

## 1310nm DFB Butterfly High Power Analog Laser Device

### FGBT31-xx0x-00

#### Description

The high quality MQW 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.

#### Features

- High linearity high power MQW DFB LD chip
- Built-in isolator
- 14-pin butterfly cooled package, single mode FC/APC connector or customized
- Output power up to 24mW

#### Applications

- CATV forward-path
- Broadcast and point-to-point applications

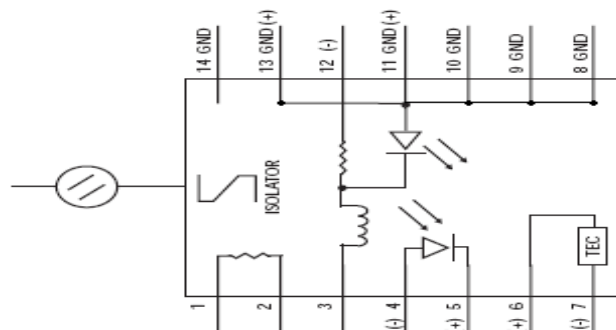


#### Absolute Maximum Ratings

Parameter	Symbol	Min	Max	Unit	Condition
Operating Case Temperature	Tc	-20	70	°C	I=Iop
Storage Temperature	Tstg	-40	85	°C	--
Laser Forward Current	If	--	120	mA	--
Laser Reverse Bias	Vr	--	2	V	--
Photodiode Reverse Bias	Vrpd	--	10	V	--
TEC Current	Itec		1.5	A	-20 °C < Tc < +65 °C,
Lead Solder Temperature	-	-	260	°C	-
Lead Soldering Time	-	-	10	S	-
Fiber bend radius	-	30	-	mm	-
Fiber yield strength	-	-	1	kgf	-

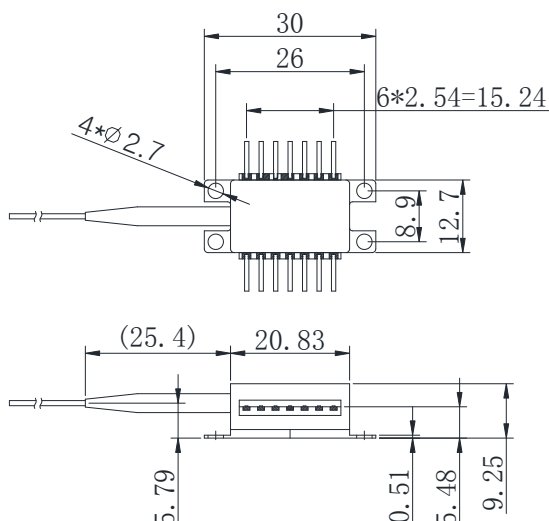
#### Pin Description:

Pin	Description	Pin	Description
1	Thermistor	8	Ground
2	Thermistor	9	Ground
3	LD (N) bias	10	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	N/C



**Electrical and Optical Characteristics**

Parameter	Symbol	Min	Typ	Max	Unit	Test Conditions
Center Wavelength	$\lambda_c$	1300	1310	1330	nm	CW
Spectral Width (-20 dB)	$\Delta\lambda$	--	0.1	1.0	nm	CW
Optical Output Power*	$P_o$	8	-	24	mW	CW, $T_L=25^\circ\text{C}$
Optical Isolation	$I_s$	30	--	--	dB	$T=25^\circ\text{C}$
Side-mode Suppression Ratio	SMSR	30	--	--	dB	CW
Threshold Current	$I_{th}$	--	9	15	mA	$T_L=25^\circ\text{C}$
Operating Current	$I_{op}$	--	--	120	mA	CW
Forward Voltage	$V_F$	--	1.2	2.0	V	CW
Monitor Current	$I_{mon}$	10	--	200	$\mu\text{A/mW}$	
Monitor Dark Current	$I_D$	--	--	50	nA	$V_{rpd}=5\text{ V}$
Operating Case Temperature	T	-20	--	70	$^\circ\text{C}$	
Tracking Error	$\gamma$	-1.0	--	1.0	dB	$TE=10\log(P_o(T_c)/P_o(25^\circ\text{C}))$
Thermistor Resistance	$R_t$	9.5	10	10.5	K $\Omega$	$T=25^\circ\text{C}$
Thermistor B-Value		-	3970	-	K	$25^\circ\text{C}/85^\circ\text{C}$
TEC Current	$I_C$	--	--	1.0	A	$\Delta T=40^\circ\text{C}$
TEC Voltage	$V_C$	--	--	2.0	V	$\Delta T=40^\circ\text{C}$
Carrier Noise Ratio	CNR	51			dB	59 CH, PAL
Composite Second Order	CSO		-	-57	dBc	59 CH, PAL
Composite Triple Beat	CTB		-	-65	dBc	59 CH, PAL
Frequency range	F	45		870	MHz	-
Frequency Response Flatness		-0.5	--	0.5	dB	$25^\circ\text{C}$ , $I_F=I_{op}$ , 40-860 MHz

**Package Outline**

**Order information**
**F G B T 3 1- x x 0 x - 0 0**

 Optical Connector : 2-- SC/APC Pigtail  
 4--FC/APC Pigtail

 Optical power : 06—6.0mW, 08—8.0mW, 10—10mW, 12—12mW  
 14—14mW, 16—16mW, 18—18Mw, 20—20mW,  
 22—22mW, 24—24mW