

ML9XX41 SERIES

InGaAsP DFB-LASER DIODE WITH EA MODULATOR

Notice: Some parametric limits are subject to change.

**TYPE
NAME**

ML9SM41

DESCRIPTION

ML9XX41 series are DFB (Distributed Feedback) laser diodes with a monolithically integrated EA modulator, suitable light source for 10Gbps application.

ML9SM41 is supplied with the chip-on-carrier type package.

FEATURES

- Dispersion penalty less than 2dB at 9.95328Gbps, +1600ps/nm
- High extinction ratio (Min. 10dB at 9.95328Gbps)
- High - side mode suppression ratio (Typ. 40dB)
- High speed response (Typ. 30psec)

APPLICATION

10Gbps transmission system

ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Conditions	Ratings	Unit
I_F	Forward current (Laser diode)	CW	150	mA
V_{RL}	Reverse voltage (Laser diode)	-	2	V
V_{EA}	Reverse voltage (Modulator)	-	-3	V
T_c	Case temperature	-	+25 to +40	degC
T_{stg}	Storage temperature	-	-40 to +100	degC

ELECTRICAL/OPTICAL CHARACTERISTICS ($T_c=35\text{degC}$)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{th}	Threshold current	CW, $V_{mod}=0V$	---	15	30	mA
I_{op}	Operation current	CW, $P_o=6.5mW$, $V_{mod}=0V$	---	85	100	mA
V_{op}	Operating voltage	CW, $P_o=6.5mW$, $V_{mod}=0V$	---	1.6	1.8	V
λ_p	Peak wavelength	CW, $I_f=I_{op}$, $V_{mod}=0V$	1530	---	1565	nm
$\theta_{//}$	Beam divergence angle (parallel)	CW, $P_o=6.5mW$, $V_{mod}=0V$	---	30	---	deg.
$\theta_{\perp}$	Beam divergence angle (perpendicular)	CW, $P_o=6.5mW$, $V_{mod}=0V$	---	42	---	deg.
P_m	Monitoring output power	CW, $P_o=6.5mW$, $V_{mod}=0V$	---	2.0	---	mW
f_c	Cut off frequency	CW, $I_f=I_{op}$, $V_{mod}=-1V$	10	14	---	GHz
$t_{r,tf}$	Rise and fall time (20%-80%)	9.95328Gbps, NRZ, PRBS $2^{23}-1$	---	---	30	psec
SMSR	Side mode suppression ratio	$I_f=I_{op}$, $V_{pp}=2V$,	35	40	---	dB
Ex	Extinction ratio	$V_{offset}=0$ to $-1.0V$	10	---	---	dB
Pp	Dispersion penalty	ditto +1600ps/nm @BER=10-10	---	---	2.0	dB



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OUTLINE DRAWINGS

