

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.
$\theta_{\perp}$	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, Ibias=Ith, short lead-pin	---	100	150	psec
fr	Resonance frequency	2.48832Gbps, Ibias=Ith, Ipp=40mA	---	11	---	dB
Im	Monitor Current (PD)	CW, Po=5mW, VRD=1V,	0.1	---	2.0	mA
Id	Dark Current (PD)	VRD=5V	---	---	1.0	μ A
Ct	Capacitance (PD)	VRD=5V, f=1MHz	---	10	20	pF

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



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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	

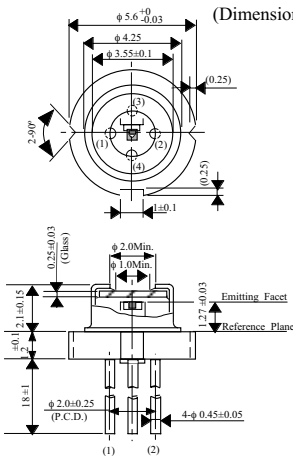
<*> Peak Wavelength

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	

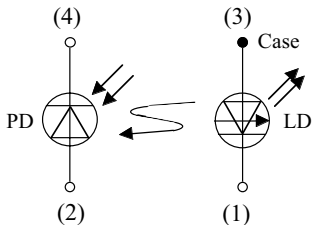
OUTLINE DRAWINGS

ML925B19F





(Dimension:mm)



PD (1, 2) and LD (3, 4) configuration.



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