

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
$\theta_{ }$	Beam divergence angle (parallel)	CW, Po=5mW	-	25	40	deg.
$\theta_{\perp}$	(perpendicular)	CW, Po=5mW	-	30	47	deg.
fr	Resonance frequency	2.48832Gbps, Ibias=Ith, Ipp=40mA	-	11	-	GHz
tr,tf	Rise and fall time(10%-90%)	2.48832Gbps, Ibias=Ith, Ipp=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

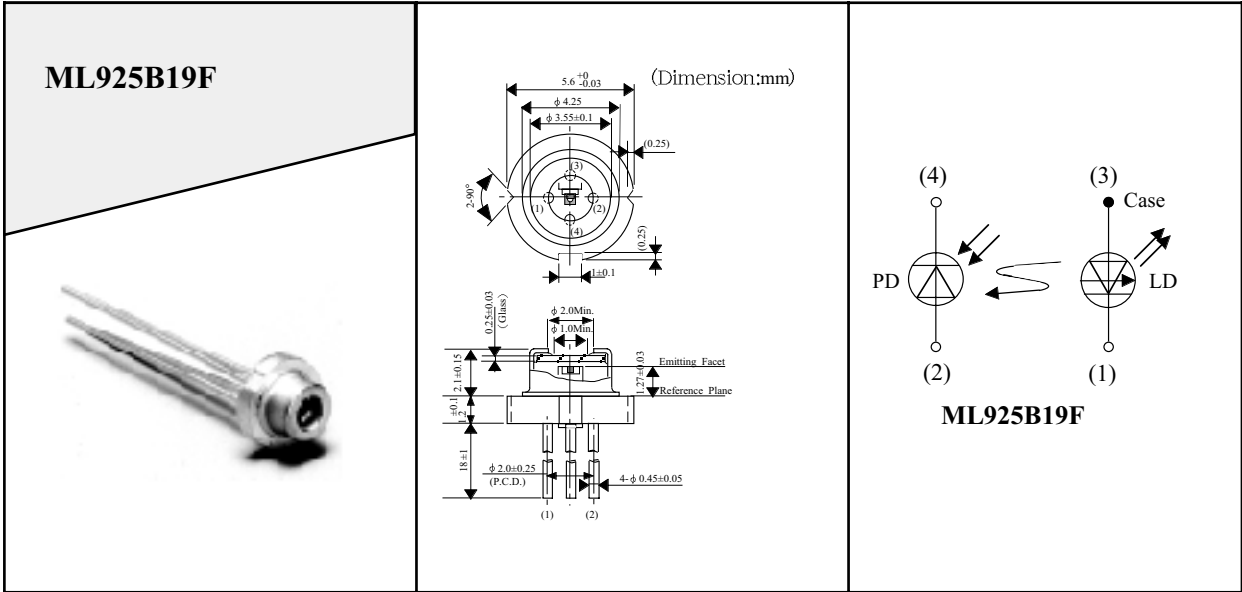


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OUTLINE DRAWINGS



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TYPICAL CHARACTERISTICS

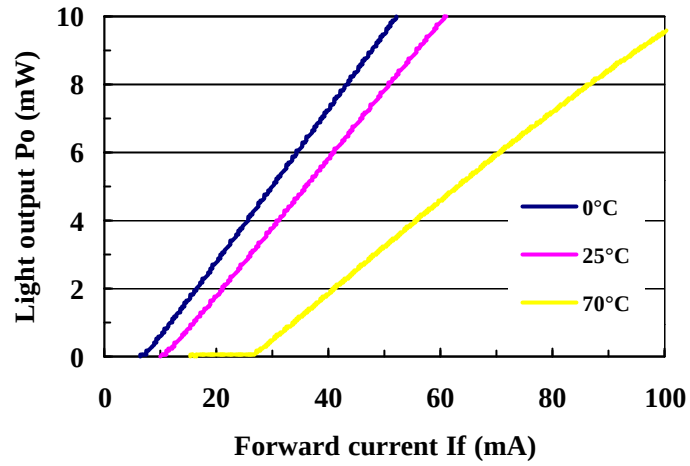


Fig. 1 Light output v.s. forward current

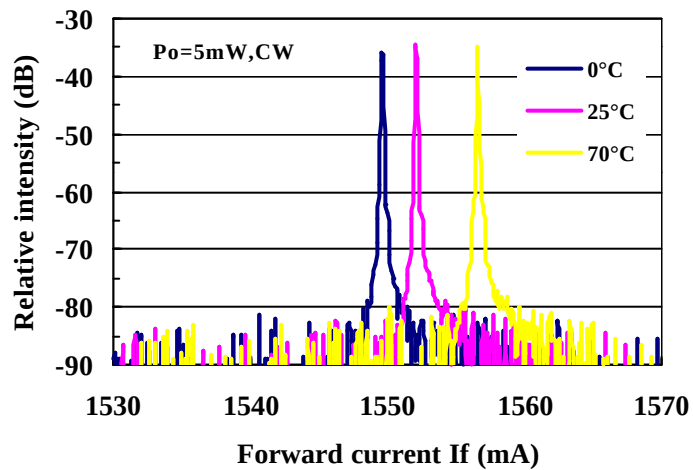


Fig. 2 Spectrum

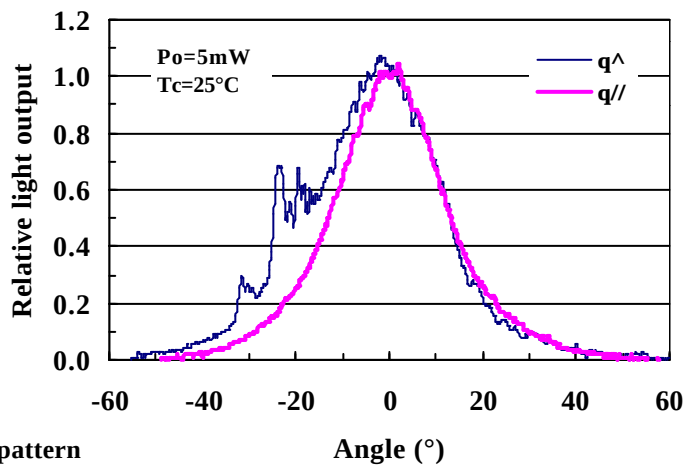


Fig. 3 Far field pattern