	Unit	Min	Max
Case Operating Temperature Range	Tc	°C	-5	60
Power supply Voltage	Vcc	V	-	5
Relative Humidity	RH	%	-	80
Bias current	Ib	mA	-	70
TEC cooler current	Icooler	A	-	1

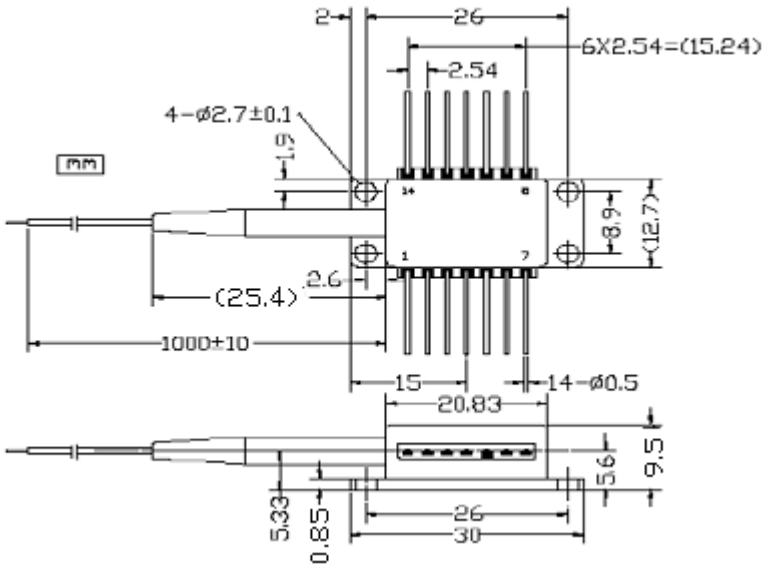
Specifications (T=25°C, unless otherwise noted)

Parameter	Symbol	Unit	Min	Type	Max	Test condition
Electrical Characteristics						
Operating Voltage	Vop	V	-	-	1.8	CW
Threshold Current	Ith	mA	-	10	15	CW
Thermistor	Rth	kΩ	9.5	10	10.5	25 °C
Thermoelectric cooler current	Icooler	mA	-	-	1000	CW, -5 °C~60 °C
Thermoelectric cooler voltage	Vcooler	V	-	-	1.5	CW, -5 °C~60 °C
Monitor Current	Im	uA	50	-	1000	CW, VRD=5V
Monitor Dark Current	Id	nA	-	-	200	CW, VRD=5V
Optical Characteristics						
Optical Output Power	P0	mW	4	-	20	CW
Bias current	IB	mA	-	-	70	-
Side mode suppression ratio	SMSR	dB	30	-	-	CW, If=Ith+20mA
Slope Efficiency	Se	mW/mA		0.3	-	CW
Central Wavelength	λc	nm	1290	1310	1330	CW
Spectral Width	Δλ	nm	-	-	0.3	CW, -20dB
Tracking Error	ΔPf	dB	-	-	0.5	CW, 0~60 °C
Monitor PD Capacitance	C	pF	-	-	10	VRD=5V,f=1MHZ
Connector Repeatability	-	dB	-	-	0.3	CW
Analog Characteristics						
Composite Second Order	CSO	dBc	-	-60	-57	84 CH, PAL
Composite Triple Beat	CTB	dBc	-	-70	-65	84 CH, PAL
Carrier Noise Ratio	CNR	dB	51	-	-	84 CH, PAL
Frequency range	F	MHz	45		2500	

Pin Description

Pin	Description	Pin	Description	Top View
1	Thermistor	8	LD (P), ground	See “Package Outline ”
2	Thermistor	9	LD (P), ground	
3	LD (N) bias	10	LD (P), ground	
4	Detector (P)	11	LD (P), ground	
5	Detector (N)	12	LD (N), RF modulation	
6	TEC (+)	13	LD (P), ground	
7	TEC (-)	14	LD (P), ground	

Package Outline



Oder Information

SBT-	XX	X	X	X	X	-XX
	LD type	**Data rate**	**Output power**	**Top**	**Optical connector**	**Add Info.**
	D3：1310DFB	1：860M	G：2.0～4.0mW(With Iso)	1：0～70	1：SC/PC	
	D4：1490DFB	2：2.5G	H：5.0～7.0mW(With Iso)	2：-20～70	2：SC/APC	
	D5：1550DFB		J：8.0～10mW(With Iso)	3：-40～85	3：FC/PC	
			K：11～13mW(With Iso)	With TEC	4：FC/APC	
			M：14～16mW(With Iso)	A：0～70	5：ST/PC	
			N：17～19mW(With Iso)	B：-20～70	6：ST/APC	
			P：20～22mW(With Iso)	C：-40～85	7：LC/PC	
			Q：23～25mW(With Iso)		8：LC/APC	
			R：26～28mW(With Iso)			

Handling Precautions

This device is susceptible to damage as a result of electrostatic discharge (ESD). A static free environment is highly recommended. Follow guidelines according to proper ESD procedures