

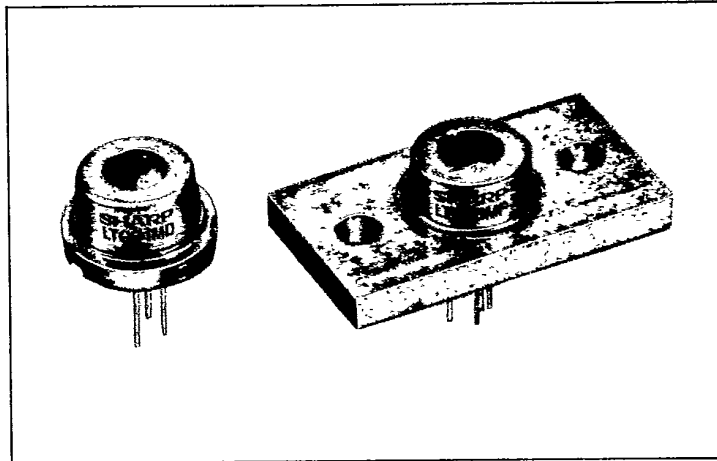
# LT031MD/MF

## 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<sub>c</sub>=25°C)

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

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

## Electro-optical Characteristics\*<sup>1</sup>

(T<sub>c</sub>=25°C)

Parameter	Symbol	Condition	Rating			Units		
			MIN	TYP	MAX			
Threshold current	I <sub>th</sub>	—	—	50	80	mA		
Operating current	I <sub>op</sub>	P <sub>o</sub> =7mW	—	55	95	mA		
Operating voltage	V <sub>op</sub>	P <sub>o</sub> =7mW	—	1.85	2.3	V		
Wavelength* <sup>2</sup>	λ <sub>p</sub>	P <sub>o</sub> =7mW	740	750	760	nm		
Monitor current	I <sub>m</sub>	P <sub>o</sub> =7mW V <sub>R</sub> =15V	0.017	0.05	0.175	mA		
Radiation characteristics	Angle* <sup>3</sup>	Parallel to junction	θ <sub>  </sub>	P <sub>o</sub> =7mW	7	10	16	deg
		Perpendicular to junction	θ <sub>⊥</sub>	P <sub>o</sub> =7mW	20	35	48	deg
	Ripple	P <sub>o</sub> =7mW	—	—	±20	%		
Emission point accuracy	Angle	Δφ <sub>  </sub>	P <sub>o</sub> =7mW	—	—	±2	deg	
		Δφ <sub>⊥</sub>	P <sub>o</sub> =7mW	—	—	±3	deg	
	Position* <sup>4</sup>	—	—	—	±80	μm		
Differential efficiency	η	4mW I <sub>F</sub> (7mW) - I <sub>F</sub> (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)

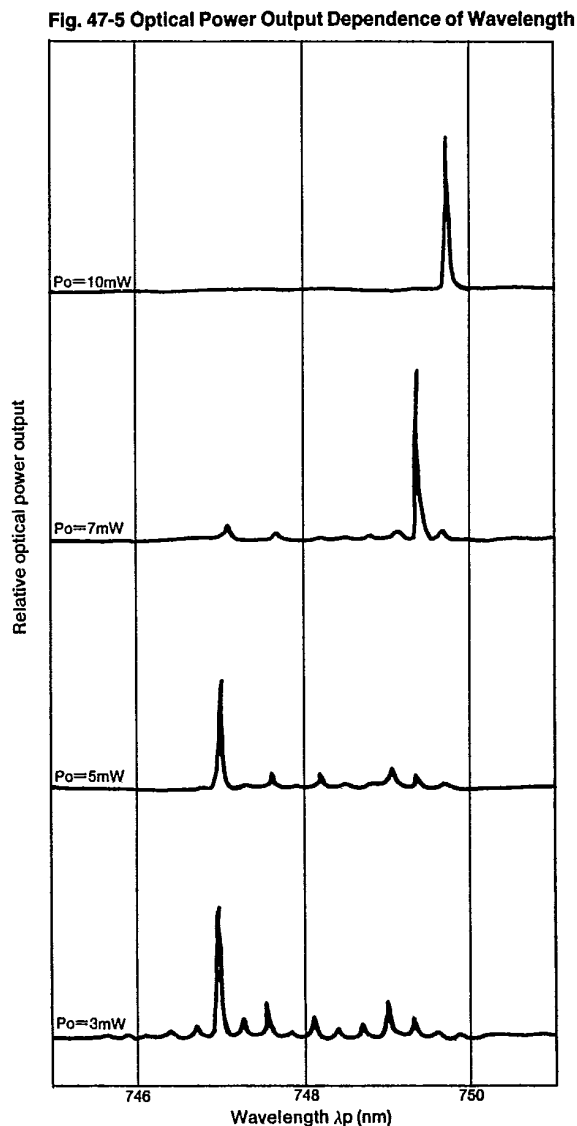
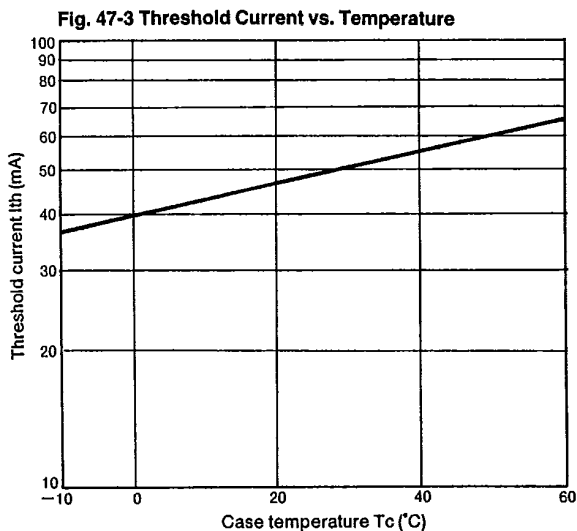
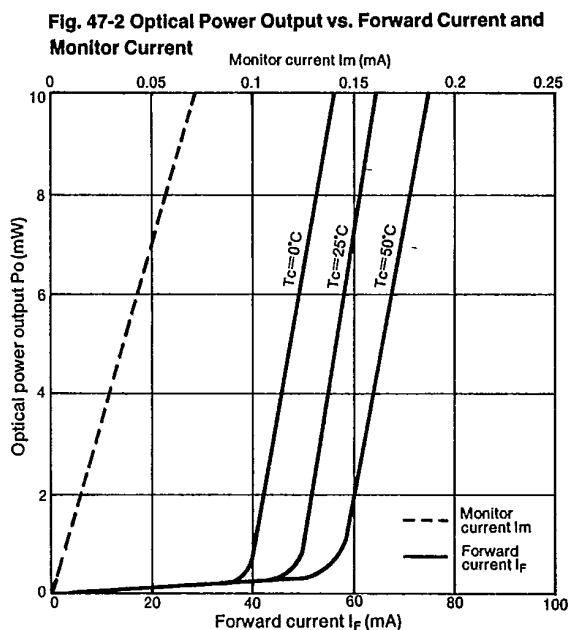
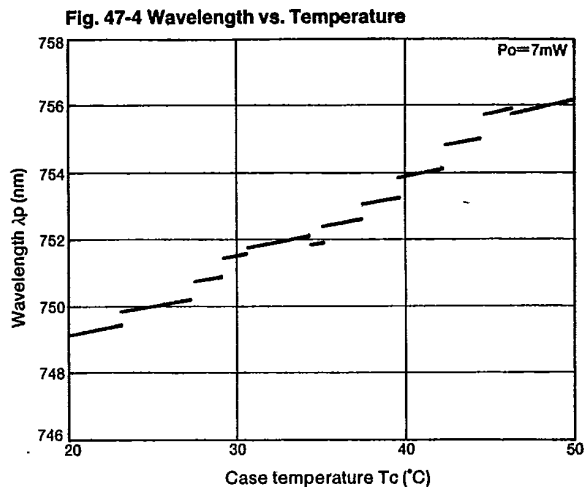
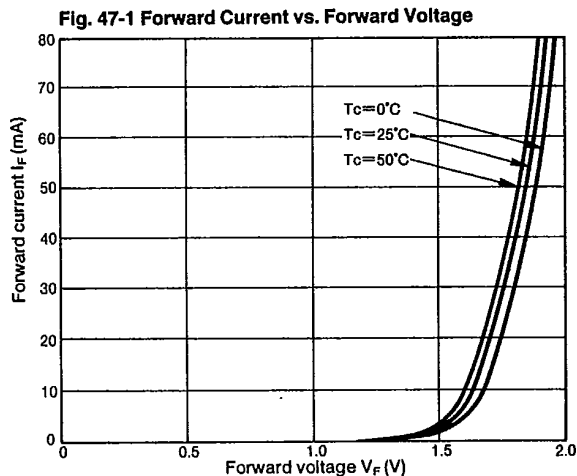
\*4 Not specified for LT031MF

## Electrical Characteristics of Photodiode

(T<sub>c</sub>=25°C)

Parameter	Symbol	Condition	Rating			Units
			MIN	TYP	MAX	
Sensitivity	S	V <sub>R</sub> =15V	—	7.1	—	mA/mW
Dark current	I <sub>D</sub>	V <sub>R</sub> =15V	—	—	150	nA
Terminal capacitance	C <sub>t</sub>	V <sub>R</sub> =15V	—	8	20	pF

# LT031 Series Characteristics Diagrams



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.