

PRELIMINARY

MITSUBISHI LASER DIODES

ML7XX34 SERIES

Notice: This is not a final specification

Notice : Some parametric limits are subject to change

2.5Gbps InGaAsP DFB LASER DIODE

**TYPE
NAME****ML725B34F / ML720J34S
ML725J34F / ML720L34S****DESCRIPTION**

ML7XX34 series are uncooled DFB (Distributed Feedback) laser diodes for 2.5Gbps transmission emitting light beam at 1310nm. ML7XX34 can operate in the wide temperature range from -40°C to 95 °C without any temperature control.

APPLICATION

2.5Gbps transmission

FEATURES

- Wide temperature range operation (-40°C to 95°C)
- High side-mode-suppression-ratio (typical 40dB)
- High resonance frequency (typical 11GHz)

ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Conditions	Ratings	Unit
P _o	Output power	CW	10	mW
I _f	Forward current (Laser diode)	---	150	mA
V _{RL}	Reverse voltage (Laser diode)	---	2	V
I _{FD}	Forward current (Photo diode)	---	2	mA
V _{RD}	Reverse voltage (Photo diode)	---	20	V
T _c	Case temperature	---	-40 to +95	°C
T _{stg}	Storage temperature	---	-40 to +100	°C

ELECTRICAL/OPTICAL CHARACTERISTICS (T_c=25°C)

Symbol	Parameter	Test conditions	Min.	Typ.	Max.	Unit
I _{th}	Threshold current	CW	---	7	12	mA
		CW, T _c =95°C	---	30	40	
I _{op}	Operation current	CW, P _o =5mW	---	24	40	mA
		CW, P _o =5mW, T _c =95°C	---	60	75	
V _{op}	Operating voltage	CW, P _o =5mW	---	1.1	1.5	V
η	Slope efficiency	CW, P _o =5mW	0.30	0.36	---	mW/mA
λ _p	Peak wavelength	CW, P _o =5mW, T _c =-40 to 95°C	1290	1310	1330	nm
SMSR	Side mode suppression ratio	CW, P _o =5mW, T _c =-40 to 95°C	35	40	---	dB
θ _{//}	Beam divergence angle (parallel) <*1>	CW, P _o =5mW	---	30	---	deg.
θ _⊥	(perpendicular) <*1>	CW, P _o =5mW	---	35	---	deg.
f _r	Resonance frequency	2.48832Gbps, I _b =I _{th} , I _{pp} =40mA	---	11	---	GHz
t _r , t _f	Rise and Fall time <*2>	2.48832Gbps, I _b =I _{th} , I _{pp} =40mA 20%-80%	---	80	120	ps
I _m	Monitoring output current (PD)	CW, P _o =5mW, V _{RD} =1V, R _L =10Ω	0.05	0.3	2.0	mA
I _d	Dark current (PD)	V _{RD} =5V	---	---	0.1	μA
C _t	Capacitance (PD)	V _{RD} =5V	---	10	20	pF

<*1> Beam divergence is not applied to ML725J34F and ML720L34S.

<*2> Except influence of the 18mm lead.

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OUTLINE DRAWINGS

