

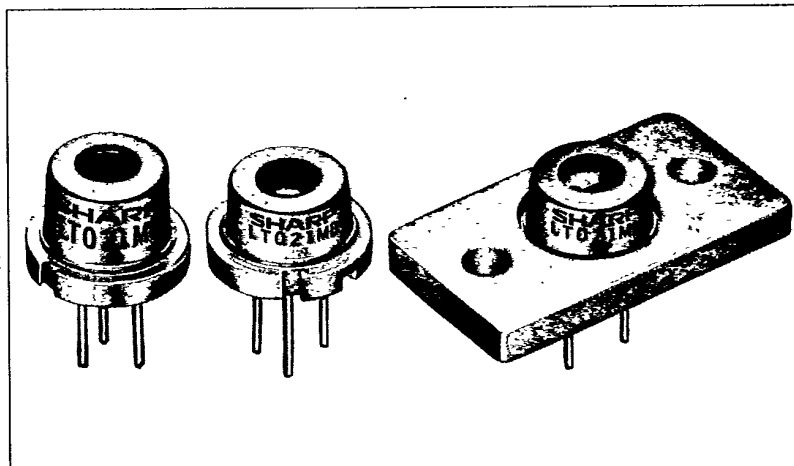
# LT021MC/MD/MF

## Features

- High power (maximum optical power output: 15 mW)
- Wavelength: 780nm
- Single transverse mode

## Applications

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



## Absolute Maximum Ratings

(T<sub>c</sub>=25°C)

Parameter	Symbol	Ratings	Units
Optical power output	P <sub>o</sub>	15	mW
Reverse voltage	V <sub>R</sub>	Laser	2
		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	Ratings			Units	
			MIN	TYP	MAX		
Threshold current	I <sub>th</sub>	—	—	45	80	mA	
Operating current	I <sub>op</sub>	P <sub>o</sub> =10mW	—	75	110	mA	
Operating voltage	V <sub>op</sub>	P <sub>o</sub> =10mW	—	1.8	2.5	V	
Wavelength* <sup>2</sup>	λ <sub>p</sub>	P <sub>o</sub> =10mW	770	780	790	nm	
Monitor current	I <sub>m</sub>	P <sub>o</sub> =10mW V <sub>R</sub> =15V	1.0	3.0	5.0	mA	
Radiation angles* <sup>3</sup>	Parallel to junction	θ <sub>  </sub>	P <sub>o</sub> =10mW	8	11	16	deg
	Perpendicular to junction	θ <sub>⊥</sub>	P <sub>o</sub> =10mW	20	33	45	deg
Emission point accuracy	Angle	Δφ <sub>  </sub>	P <sub>o</sub> =10mW	—	—	±2	deg
		Δφ <sub>⊥</sub>	P <sub>o</sub> =10mW	—	—	±3	deg
	Position* <sup>4</sup>	Δx, Δy, Δz	—	—	—	±80	μm

\*1 Initial value

\*2 Single transverse mode

\*3 Angle at 50% peak intensity (full width at half-maximum)

\*4 Not specified for LT021MF

## Electrical Characteristics of Photodiode

(T<sub>c</sub>=25°C)

Parameter	Symbol	Condition	Ratings			Units
			MIN	TYP	MAX	
Sensitivity	S	V <sub>R</sub> =15V	—	0.3	—	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	—	pF

# LT021 Series Characteristics Diagrams

Fig. 51-1 Forward Current vs. Forward Voltage

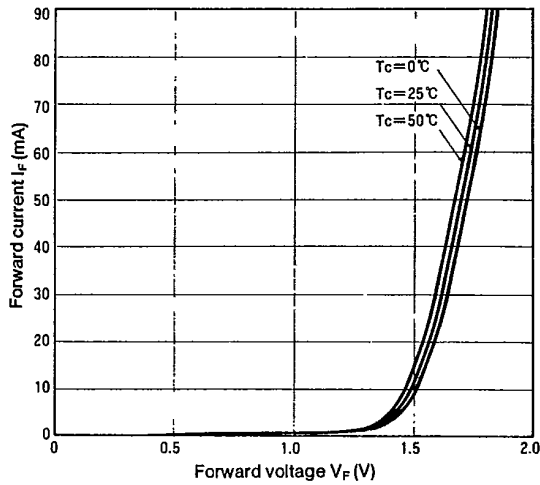


Fig. 51-4 Wavelength vs. Temperature

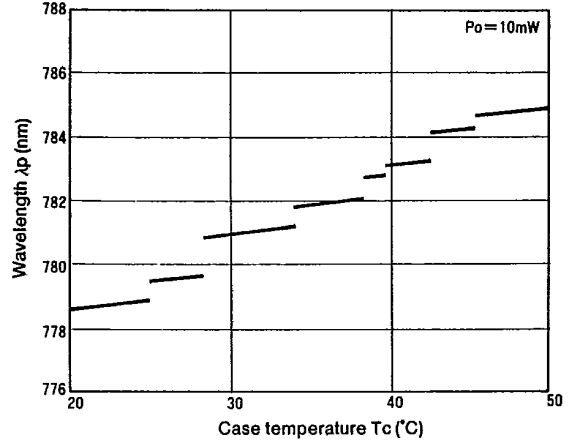


Fig. 51-2 Optical Power Output vs. Forward Current and Monitor Current

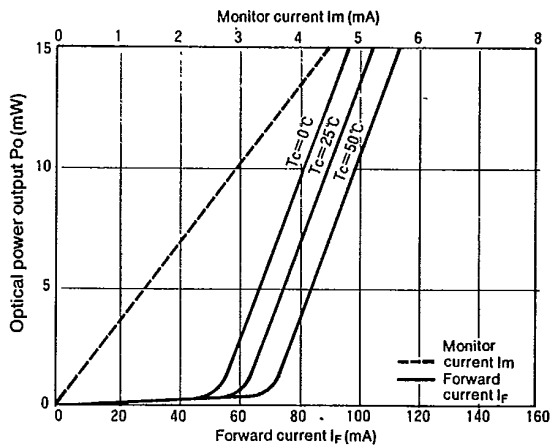


Fig. 51-5 Optical Power Output Dependence of Wavelength

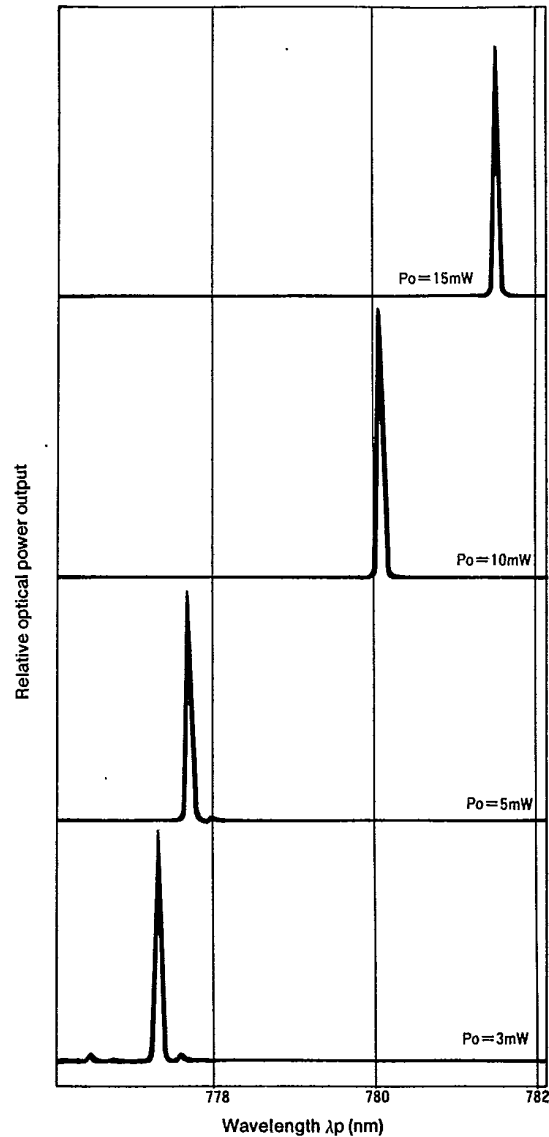
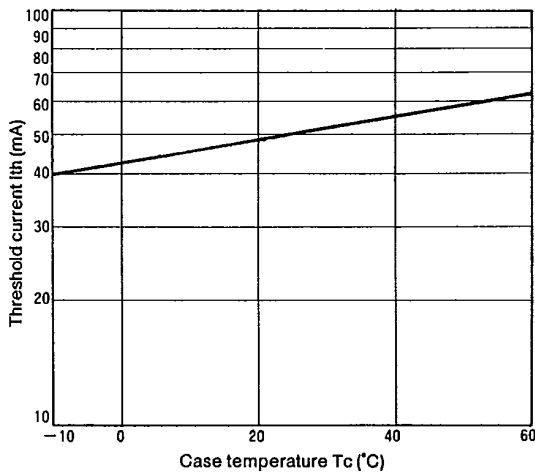


Fig. 51-3 Threshold Current vs. Temperature



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.