

PRELIMINARY
 • Notice: This is not a final specification.
 Some parameter limits are subject to change.

MITSUBISHI LASER DIODES ML6XX8 SERIES

FOR OPTICAL COMMUNICATION

MITSUBISHI (DISCRETE SC) 3LE D ■ 6249829 0014169 3 ■ MITS

TYPE
 NAME

**ML6418N, ML6418C, ML6418R,
 ML6708E**

T-41-05

DESCRIPTION

Mitsubishi ML6XX8 are AlGaAs laser diodes emitting light beams around 780nm wavelength. They lase by applying forward current exceeding threshold values, and emit light power of about 30mW/facet at an operating current of around 70mA in excess of the threshold current. They operate, under CW or pulse conditions according to input current, at case temperatures up to 60°C.

ML6XX8 are hermetically sealed devices having a Si photodiode for monitoring the light output. Output current of the photodiode can be used for automatic control of the operating currents or case temperatures of the lasers. They are well suited for writing and reading memory disks.

FEATURES

- Low threshold current, 50mA typ.
- Electrical monitoring output
 (DC and RF monitoring are possible)
- Monitoring photodiode is isolated from laser diode

APPLICATION

Writing and reading memory disks, laser beam printers

ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Conditions	Ratings	Unit
P _O	Light output	CW	35	mW
		Pulse (Note 1)	45	
V _{RL}	Reverse voltage (Laser diode)	—	2	V
V _{RO}	Reverse voltage (Photodiode)	—	30	V
I _{FO}	Forward current (Photodiode)	—	10	mA
T _C	Case temperature	—	-40~+60	°C
T _{stg}	Storage temperature	—	-55~+100	°C

Note 1 : Duty less than 50%, pulse width less than 1μs.

ELECTRICAL/OPTICAL CHARACTERISTICS (T_C=25°C)

Symbol	Parameter	Test conditions	Limits			Unit
			Min.	Typ.	Max.	
I _{th}	Threshold current	CW	—	50	70	mA
I _{OP}	Operating current	CW, P _O =30mW	—	120	165	mA
V _{OP}	Operating voltage (Laser diode)	CW, P _O =30mW	—	2.0	2.5	V
I _D	Dark current (Photodiode)	V _{RO} =10V	—	—	0.5	μA
P _O	Light output	CW, I _F =I _{th} +70mA	—	30	—	mW
λ _P	Lasing wavelength	CW, P _O =30mW	765	780	795	nm
θ	Full angle at half maximum	CW, P _O =30mW	8	12	16	deg.
θ _⊥			—	23	27	
C _t	Capacitance (Photodiode)	V _{RO} =0V, f=1MHz	—	7	—	pF
I _m	Monitoring output current	CW, P _O =30mW V _{RO} =1V R _L =10Ω (Note 2)	1.0	3.0	6.0	mA

Note 2 : R_L is load resistance of the photodiode.

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OUTLINE DRAWINGS

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