

1,310nm MQW-DFB Return Path Laser

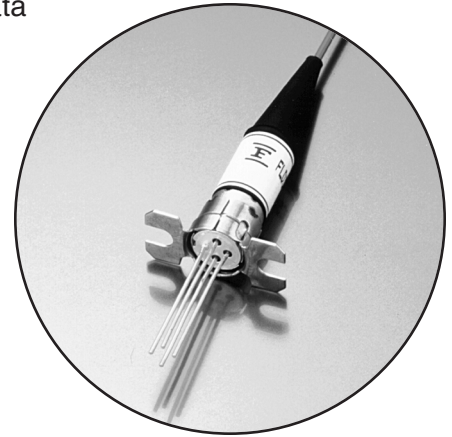
FLD3F12JL

FEATURES

- Multiple Quantum Well (MQW) DFB Laser Loading
- Wide operating temperature without TEC Characteristics
- Built-in optical isolator
- Coaxial module with vertical flange

BENEFITS

- 4 Channels video/data
- Low Distortion
- 5dB Link Loss



APPLICATIONS

This DFB laser module is intended for application in return (reverse) path analog video/data.

DESCRIPTION

The FLD3F12JL is a DFB laser diode for return path analog video/data applications. It has a 2.0 to 4.0mW optical power range*. It is specified with 4 channels signal loading and has excellent CSO and CTB performance. It is packaged in a small coaxial coolerless type module with built-in isolator and monitor photodiode. This device has a wide operating temperature of -25 to +85°C without Thermo-Electric Cooler (TEC).

ABSOLUTE MAXIMUM RATINGS (T_C=25°C)

Parameter	Symbol	Ratings	Unit
Optical Output Power	P _{fmax}	8.0	mW
Forward Current (LD)	I _{fmax}	150	mA
Reverse Voltage (LD)	V _{rmax}	2	V
Photodiode Reverse Voltage	V _{DRmax}	20	V
Photodiode Forward Current	I _{DFmax}	2	mA
Soldering Temperature (t<10sec., d>2.5mm)	T _{solder}	260	°C
Storage Temperature	T _{stg}	-40 to +90	°C
Operating Case Temperature	T _{op}	-25 to +85	°C
Storage Humidity (Note 1)	X _{stg}	85	%
Operating Humidity (Note 1)	X _{op}	85	%

Note 1: Storage or operating within 500 hours maximum.

OPTICAL AND ELECTRICAL CHARACTERISTICS (T_c=-25 to +85°C, unless otherwise specified)

Parameter	Symbol	Test Conditions	Limits			Unit
			Min.	Typ.	Max.	
Fiber Output Power	P _f	CW, I _F =I _{op}	2.0	-	4.0	mW
Threshold Current	I _{th}	CW	2	-	60	mA
Forward Voltage	V _F	CW, I _F =I _{op}	-	1.2	1.5	V
Slope Efficiency	S	CW, I _F =I _{op}	40	-	250	μW/mA
Slope Efficiency at T _c =25°C	S ₂₅	CW, I _F =I _{op} , T _c =25°C	60	120	200	μW/mA
Slope Efficiency Ratio	RTS	S(T _c)/S ₂₅	0.5	-	1.4	-
Peak Wavelength	λ _p	CW, I _F =I _{op}	1,290	-	1,330	nm
SideMode Suppression Ratio	SSR	CW, I _F =I _{op}	30	-	-	dB
Composite Second Order	CSO	Note (1)	-	-	-55	dBc
Composite Triple Beat	CTB	Note (1)	-	-	-60	dBc
Relative Intensity Noise	RIN	Note (2)	-	-	-150	dB/Hz
Frequency Flatness	-	Note (3)	-0.5	-	+0.5	dB
Monitor Current	I _m	CW, I _F =I _{op} , VDR=5V	0.05	-	2.0	mA
Monitor Dark Current	I _D	VDR=5V	-	1	500	nA
Tracking Error	TE	Note (4)	-1.0	-	+1.0	dB

Note (1): I_F=I_{op}, OMI=7%/ch, 4ch(f=7.25MHz to 25.25MHz)

Note (2): CW, I_F=I_{op}, f=5MHz to 300MHz

Note (3): I_F=I_{op}, f=5MHz to 300MHz

Note (4): CW, I_m-APC(I_F=I_{op}@T_c=+25°C), T_c=-25°C to +85°C

Fig. 1 Forward Current vs Output Power

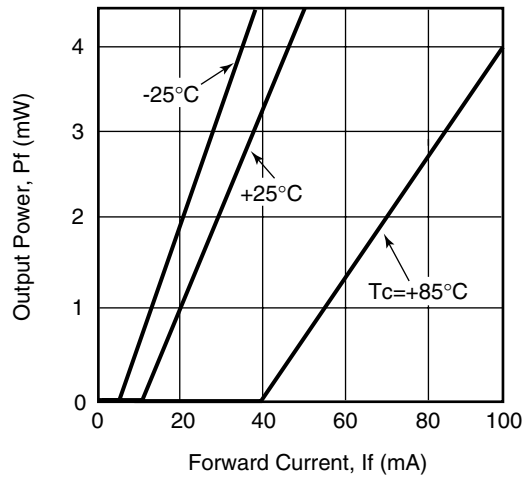


Fig. 2 Forward Voltage vs Forward Current

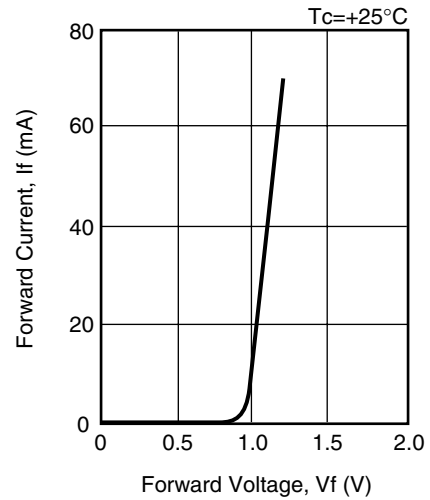


Fig. 3 Temperature Dependence of Threshold Current

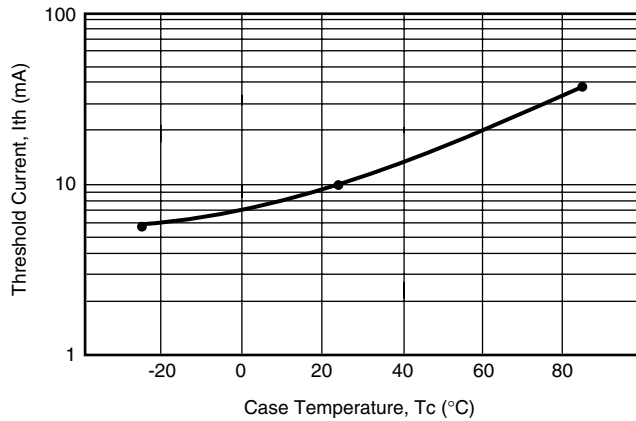


Fig. 4 Temperature Dependence of Slope Efficiency

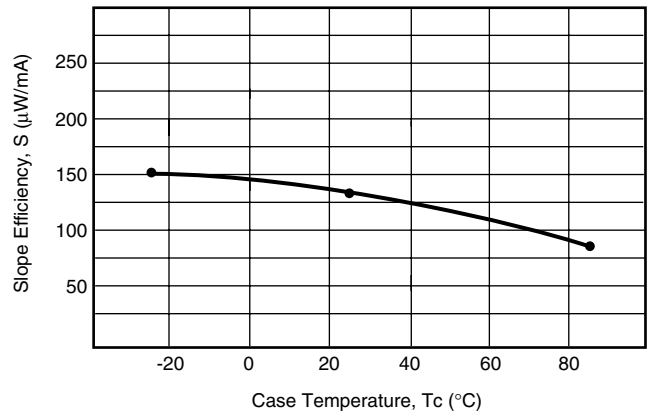


Fig. 5 Tracking Characteristics

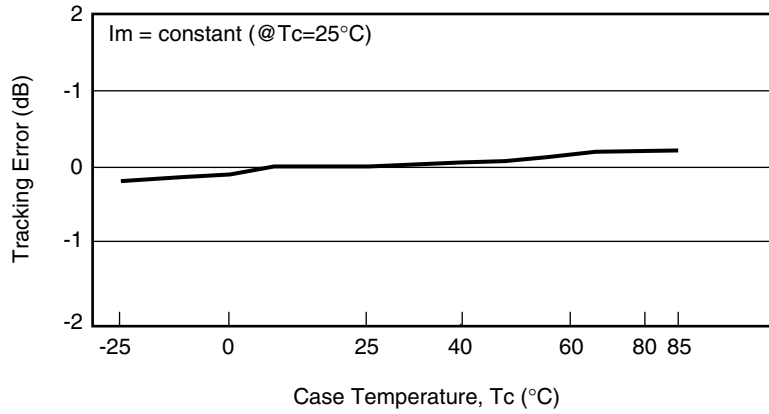


Fig. 6 CSO vs. Output Power

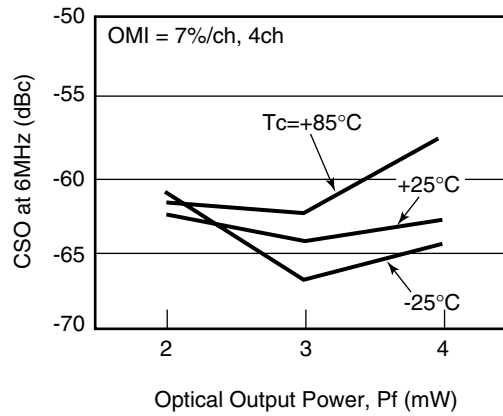
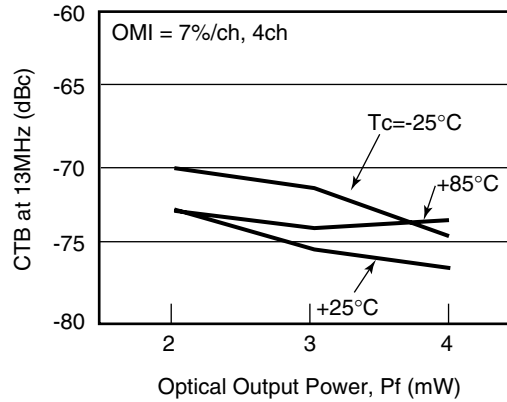


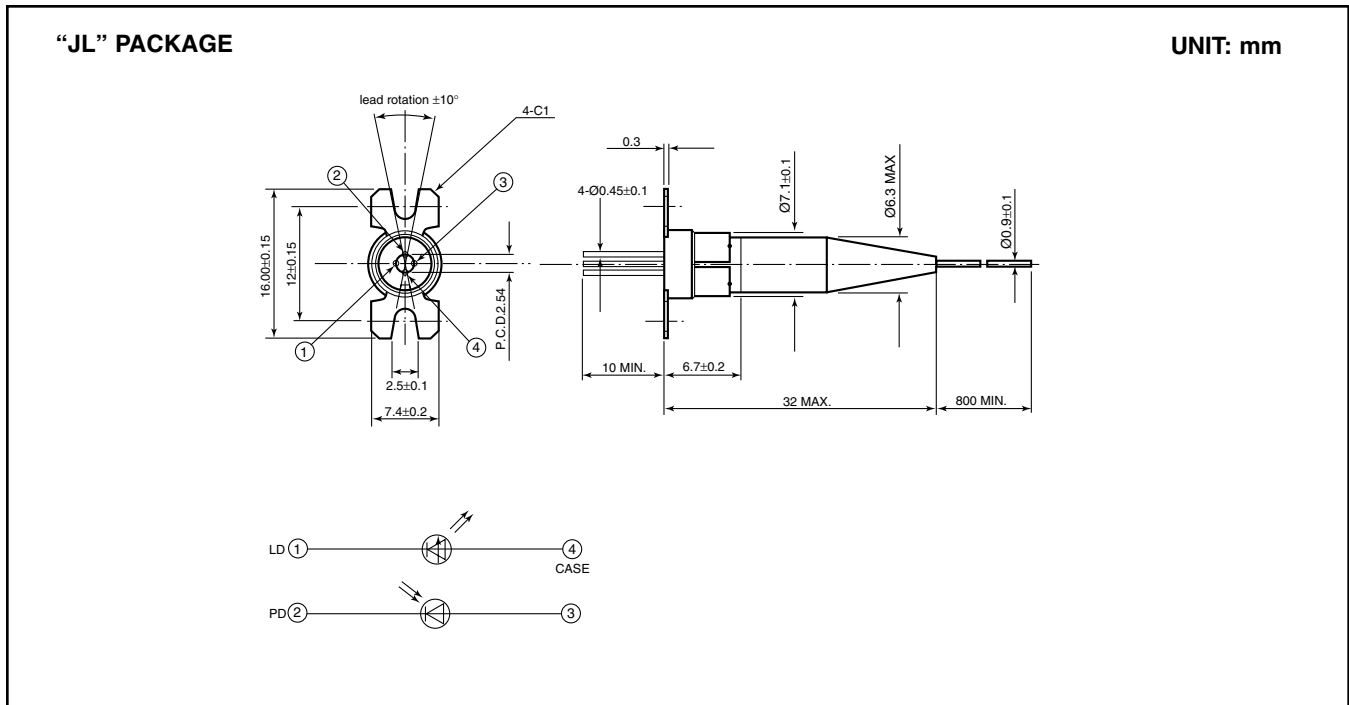
Fig. 7 CTB vs. Output Power



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Return Path Laser**

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Notes



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