

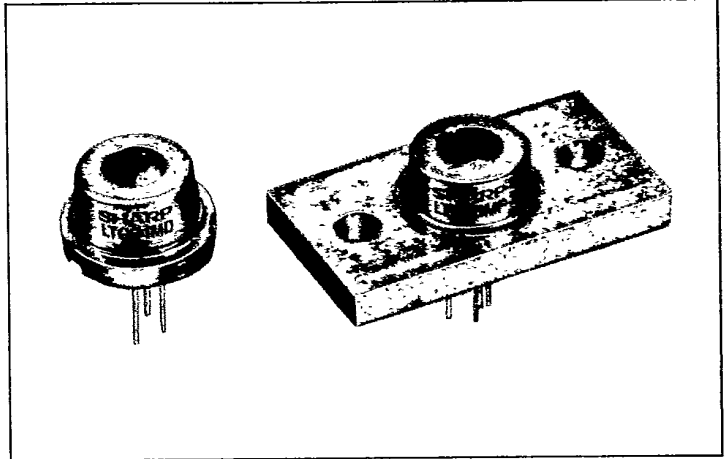
LT031MD/MF

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

(T_c=25°C)

Parameter	Symbol	Rating	Units
Optical power output	P _o	10	mW
Reverse voltage	Laser	2	V
	PIN	30	
Operating temperature*1	T _{opr}	-10 ~ +60	°C
Storage temperature*1	T _{stg}	-40 ~ +85	°C
Soldering temperature*2	T _{sol}	260 (less than 5 seconds)	°C

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

Electro-optical Characteristics*1

(T_c=25°C)

Parameter	Symbol	Condition	Ratings			Units	
			MIN	TYP	MAX		
Threshold current	I _{th}	—	—	50	80	mA	
Operating current	I _{op}	P _o =7mW	—	55	95	mA	
Operating voltage	V _{op}	P _o =7mW	—	1.85	2.3	V	
Wavelength*2	λ _p	P _o =7mW	740	750	760	nm	
Monitor current	I _m	P _o =7mW V _R =15V	0.017	0.05	0.175	mA	
Radiation characteristics	Angle*3	Parallel to junction	θ	7	10	16	deg
		Perpendicular to junction	θ _⊥	20	35	48	deg
	Ripple	P _o =7mW	—	—	±20	%	
Emission point accuracy	Angle	Δφ	P _o =7mW	—	—	±2	deg
		Δφ _⊥	P _o =7mW	—	—	±3	deg
	Position*4	Δx, Δy, Δz	—	—	—	±80	μm
Differential efficiency	η	4mW I _F (7mW) - I _F (3mW)	0.1	0.6	0.9	mW/mA	

*1 Initial value *3 Angle at 50% peak intensity (full width at half-maximum)

*2 Single transverse mode

*4 Not specified for LT031MF

Electrical Characteristics of Photodiode

(T_c=25°C)

Parameter	Symbol	Condition	Ratings			Units
			MIN	TYP	MAX	
Sensitivity	S	V _R =15V	—	7.1	—	mA/mW
Dark current	I _D	V _R =15V	—	—	150	nA
Terminal capacitance	C _t	V _R =15V	—	8	20	pF

LT031 Series Characteristics Diagrams

Fig. 47-1 Forward Current vs. Forward Voltage

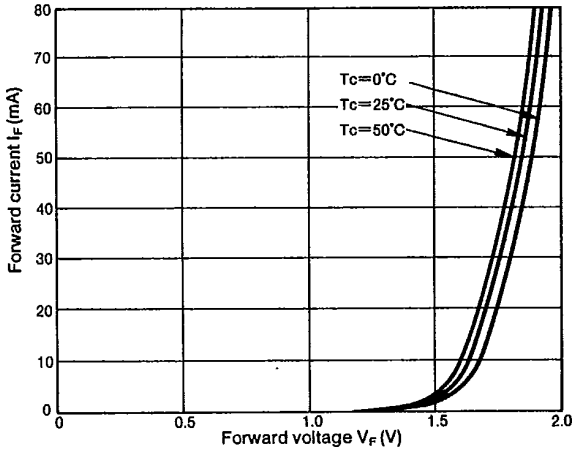


Fig. 47-4 Wavelength vs. Temperature

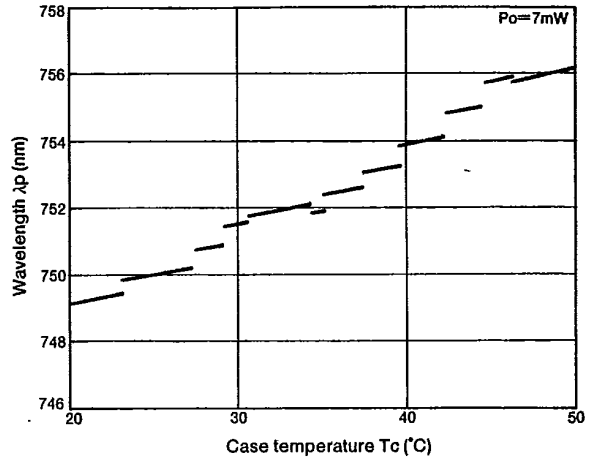


Fig. 47-2 Optical Power Output vs. Forward Current and Monitor Current

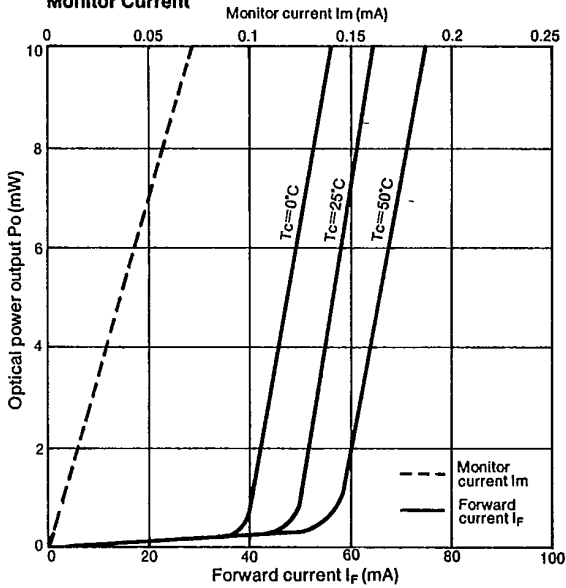


Fig. 47-5 Optical Power Output Dependence of Wavelength

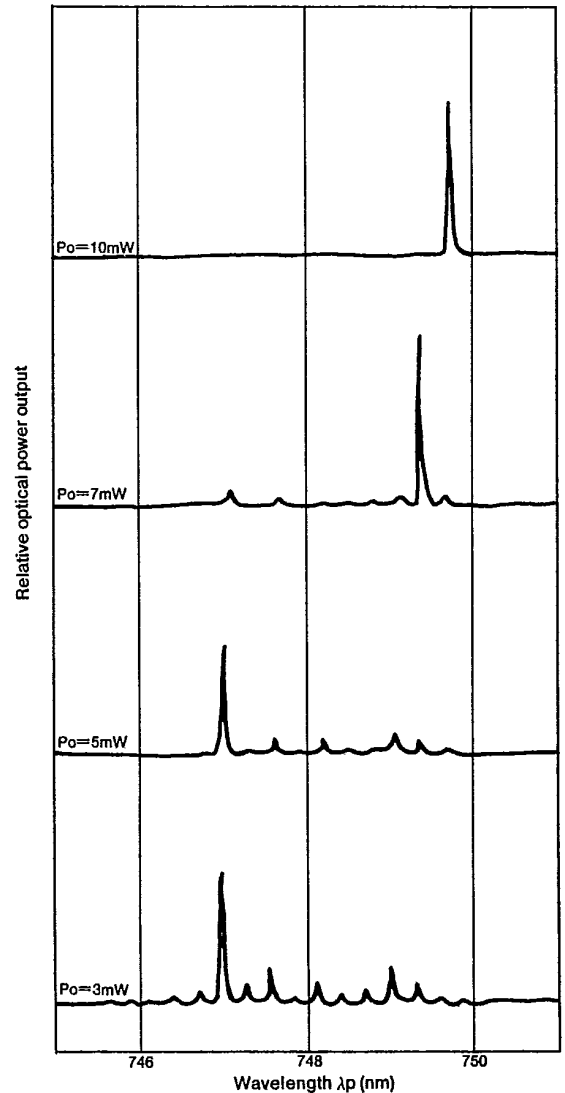
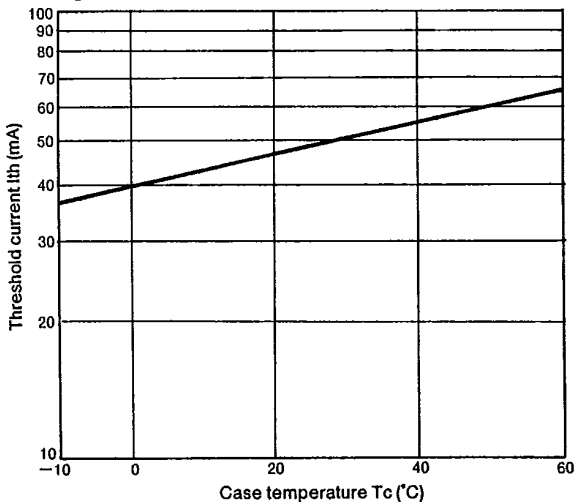


Fig. 47-3 Threshold Current vs. Temperature



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.