

MWDM DFB Butterfly Laser Module (14 pins)

Features

- High Linearity Direct Modulation DFB laser
- High Output Power
- Built -in Isolator , TEC, Thermistor and Monitor PD
- Hermetically Sealed 14 Pin Butterfly Package
- RoHs Compliant

Application

- Long Reach Analog Transmission Systems
- Light Source
- Sensor
- Point-to-point Communication
- Test equipment



Absolute Maximum Ratings (Tc=25°C .unless otherwise specified)

Parameter	Symbol	Min.	Max.	Unit	Test Condition
Laser Chip	I _{FL}	–	150	mA	Forward Current
	I _{RL}	–	2	mA	Reverse Current
	V _{RD}	–	15	V	Reverse Voltage
Storage Temperature	T _{stg}	–40	+100	°C	–
Soldering Temperature/Time	–	260/10		°C/S	–



Relative Humidity	R_H	–	95	%	Top < 30 °C
Thermal Electric Cooler	–	–	2	V	Voltage
	–	–	1.5	A	Current
Fiber Yield Strength	–	–	30	nm	–
Fiber Bend Radius	–	–	1	kgf	–
Monitor Detector	V_{RD}	–	15	V	Reverse Voltage
	I_{RD}	–	1	mA	Reverse Photo Current
	I_{FD}	–	2	mA	Forward Current

Operating Conditions

Parameter	Symbol	Min	Typ.	Max.	Unit	Test Conditions
Caser Operating Temperature Range	T_C	– 20	–	60	°C	–
Power Supply Voltage	V_{CC}	–	–	5	V	–
Relative Humidity	R_H	–	–	80	%	–
Bias Current	I_D	–	–	70	mA	–



TEC Cooler Current	Icooler	–	–	1	A	$\Delta T=40K$
TEC Voltage	Vcooler	–	–	2	V	$\Delta T=40K$

Specifications (electrical & optical characteristics)

Parameter	Symbol	Min	Typ.	Max.	Unit	Test Conditions
Operating Voltage	Vop	–	–	1.8	V	CW
Threshold Current	I _{th}	–	10	45	mA	CW
Thermistor	Rth	9.5	10	10.5	K Ω	25 °C
Thermoelectric cooler current	Icooler	–	–	1000	mA	CW, –5 °C ~ 60 °C
Monitor Current	Im	10	–	150	uA	CW, Vrd = 5V
Monitor Dark Current	Id	–	–	500	nA	CW, Vrd = 5V
Central Wavelength	λ_L	λ_{L-1}	λ_L	λ_{L+1}	nm	CW, 25 °C
	1267.5 /1274.5 /1287.5 /1294.5 /1307.5 /1314.5 /1327.5 /1334.5 /1347.5 /1354.5 /1367.5 /1374.5					



Side Mode Suppression Ratio	SMSR	30	50	–	dB	CW, If = Ith + 20 mA
Output Power	Po	1	–	20	mW	CW
Slope Efficiency	Se	–	0.3	–	mW/mA	CW
Spectral Width	$\Delta \lambda$	–	–	0.3	nm	CW , – 20dB
Bias Current	I _B	–	–	70	mA	–
Tracking Error	Δ Pf	–	–	0.5	dB	CW, –5 °C ~ 60 °C, Im =Im @25 °C
Monitor PD Capacitance	C	–	–	0.5	pF	Vrd = 5 V, F = 1 MHz
Connector Repeatability		–	–	0.3	dB	CW
Frequency Range	F	45	–	1000	MHz	–
Tracking Error	Er	–	–	1	dB	Tc = – 20 ~ 65 °C, APC, ATC
Rise Time / Fall Time	Tr / Tf	–	–	2.0	ns	10–90% / 90–10%

- * **CWDM DFB wavelength tolerance + – 3nm.**
- * **LAN-WDM , MWDM ,DWDM wavelength tolerance belongs to their specific properties.**
- * **1625nm . 1650nm. 1654nm wavelength tolerance + – 5nm.**

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page 5