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
Po	Light output power	CW	**6**	mW
Iop	Operating current	-	**150**	mA
VRL	Reverse voltage (Laser diode)	-	**2**	V
VRD	Reverse voltage (Photo diode)	-	**20**	V
IFD	Forward current (Photo diode)	-	**2**	mA
Tc	Case temperature	-	**0 to +85**	°C
Tstg	Storage temperature	-	**- 40 to +100**	°C

ELECTRICAL/OPTICAL CHARACTERISTICS (Tc=25°C)

Symbol	Parameter	Test conditions	**Min.**	**Typ.**	**Max.**	**Unit**
Ith	Threshold current	CW	-	**6**	**20**	**mA**
Iop	Operation current	CW,Po=5mW	-	**18**	**40**	**mA**
Vop	Operating voltage	CW,Po=5mW	-	**1.1**	**1.8**	**V**
η	Slope efficiency	CW,Po=5mW	**0.3**	**0.4**	-	**mW/mA**
λp	Peak wavelength	CW,Po=5mW, Tc=0 ~ 85°C	**<*2>**			**nm**
$\theta_{//}$	Beam divergence angle (parallel)	CW,Po=5mW	-	**25**	**35**	**deg.**
$\theta_{\perp}$	Beam divergence angle (perpendicular)	CW,Po=5mW	-	**30**	**40**	**deg.**
SMSR	Side mode suppression ratio	CW,Po=5mW, Tc=0 ~85°C	**30**	**40**	-	**dB**
		3Gbps, Ib=Ith, Imod=40mA	**30**	-	-	
tr	Rise time	622Mbps, Ib=Ith, 10 - 90% short lead pin	-	**60**	-	**psec**
tf	Fall time		-	**110**	-	
TE	Tracking error	CW, APC Im(25°C)=5mW TE=10log(Po(Tc)/Po(25°C)) Tc= 0 to +85°C	**-1.0**	-	**+1.0**	**dB**
I_m	Monitor current (PD)	CW,Po=5mW, V_{RD}=1V R_L=10 ohm <*1>	**0.05**	**0.2**	-	**mA**
I_d	Dark current (PD)	V_{RD}=5V	-	-	**1.0**	**μA**
C_d	Capacitance (PD)	V_{RD}=5V, f=1MHz	-	**10**	**20**	**pF**

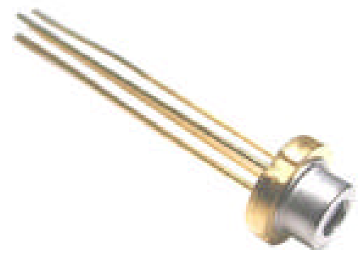
<*1> RL is load resistance of the photo diode.

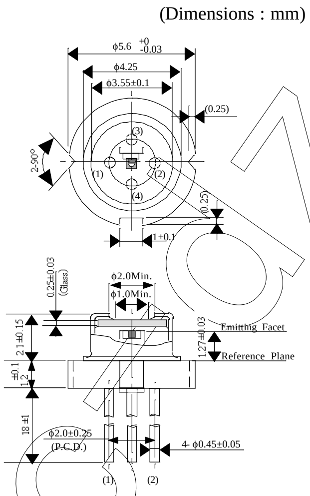
<*2> Peak wave length

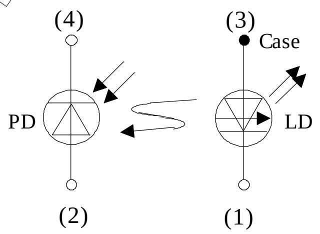
Type	Symbol	Test condition	Limits			Unit
			Min.	Typ.	Max.	
ML725B11F-04 / ML720J11S-04	λ_p	CW Po=5mW Tc=0 ~ +85°C	1269.0	1275.7	1282.4	nm
ML725B11F-05 / ML720J11S-05			1293.5	1300.2	1306.9	
ML725B11F-06 / ML720J11S-06			1318.0	1324.7	1331.4	
ML725B11F-07 / ML720J11S-07			1342.5	1349.2	1355.9	

OUTLINE DRAWINGS

ML725B11F







ML720J11S