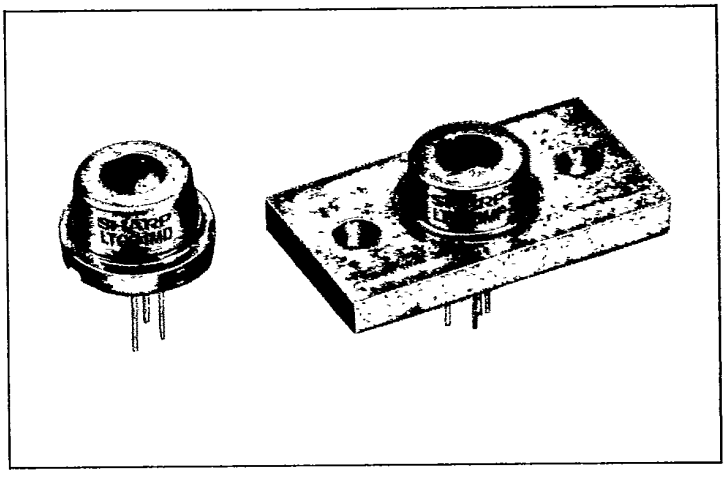
LT031MD/MF

Features

- High power (maximum optical power output: 10mW)
- Wavelength: 750nm
- Single transverse mode

Applications

- High speed laser printers
- Bar code readers
- Analysis instruments
- Information processing equipment



Absolute Maximum Ratings

(Tc=25°C)

Parameter		Symbol	Ratings	Units
Optical power output		Po	10	mW
Reverse voltage	Laser	V_R	2	V
	PIN		30	
Operating temperature *1		Topr	−10~+60	°C
Storage temperature *1		Tstg	−40~+85	°C
Soldering temperature *2		Tsol	260 (less than 5 seconds)	°C

*1 Case temperature *2 At point 1.6 mm from lead base

Electro-optical Characteristics *1

(Tc=25°C)

Parameter			Symbol	Condition	Ratings MIN	Ratings TYP	Ratings MAX	Units
Threshold current			Ith	—	—	50	80	mA
Operating current			Iop	Po=7mW	—	55	95	mA
Operating voltage			Vop	Po=7mW	—	1.85	2.3	V
Wavelength *2			λp	Po=7mW	740	750	760	nm
Monitor current			Im	Po=7mW V_R=15V	0.017	0.05	0.175	mA
Radiation characteristics	Angle *3	Parallel to junction	θ //	Po=7mW	7	10	16	deg
		Perpendicular to junction	$\theta\perp$	Po=7mW	20	35	48	deg
	Ripple			Po=7mW	—	—	±20	%
Emission point accuracy	Angle		$\Delta\phi$ //	Po=7mW	—	—	±2	deg
			$\Delta\phi\perp$	Po=7mW	—	—	±3	deg
	Position *4		Δx, Δy, Δz	—	—	—	±80	μm
Differential efficiency			η	$\frac{4mW}{I_F(7mW)-I_F(3mW)}$	0.1	0.6	0.9	mW/mA

*1 Initial value
*2 Single transverse mode
*3 Angle at 50% peak intensity (full width at half-maximum)
*4 Not specified for LT031MF

Electrical Characteristics of Photodiode

(Tc=25°C)

Parameter	Symbol	Condition	Ratings MIN	Ratings TYP	Ratings MAX	Units
Sensitivity	S	V_R=15V	—	7.1	—	mA/mW
Dark current	I_D	V_R=15V	—	—	150	nA
Terminal capacitance	Ct	V_R=15V	—	8	20	pF

LT031 Series Characteristics Diagrams

Fig. 47-1 Forward Current vs. Forward Voltage

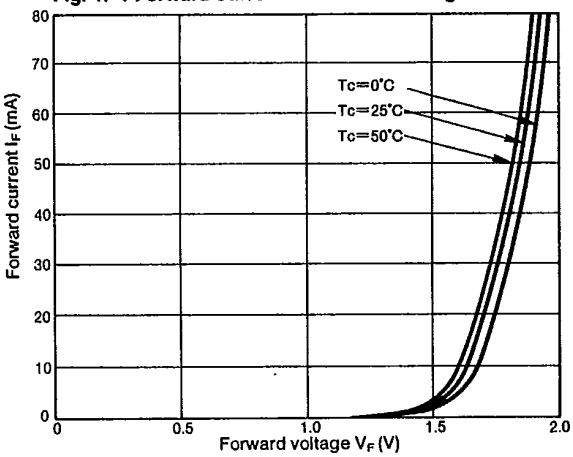


Fig. 47-2 Optical Power Output vs. Forward Current and Monitor Current

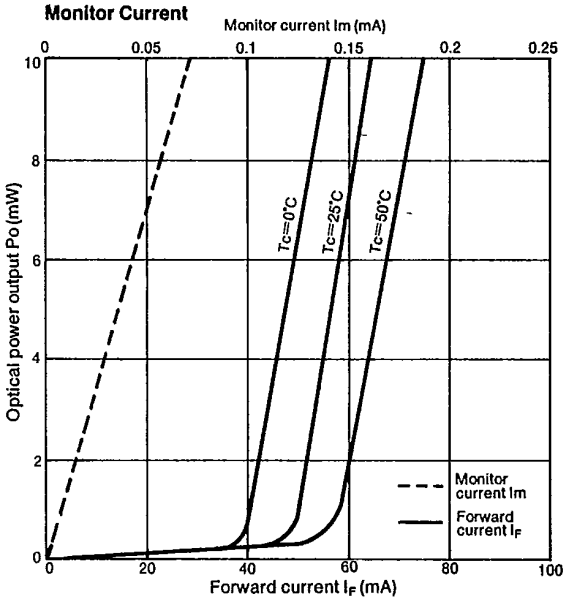


Fig. 47-3 Threshold Current vs. Temperature

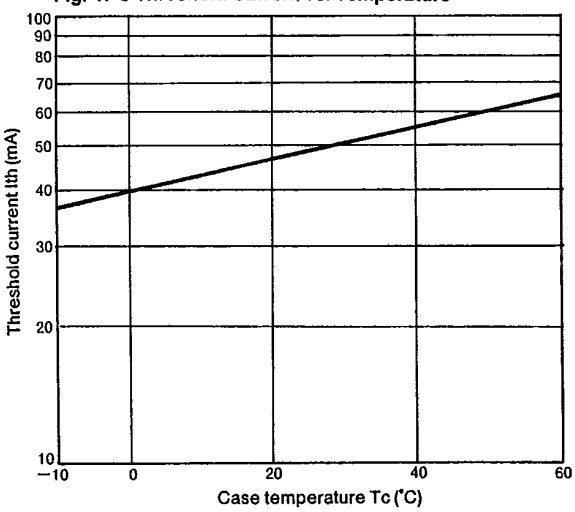


Fig. 47-4 Wavelength vs. Temperature

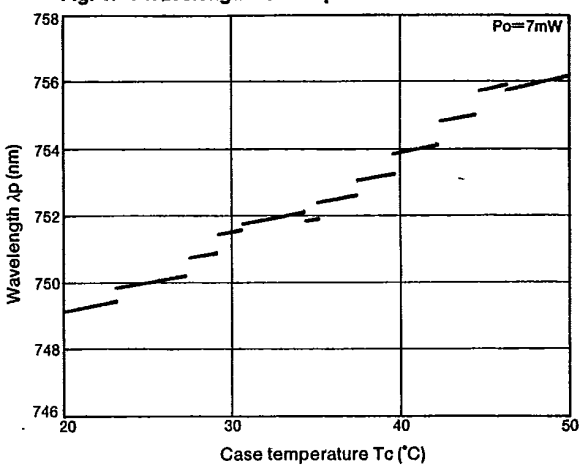
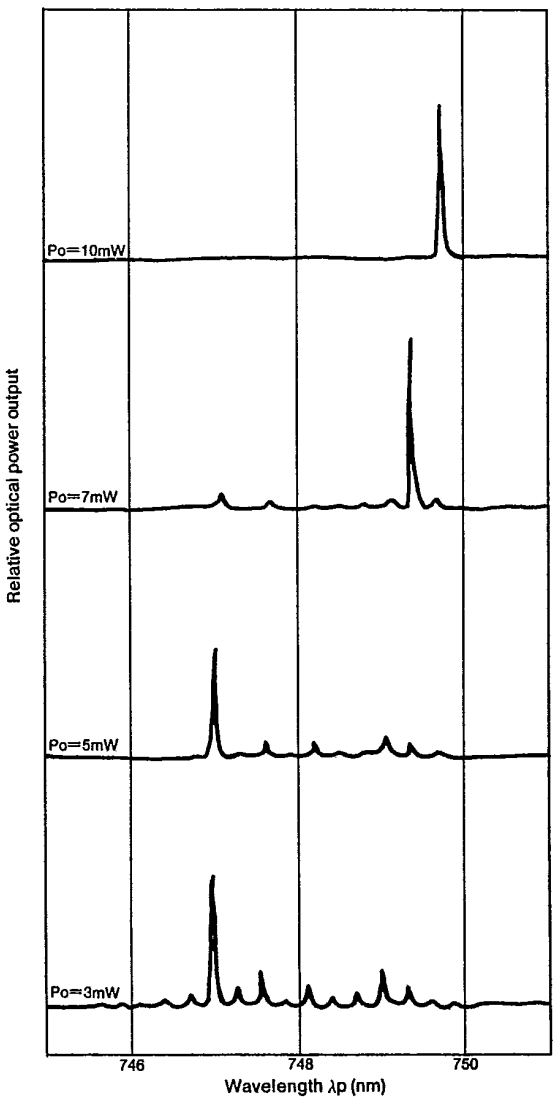


Fig. 47-5 Optical Power Output Dependence of Wavelength



Note: All data on this page is typical only, and is not intended as a specification. The shapes of these curves can be used as a general reference, but the actual characteristics will vary from device to device.