

ML9xx40 SERIES

Notice: Some parametric limits are subject to change

2.5Gbps InGaAsP DFB LASER DIODE

**TYPE
NAME**

ML925B40F / ML920J40S

DESCRIPTION

ML9XX40 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, ML9xx40 can operate in the wide temperature range from 0°C to 85 °C without any temperature control. They are well suited for light source in long distance digital transmission application.

FEATURES

- $\lambda/4$ shifted grating structure
- Wide temperature range operation (0°C to 85°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
IFD	PD forward current	-	2	mA
VRD	PD reverse voltage	-	20	V
Tc	Operation temperature	-	0 to +85	°C
Tstg	Storage temperature	-	-40 to +100	°C

ELECTRICAL/OPTICAL CHARACTERISTICS (Tc=25°C)

Symbol	Parameter	Conditions	Limits			Unit
			Min.	Typ.	Max.	
Ith	Threshold current	CW	---	10	15	mA
		CW, Tc=85°C	---	35	40	
Iop	Operation current	CW, Po=5mW	---	35	45	mA
		CW, Po=5mW, Tc=85°C	---	70	80	
Vop	Operating voltage	CW, Po=5mW	---	1.1	1.5	V
h	Slope efficiency	CW, Po=5mW	0.17	0.22	---	mW/mA
lp	Peak wavelength	CW, Po=5mW, Tc=0 to 85°C	1530	1550	1570	nm
SMSR	Side mode suppression ratio	CW, Po=5mW, Tc=0 to 85°C	35	45	---	dB
	Side mode suppression ratio(RF)	2.48832Gbps, Ib=Ith, Ipp=40mA	---	45	---	dB
$\theta_{//}$	Beam divergence angle (parallel)	CW, Po=5mW	---	30	---	deg.
$\theta_{\perp}$	(perpendicular)	CW, Po=5mW	---	35	---	
f _r	Resonance frequency	2.48832Gbps, Ib=Ith, Ipp=40mA	---	11	---	GHz
t _r , t _f	Rise and Fall time	2.48832Gbps, Ib=Ith, Ipp=40mA 20%-80%	---	80	120	psec
I _m	Monitoring current (PD)	CW, Po=5mW, VRD=1V, RL=10Ω	0.1	---	1.0	mA
I _d	Dark current (PD)	VRD=5V	---	---	0.1	μA
C _t	Capacitance (PD)	VRD=5V, f=1MHz	---	10	20	pF



ML920J40S