

MITSUBISHI LASER DIODES  
**ML7XX11 SERIES**  
 InGaAsP DFB-LASER DIODES

**TYPE  
NAME**

**ML725B11/ML720J11S/ML725J11F**

**DESCRIPTION**

ML7XX11 series are DFB (Distributed Feedback) laser diodes emitting light beam around 1310nm. They are well suited for light source in long -distance digital transmission systems. ML725B11F / ML720J11S are hermetically sealed devices with the photo diode for optical output monitoring.

**FEATURES**

- Low threshold current (typical 10mA)
  - Wide temperature range operation
  - High - side mode suppression ratio (typical 40dB)
  - High speed response (typical 0.2nsec)
  - MQW\* active layer
  - FSBH\*\* structure fabricated by MOCVD process
- \* Multiple Quantum Well  
 \*\* Facet Selective - growth Buried Hetero structure

**APPLICATION**

Long - distance digital transmission system

**\*\*\*Specification Note**

Type	Operation Temperature Range
ML7XX11-01	Tc=-40 to 85°C
ML7XX11-02	Tc=-20 to 85°C
ML7XX11-03	Tc= 0 to 85°C

**ABSOLUTE MAXIMUM RATINGS**

Symbol	Parameter	Conditions	Ratings	Unit
Po	Light output power	CW	6	mW
VRL	Reverse voltage (Laser diode)	-	2	V
VRD	Reverse voltage (Photo diode)	-	20	V
IFD	Forward current (Photo diode)	-	2	mA
Tc	Case temperature	-	-01 -40 to +85 -02 -20 to +85 -03 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	-	10	30	mA
Iop	Operation current	CW,Po=5mW	-	20	40	mA
Vop	Operating voltage	CW,Po=5mW	-	1.2	1.8	V
$\eta$	Slope efficiency	CW,Po=5mW	0.3	0.5	-	mW/mA
$\lambda_p$	Peak wavelength	CW,Po=5mW ***Note	1290	1310	1330	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 ***Note	30	40	-	dB
Im	Monitoring output current	CW,Po=5mW	-	0.2	-	mA
tr,tf	Rise and Fall time	If=Ith,Po=5mW,10 - 90%	-	0.2	0.4	ns

