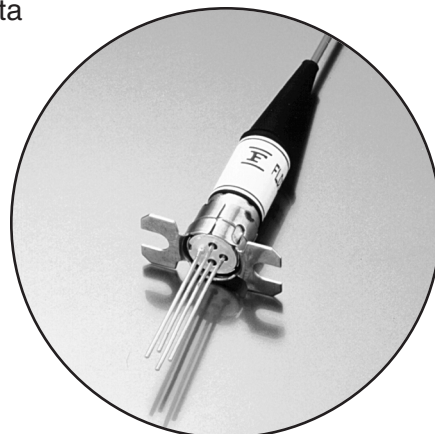


## FEATURES

- 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<sub>C</sub>=25°C)

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

Note 1: Storage or operating within 500 hours maximum.

OPTICAL AND ELECTRICAL CHARACTERISTICS ( $T_c = -25$  to  $+85^\circ\text{C}$ , 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	$\mu\text{W}/\text{mA}$
Slope Efficiency at $T_c = 25^\circ\text{C}$	$S_{25}$	CW, $I_F = I_{op}$ , $T_c = 25^\circ\text{C}$	60	120	200	$\mu\text{W}/\text{mA}$
Slope Efficiency Ratio	RTS	$S(T_c)/S_{25}$	0.5	-	1.4	-
Peak Wavelength	$\lambda_p$	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, $I_F = I_{op}$ , $V_{DR} = 5\text{V}$	0.05	-	2.0	mA
Monitor Dark Current	$I_D$	$V_{DR} = 5\text{V}$	-	1	500	nA
Tracking Error	TE	Note (4)	-1.0	-	+1.0	dB

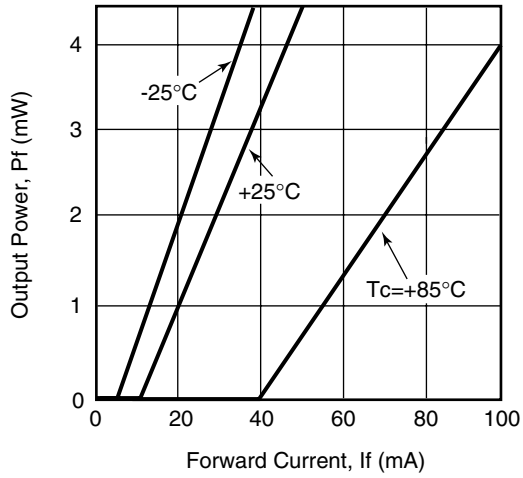
Note (1):  $I_F = I_{op}$ ,  $\text{OMI} = 7\%/ch$ ,  $4ch(f = 7.25\text{MHz to } 25.25\text{MHz})$

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

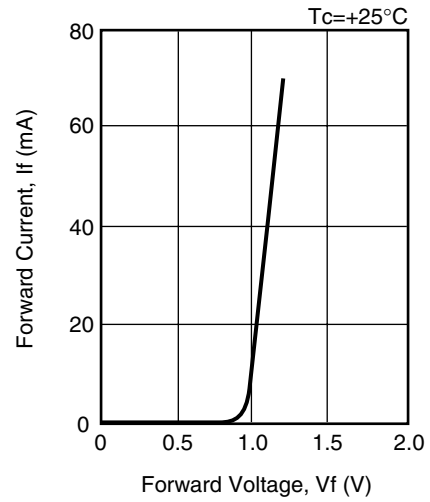
Note (3):  $I_F = I_{op}$ ,  $f = 5\text{MHz to } 300\text{MHz}$

Note (4): CW,  $I_m$ -APC( $I_F = I_{op}$  @  $T_c = +25^\circ\text{C}$ ),  $T_c = -25^\circ\text{C to } +85^\circ\text{C}$

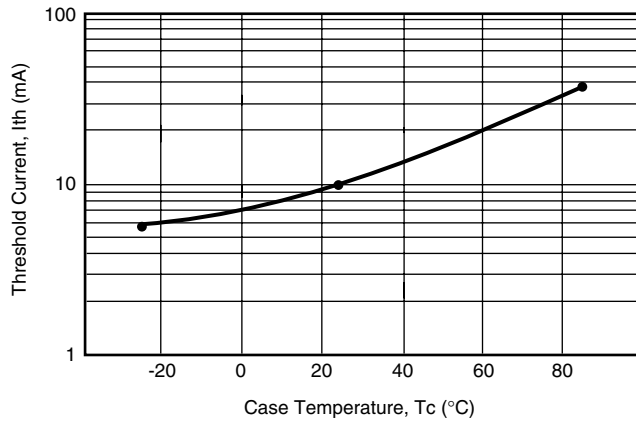
**Fig. 1 Forward Current vs Output Power**



**Fig. 2 Forward Voltage vs Forward Current**



**Fig. 3 Temperature Dependence of Threshold Current**



**Fig. 4 Temperature Dependence of Slope Efficiency**

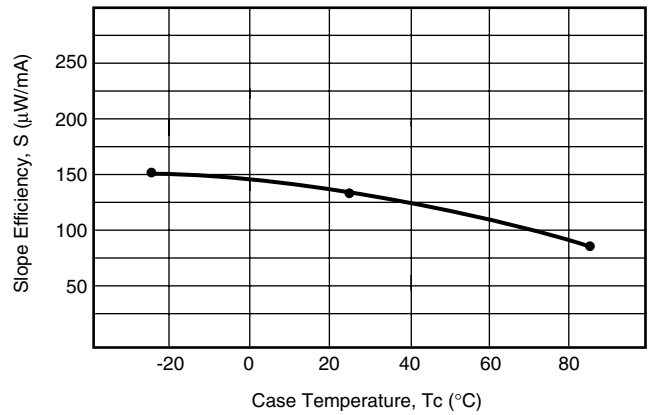


Fig. 5 Tracking Characteristics

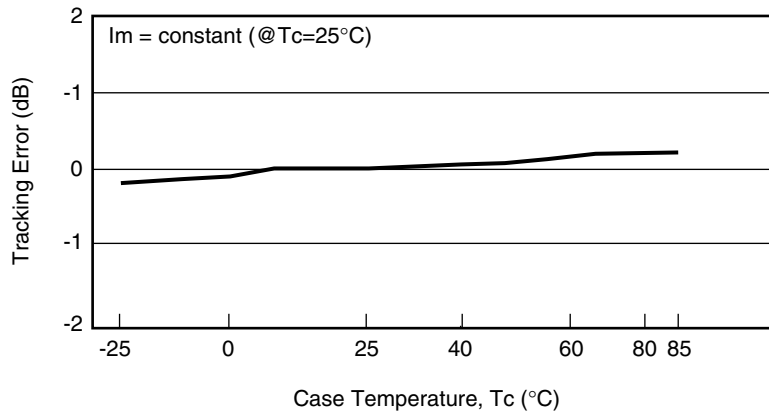


Fig. 6 CSO vs. Output Power

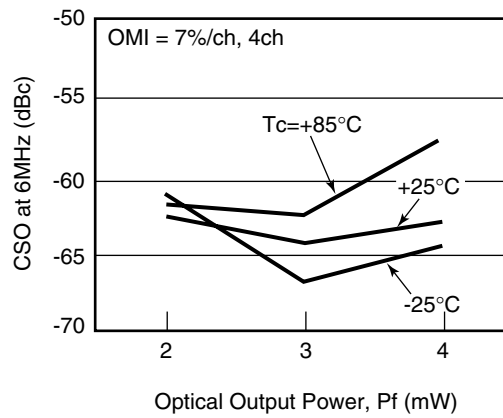
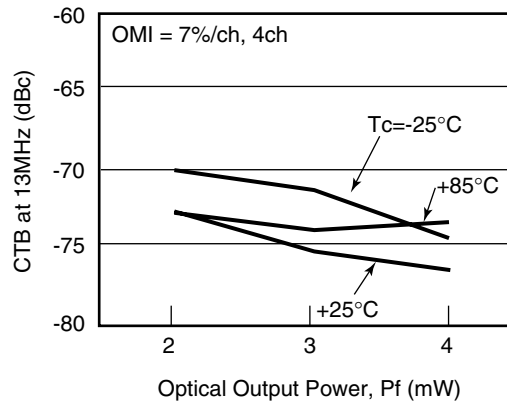
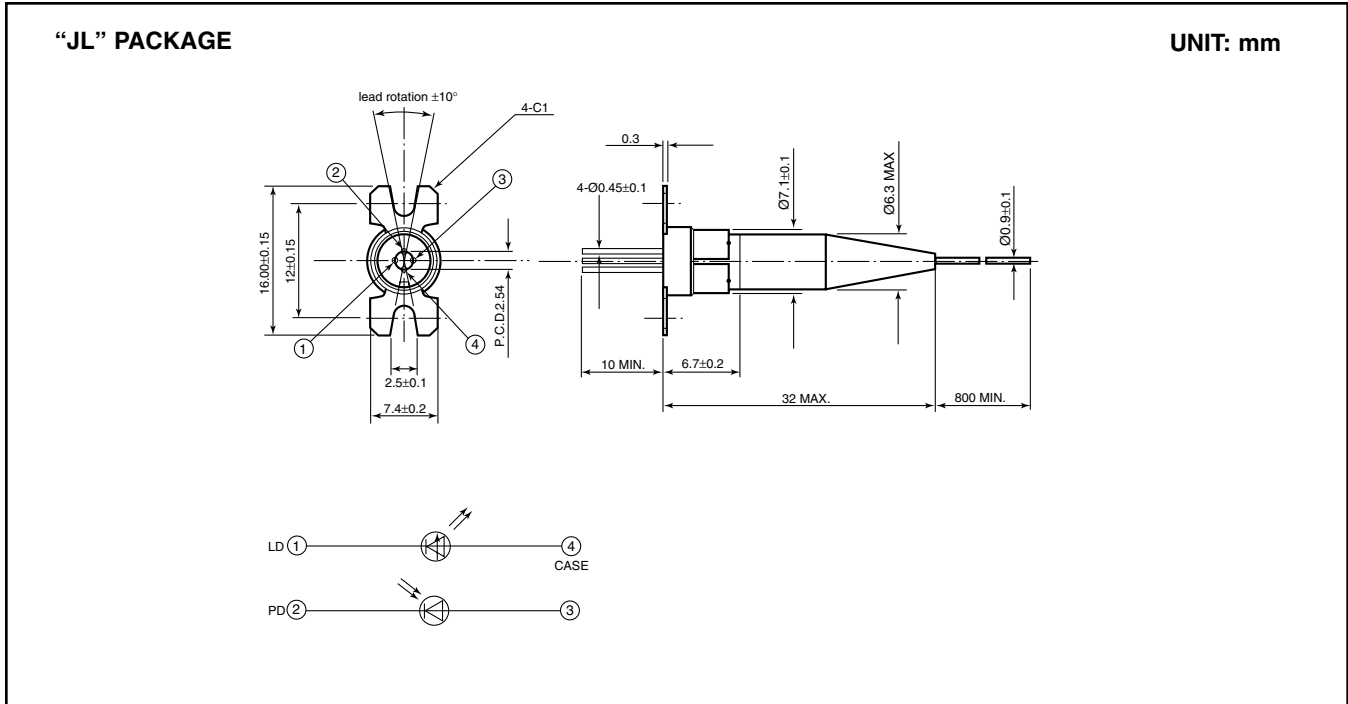


Fig. 7 CTB vs. Output Power



Notes



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- Observe government laws and company regulations when discarding this product. This product must be discarded in accordance with methods specified by applicable hazardous waste procedures.

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