

PRELIMINARY

Notice : This is not a final
Some parametric limits are subject to change.

MITSUBISHI LASER DIODES ML9XX17 SERIES

InGaAsP MQW-DFB LASER DIODE WITH EA MODULATOR

TYPE
NAME

ML9XX17

DESCRIPTION

ML9XX17 series are DFB (Distributed Feedback) laser diodes with a monolithically integrated EA (Electro-Absorption) modulator emitting light beam at 1550nm.

The laser is suitable to a light source for use in ultra-long-haul transmission over 700km.

FEATURES

DFB laser diode integrated with EA (Electro-Absorption) modulator

2.5Gb/s long-haul transmission over 700km

High side-mode-suppression-ratio (typical 40dB)

High extinction ratio

Optional wavelength in range of 1545nm to 1560nm is available

APPLICATION

2.5Gb/s trunk-line systems

ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Conditions	Ratings	Unit
IF	Laser forward current	CW	200	mA
VRL	Laser reverse voltage	-	2	V
VEA	Modulator voltage	-	0 - -3	V
Tc	Case temperature	-	+ 15 - +35	deg.C
Tstg	Storage temperature	-	- 40 -+100	deg.C

ELECTRICAL/OPTICAL CHARACTERISTICS (Tc=25deg.C)

Symbol	Parameter	Test conditions	Min.	Typ.	Max	Unit
I _{th}	Threshold current	CW, V _{mod} =0V	-	10	30	mA
I _{op}	Operation current	CW, P _o =5mW, V _{mod} =0V	-	80	150	mA
V _{op}	Operating voltage	CW, P _o =5mW, V _{mod} =0V	-	1.5	2.0	V
W _p	Peak wavelength	CW, P _o =5mW, V _{mod} =0V	-	1550	-	nm
FFP _h	Beam divergence angle (parallel)	CW, P _o =5mW, V _{mod} =0V	-	30	-	deg.
FFP _v	Beam divergence angle (perpendicular)	CW, P _o =5mW, V _{mod} =0V	-	45	-	deg.
P _m	Monitoring output	CW, P _o =5mW, V _{mod} =0V	-	1.0	-	mW
f _c	Cutoff frequency (-3dB)	CW, P _o =5mW, V _{mod} =-1V	4.0	6.0	-	GHz
Ex	Extinction Ratio	CW, P _o =5mW, V _{mod} =-2.5V	10	15	-	dB
tr,tf	Rise and fall time(10%-90%)	2.48832Gb/s, NRZ, PRBS2 ²³ -1	-	-	120	psec
SMSR	Side mode suppression ratio	I _f =I _{op} V _{pp} =0 - 2.5V	35	40	-	dB
dW	Wavelength Excursion		-	0.01	-	nm
P _p	Power penalty	ditto SMF 700km (D=12000ps/nm) @BER = 10 ⁻¹⁰	-	1.0	-	dB