

MITSUBISHI LASER DIODES

ML7XX11 SERIES

InGaAsP DFB LASER DIODES

Notice: Some parametric limits are subject to change

**TYPE
NAME**

ML725B11F / ML720J11S

DESCRIPTION

ML7XX11 series are DFB (Distributed Feedback) laser diodes emitting light beam with emission wavelength of 1275 ~ 1350nm. They are well suited for light source in long-distance digital transmission application of coarse WDM. They are hermetically sealed devices with th photodiode for optical output monitoring.

APPLICATION

- Long - distance digital transmission system
- Coarse WDM application

FEATURES

- Low threshold current (typical 6mA)
- Wide temperature range operation
- High - side mode suppression ratio (typical 40dB)
- High speed response (typical 110psec)
- MQW* active layer
- FSBH** structure fabricated by MOCVD process
 - * Multiple Quantum Well
 - ** Facet Selective - growth Buried Hetero structure

ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Conditions	Ratings	Unit
P _o	Light output power	CW	6	mW
I _{op}	Operating current	-	150	mA
V _{RL}	Reverse voltage (Laser diode)	-	2	V
V _{RD}	Reverse voltage (Photo diode)	-	20	V
I _{FD}	Forward current (Photo diode)	-	2	mA
T _c	Case temperature	-	0 to +85	°C
T _{stg}	Storage temperature	-	- 40 to +100	°C

ELECTRICAL/OPTICAL CHARACTERISTICS (T_c=25°C)

Symbol	Parameter	Test conditions	Min.	Typ.	Max.	Unit
I _{th}	Threshold current	CW	-	6	20	mA
I _{op}	Operation current	CW, P _o =5mW	-	18	40	mA
V _{op}	Operating voltage	CW, P _o =5mW	-	1.1	1.8	V
η	Slope efficiency	CW, P _o =5mW	0.3	0.4	-	mW/mA
λ _p	Peak wavelength	CW, P _o =5mW, T _c =0 ~ 85°C	<*2>			nm
θ _{//}	Beam divergence angle (parallel)	CW, P _o =5mW	-	25	35	deg.
θ _⊥	Beam divergence angle (perpendicular)	CW, P _o =5mW	-	30	40	deg.
SMSR	Side mode suppression ratio	CW, P _o =5mW, T _c =0 ~ 85°C	30	40	-	dB
		3Gbps, I _b =I _{th} , I _{mod} =40mA	30	-	-	
t _r	Rise time	622Mbps, I _b =I _{th} , 10 - 90% short lead pin	-	60	-	psec
t _f	Fall time		-	110	-	
TE	Tracking error	CW, APC I _m (25°C)=5mW TE=10log(P _o (T _c)/P _o (25°C)) T _c = 0 to +85°C	-1.0	-	+1.0	dB
I _m	Monitor current (PD)	CW, P _o =5mW, V _{RD} =1V R _L =10 ohm <*1>	0.05	0.2	-	mA
I _d	Dark current (PD)	V _{RD} =5V	-	-	1.0	mA
C _d	Capacitance (PD)	V _{RD} =5V, f=1MHz	-	10	20	pF

<*1> R_L is load resistance of the photo diode.

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<*2> Peak wave length

Type	Symbol	Test condition	Limits			Unit
			Min.	Typ.	Max.	
ML725B11F-04 / ML720J11S-04	λ_p	CW Po=5mW Tc=0 ~ +85°C	1269.0	1275.7	1282.4	nm
ML725B11F-05 / ML720J11S-05			1293.5	1300.2	1306.9	
ML725B11F-06 / ML720J11S-06			1318.0	1324.7	1331.4	
ML725B11F-07 / ML720J11S-07			1342.5	1349.2	1355.9	

OUTLINE DRAWINGS

