

PRELIMINARY

Notice: This is not a final specification.
Some parametric limits are subject to change.

MITSUBISHI LASER DIODES

ML9xx19 SERIES

2.5Gbps InGaAsP DFB LASER DIODES

**TYPE
NAME**

ML925B19F

DESCRIPTION

ML9XX19 series are uncooled DFB (Distributed Feedback) laser diodes for 2.5Gbps transmission emitting light beam with wavelength of 1470~1610nm. $\lambda/4$ shifted grating structure is employed to obtain excellent SMSR performance under 2.5Gbps modulation. Furthermore, ML9xx19 can operate in the wide temperature range from 0°C to 70 °C without any temperature control. They are well suited for light source in long distance digital transmission application of coarse WDM.

FEATURES

- $\lambda/4$ phase shifted grating structure
- Wide temperature range operation (0°C to 70 °C)
- High side-mode-suppression-ratio(typical 45dB)
- High resonance frequency(typical 11GHz)

APPLICATION

- 2.5Gbps long-reach transmission
- Coarse WDM application

ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Conditions	Ratings	Unit
Po	Light output power	CW	6	mW
IF	Laser forward current	-	200	mA
VRL	Laser reverse voltage	-	2	V
IRD	PD forward current	-	2	mA
VRD	PD reverse voltage	-	20	°C
Tc	Operation temperature	-	0 to +70	°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	---	15	30	mA
		CW, Tc=70 °C	---	35	50	
Iop	Operation current	CW, Po=5mW, Tc=70 °C	---	40	60	mA
		CW, Po=5mW	---	70	100	
Vop	Operating voltage	CW, Po=5mW	---	1.1	1.8	V
λ_p	Peak wavelength	CW, Po=5mW	<*, **>			nm
η	Slope efficiency	CW, Po=5mW	0.15	0.20	---	mW/mA
$\theta_{//}$	Beam divergence angle (Parallel) <1>	CW, Po=5mW	---	25	40	deg.
θ_{\perp}	Beam divergence angle (Perpendicular) <1>	CW, Po=5mW	---	30	47	deg.
SMSR	Side Mode suppression ratio	CW, Po=5mW, Tc=0 ~ 70 °C	35	45	---	dB
tr,tf	Rise and Fall time (10%-90%)	2.48832Gbps, I _{bias} =I _{th} short lead-pin	---	100	150	psec
fr	Resonance frequency	2.48832Gbps, I _{bias} =I _{th} , I _{pp} =40mA	---	11	---	dB
I _m	Monitor Current (PD)	CW, Po=5mW, VRD=1V,	0.1	---	2.0	mA
I _d	Dark Current (PD)	VRD=5V	---	---	1.0	μA
C _t	Capacitance (PD)	VRD=5V, f=1MHz	---	10	20	pF

Note : <1> Exclude back facet reflection from a monitor PD



MITSUBISHI
ELECTRIC

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<*> Peak Wavelength

Type	Symbol	Test Condition	Limits			Unit
			Min.	Typ.	Max.	
ML925B19F-04	λ_p	CW Po=5mW Tc=25°C	1467	1470	1473	nm
ML925B19F-05			1487	1490	1493	
ML925B19F-06			1507	1510	1513	
ML925B19F-07			1527	1530	1533	
ML925B19F-08			1547	1550	1553	
ML925B19F-09			1567	1570	1573	
ML925B19F-10			1587	1590	1593	
ML925B19F-11			1607	1610	1613	

<*> Peak Wavelength

Type	Symbol	Test Condition	Limits			Unit
			Min.	Typ.	Max.	
ML925B19F-12	λ_p	CW Po=5mW Tc=25°C	1468	1470	1472	nm
ML925B19F-13			1488	1490	1492	
ML925B19F-14			1508	1510	1512	
ML925B19F-15			1528	1530	1532	
ML925B19F-16			1548	1550	1552	
ML925B19F-17			1568	1570	1572	
ML925B19F-18			1588	1590	1592	
ML925B19F-19			1608	1610	1612	

OUTLINE DRAWINGS

