

MITSUBISHI LASER DIODES
ML7XX14 SERIES
 InGaAsP DFB-LASER DIODES

**TYPE
NAME**

ML725B14F

DESCRIPTION

ML7XX14 series are MQW*-DFB** laser diodes emitting light beam around 1310nm. They are well suited for light source in long distance analog transmission system for example cable television (CATV). The ML7XX14 is able to operate in wide temperature rang from -40°C to +85°C
 ML725B14F are hermetically sealed devices with the photo diode for optical output monitoring.

* MQW : Multiple Quantum Well
 ** DFB : Distributed Feedback

FEATURES

- Excellent low distortion characteristic
 CSO (typ. -50dBc)
 CTB (typ. -55dBc)
 Modulation depth $m = 3.5\%$ /channel
 $P_o > 5\text{mW}$
 20 km single mode fiber
- Low relative intensity noise characteristic (typ. -155dB/Hz)
- Low threshold current (Max. 20mA@25°C)
- High slope efficiency (Min. 0.3mW/mA@25°C)
- High side mode suppression ratio (typ. 40dB)

APPLICATION

Analog optical communications, such as CATV

ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Conditions	Ratings	Unit
Po	Light output power	CW	8	mW
Iop	Forward current (Laser diode)	-	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	-	- 40 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
		CW, Tc=85°C	-	30	40	
Iop	Operation current	CW, Po=5mW	-	18	40	mA
		CW, Po=5mW, Tc=85°C	-	50	75	
Vop	Operating voltage	CW, Po=5mW	-	1.2	1.8	V
η	Slope efficiency	CW, Po=5mW	0.3	-	-	mW/mA
λ_p	Peak wavelength	CW, Po=5mW, Tc=-40 to +85°C	1290	1310	1330	nm
$\theta_{//}$	Beam divergence angle (Full angle at half maximum)	CW, Po=5mW	-	25	35	deg.
θ_{\perp}		CW, Po=5mW	-	30	40	
SMSR	Side mode suppression ratio	CW, Po=5mW, Tc=-40 to +85°C	30	40	-	dB
CSO	Composite second order	78 channel transmission test modulation depth $m=3.5\%$, $P_o>5\text{mW}$, 20Km SMF Tc=-40 to 85°C	-	-50	-42	dB
CTB	Composite triple beat		-	-55	-46	
RIN	Relative intensity noise	CW, Po=5mW	-	-155	-	dB/Hz
Im	Monitoring output current	CW, Po=5mW	0.05	0.2	-	mA

