

MITSUBISHI LASER DIODES
ML9xx19 SERIES
 2.5Gbps InGaAsP DFB LASER DIODE

**TYPE
NAME**

ML925B19F

DESCRIPTION

ML9xx19 series are uncooled DFB (Distributed Feedback) laser diodes for 2.5Gbps transmission emitting light beam at 1550nm. $\lambda/4$ 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.

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-haul transmission

ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Conditions	Ratings	Unit
Po	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	V
Tc	Operation temperature	-	0 ~ +70	°C
Tstg	Storage temperature	-	-40 ~ +100	°C

ELECTRICAL/OPTICAL CHARACTERISTICS (Tc=25°C)

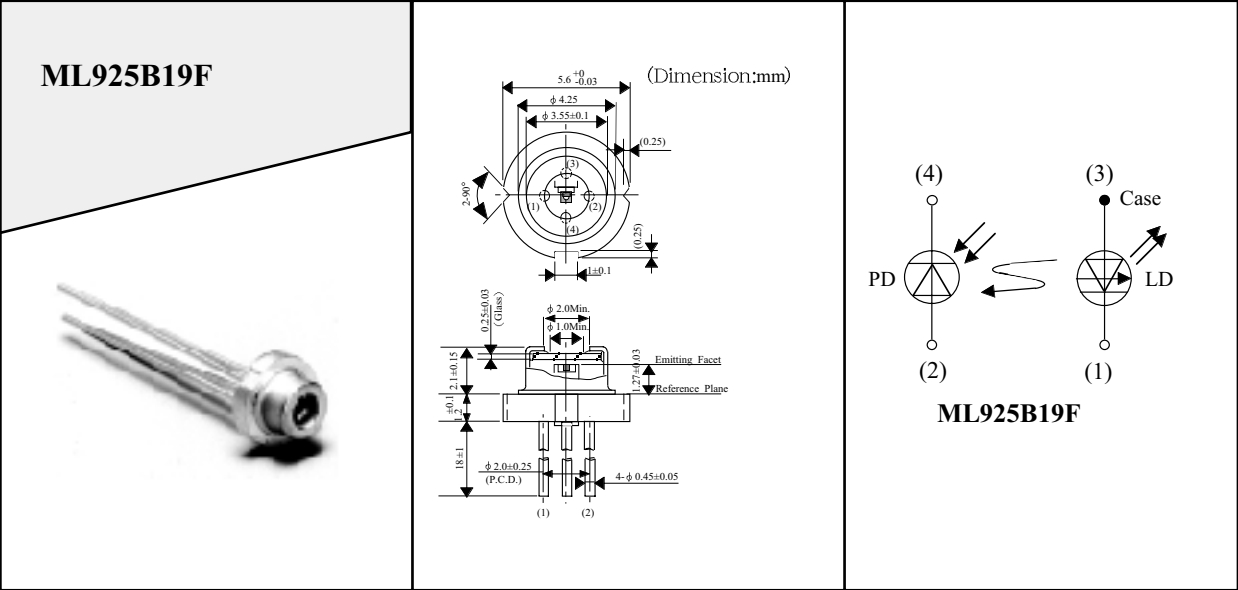
Symbol	Parameter	Conditions	Limits			Unit
			Min.	Typ.	Max.	
Ith	Threshold current	CW	-	15	30	mA
		CW, Tc=70°C	-	35	50	mA
Iop	Operation current	CW, Po=5mW	-	40	60	mA
		CW, Po=5mW, Tc=70°C	-	70	100	mA
Vop	Operating voltage	CW, Po=5mW	-	1.1	1.8	V
η	Slope efficiency	CW, Po=5mW	0.15	0.20	-	mW/mA
λ_p	Peak wavelength	CW, Po=5mW, Tc=0°C~+70°C	1530	1550	1570	nm
SMSR	Side mode suppression ratio	CW, Po=5mW, Tc=0°C~+70°C	35	45	-	dB
θ_{\parallel}	Beam divergence angle (parallel)	CW, Po=5mW	-	25	40	deg.
θ_{\perp}	(perpendicular)	CW, Po=5mW	-	30	47	deg.
fr	Resonance frequency	2.48832Gbps, I _{bias} =I _{th} , I _{pp} =40mA	-	11	-	GHz
tr,tf	Rise and fall time(10%-90%)	2.48832Gbps, I _{bias} =I _{th} , I _{pp} =40mA not including package	-	100	150	psec
Im	Monitoring 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



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OUTLINE DRAWINGS



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TYPICAL CHARACTERISTICS

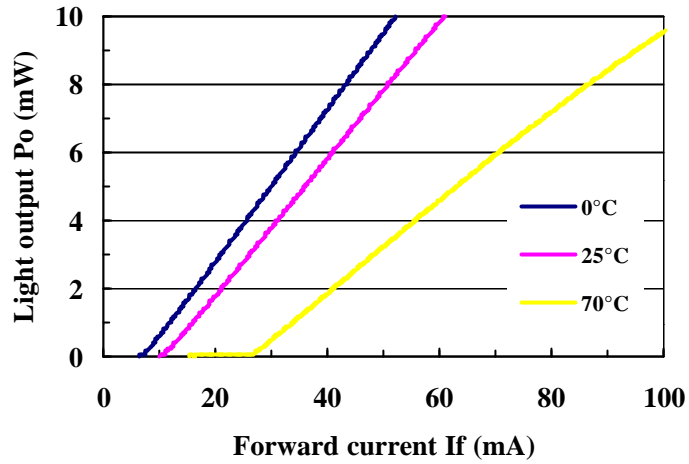


Fig. 1 Light output v.s. forward current

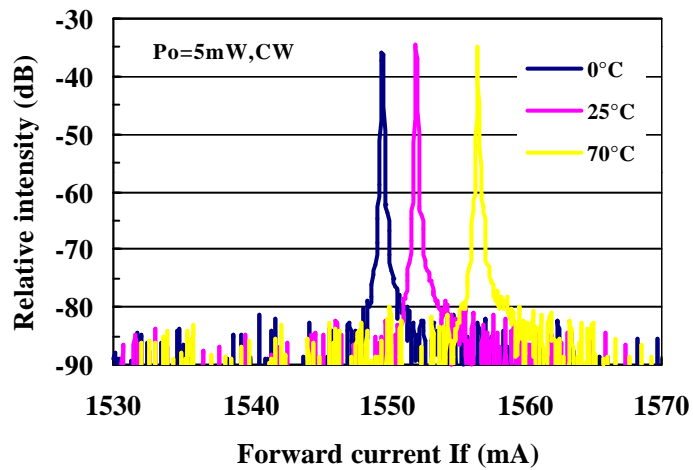


Fig. 2 Spectrum

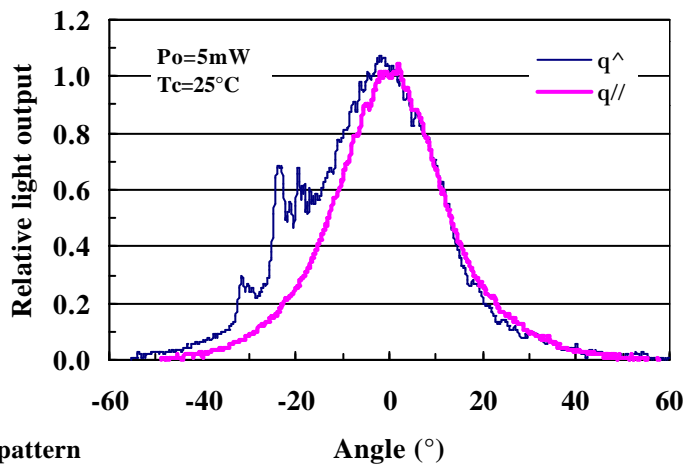


Fig. 3 Far field pattern