

**PRELIMINARY****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 <sub>o</sub>	Output power	CW	10	mW
I <sub>f</sub>	Forward current (Laser diode)	---	150	mA
V <sub>RL</sub>	Reverse voltage (Laser diode)	---	2	V
I <sub>FD</sub>	Forward current (Photo diode)	---	2	mA
V <sub>RD</sub>	Reverse voltage (Photo diode)	---	20	V
T <sub>c</sub>	Case temperature	---	-40 to +95	°C
T <sub>stg</sub>	Storage temperature	---	-40 to +100	°C

**ELECTRICAL/OPTICAL CHARACTERISTICS (T<sub>c</sub>=25°C)**

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

&lt;\*1&gt; Beam divergence is not applied to ML725J34F and ML720L34S.

&lt;\*2&gt; Except influence of the 18mm lead.

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OUTLINE DRAWINGS

