

1,310nm MQW-DFB Return Path Laser

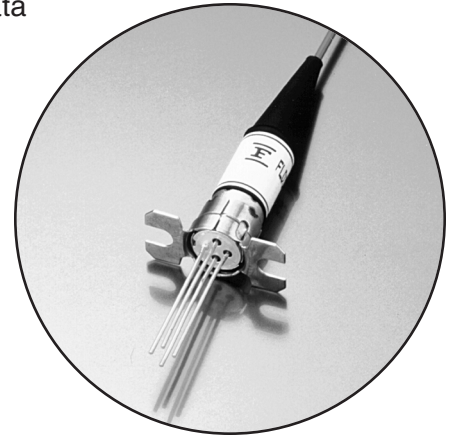
FLD3F12JL

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

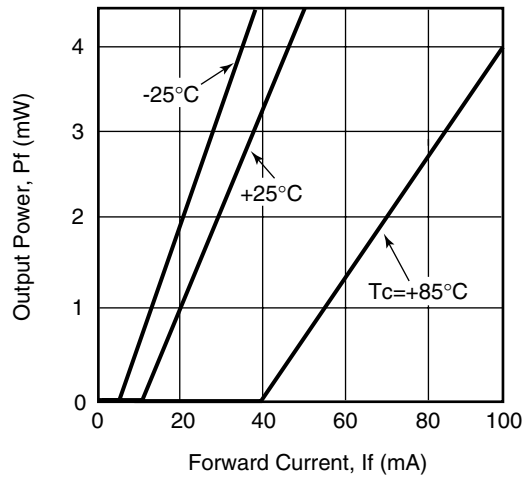


Fig. 2 Forward Voltage vs Forward Current

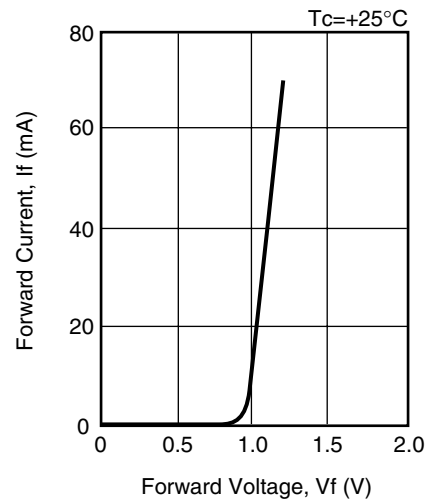


Fig. 3 Temperature Dependence of Threshold Current

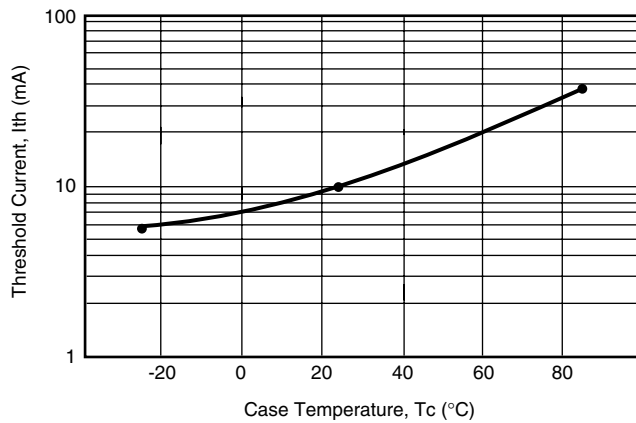


Fig. 4 Temperature Dependence of Slope Efficiency

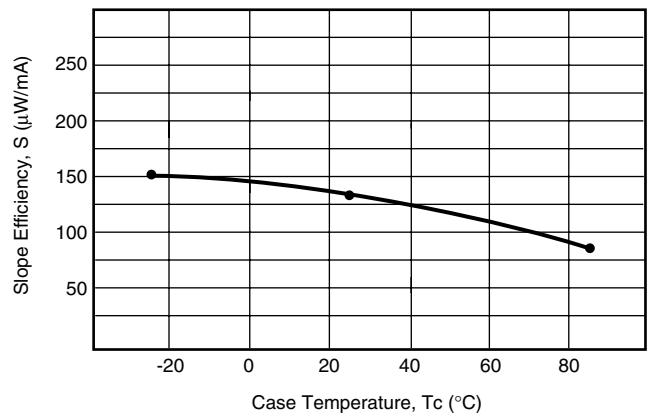


Fig. 5 Tracking Characteristics

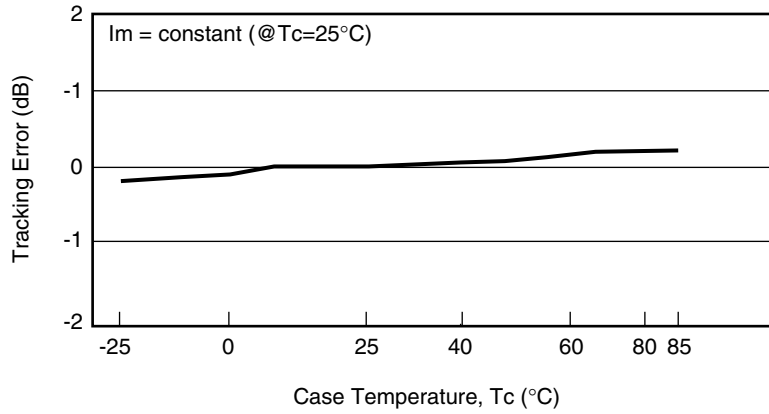


Fig. 6 CSO vs. Output Power

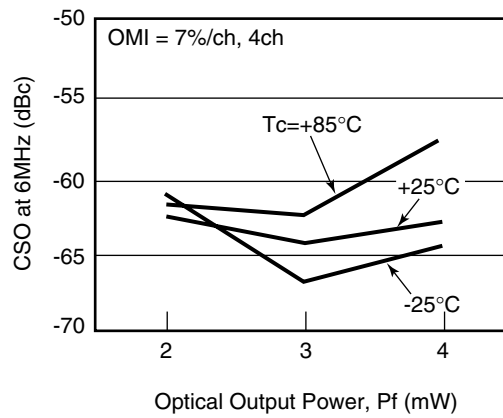
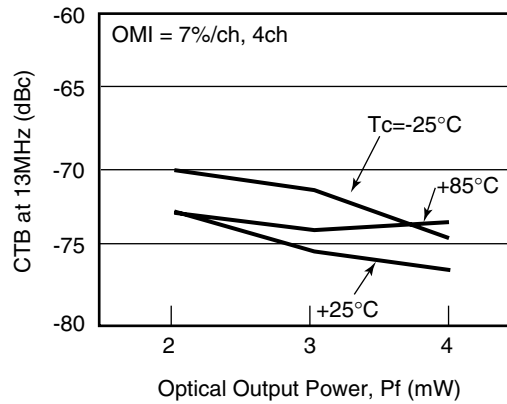


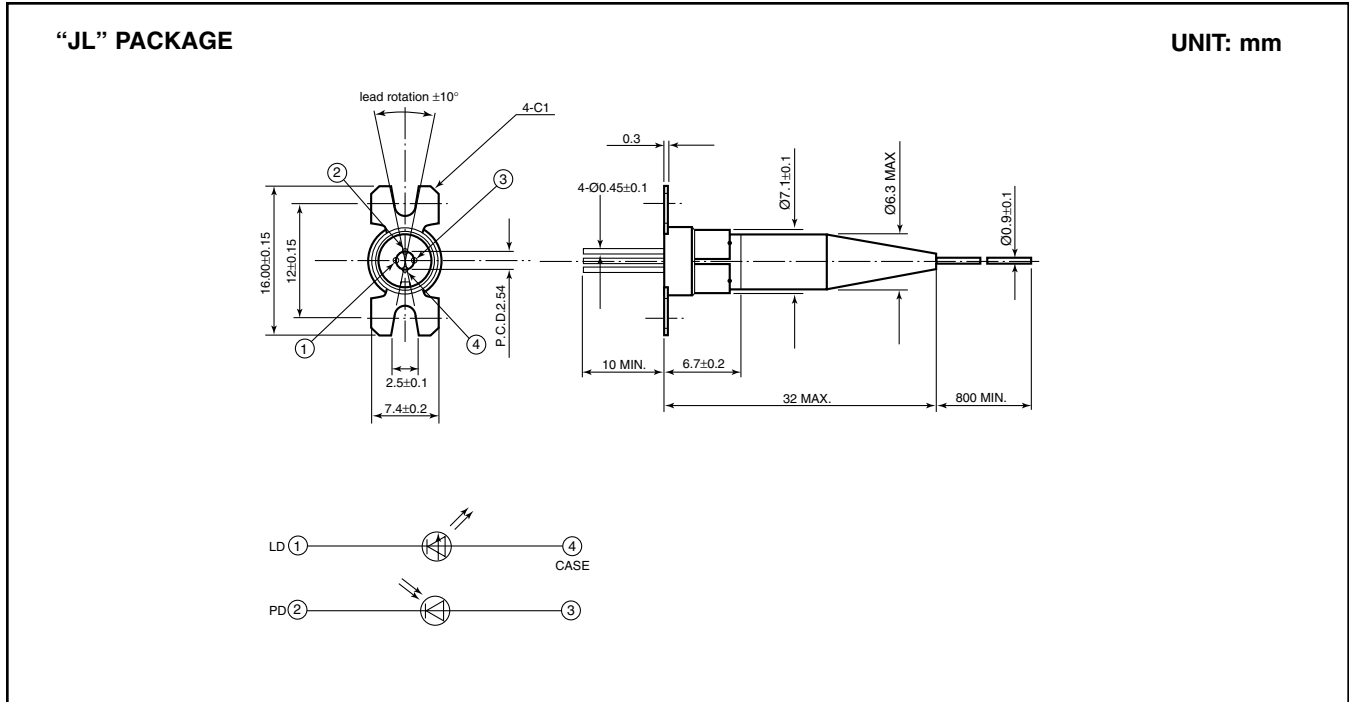
Fig. 7 CTB vs. Output Power



**1,310nm MQW-DFB
Return Path Laser**

FLD3F12JL

Notes



For further information please contact:

**FUJITSU COMPOUND SEMICONDUCTOR, INC.
Americas & R.O.W.**

2355 Zanker Rd.
San Jose, CA 95131-1138, U.S.A.
Phone: (408) 232-9500
FAX: (408) 428-9111
www.fcsi.fujitsu.com

FME, QDD

Fujitsu Microelectronics Europe GmbH
Quantum Devices Division
Network House
Norreys Drive
Maidenhead, Berkshire SL6 4FJ
United Kingdom
TEL: +44 (0) 1628 504800
FAX: +44 (0) 1628 504888

**FUJITSU QUANTUM DEVICES
SINGAPORE PTE LTD.**

Hong Kong Branch
Rm. 1101, Ocean Centre, 5 Canton Rd. Tsim Sha Tsui,
Kowloon, Hong Kong
TEL: +852-23770226
FAX: +852-23763269

Fujitsu Limited reserves the right to change products and specifications without notice.
The information does not convey any license under rights of Fujitsu Limited or others.

© 2000 FUJITSU COMPOUND SEMICONDUCTOR, INC.
Printed in U.S.A. FCSI0200M200

CAUTION

Fujitsu Compound Semiconductor Products contain **gallium arsenide (GaAs)** which can be hazardous to the human body and the environment. For safety, observe the following procedures:

- Do not put this product into the mouth.
- Do not alter the form of this product into a gas, powder, or liquid through burning, crushing, or chemical processing as these by-products are dangerous to the human body if inhaled, ingested, or swallowed.
- 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.

FUJITSU QUANTUM DEVICES LIMITED

Global Business Division
Global Sales Support Department
Shinjuku Daiichiseimei Building, 2-7-1 Nishishinjuku,
Shinjuku-ku, Tokyo, 163-0721, Japan
TEL: +81-3-5322-3356
FAX: +81-3-5322-3398