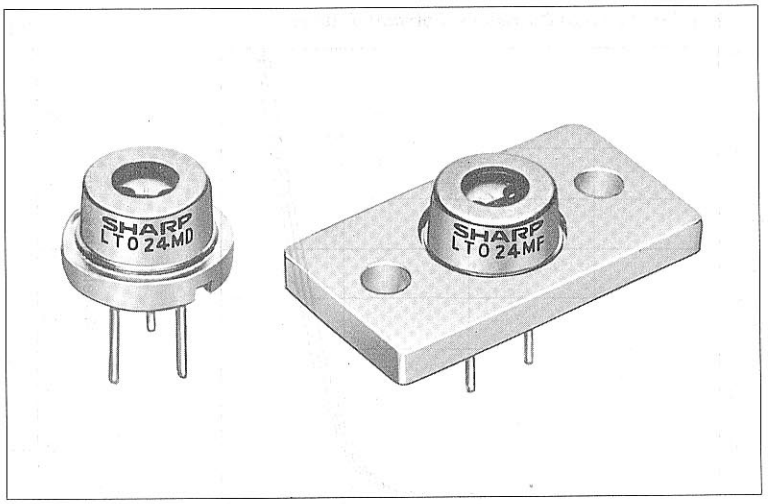
LT024MD/MF

Features

- High power (maximum optical power output: 30 mW)
- Wavelength: 780nm
- Single transverse mode

Applications

- Optical disk memories
- Information processing equipment



Absolute Maximum Ratings

(Tc=25°C)

Parameter		Symbol	Ratings	Units
Optical power output		Po	30	mW
Reverse voltage	Laser	V_R	2	V
	PIN		30	
Operating temperature *1		Topr	−10 to +50	°C
Storage temperature *1		Tstg	−40 to +85	°C

*1 Case temperature

Electro-optical Characteristics *1

(Tc=25°C)

Parameter			Symbol	Condition	Ratings MIN	Ratings TYP	Ratings MAX	Units
Threshold current			Ith	—	—	55	80	mA
Operating current			Iop	Po=20mW	—	85	120	mA
Operating voltage			Vop	Po=20mW	—	1.85	2.2	V
Wavelength *2			λp	Po=20mW	765	780	795	nm
Monitor current			Im	Po=20mW V_R=15V	50	160	500	μA
Radiation characteristics	Angle *3	Parallel to junction	θ//	Po=20mW	8	10	14	deg
		Perpendicular to junction	θ⊥	Po=20mW	20	29	38	deg
	Ripple			Po=20mW	—	—	±20	%
Emission point accuracy	Angle		Δφ//	Po=20mW	—	—	±2	deg
			Δφ⊥	Po=20mW	—	—	±3	deg
	Position *4		Δx, Δy, Δz	—	—	—	±80	μm
Differential efficiency			η	$\frac{10mW}{I_F(20mW)-I_F(10mW)}$	0.5	0.75	1.1	mW/mA

*1 Initial value
*2 Single transverse mode
*3 Angle at 50% peak intensity (full width at half-maximum)
*4 Not specified for LT024MF

Electrical Characteristics of Photodiode

(Tc=25°C)

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

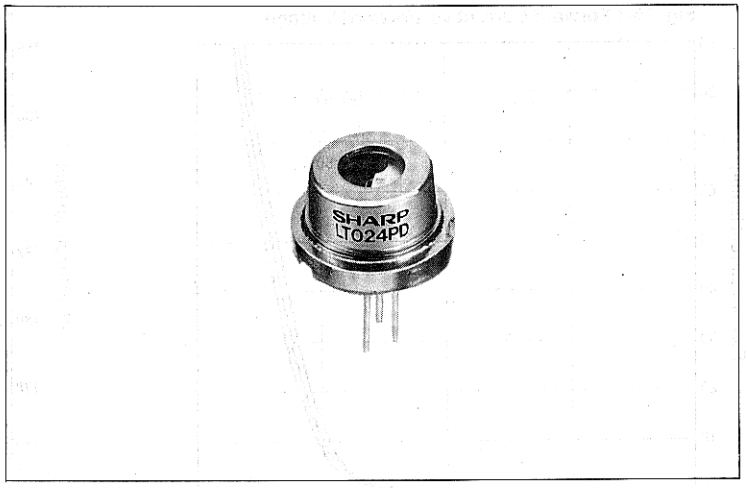
LT024PD

Features

- High power (maximum optical power output: 30 mW)
- Wavelength: 780nm
- Single transverse mode

Applications

- Optical disk memories
- Information processing equipment



Absolute Maximum Ratings

(Tc=25°C)

Parameter		Symbol	Ratings	Units
Optical power output		Po	30	mW
Reverse voltage	Laser	V_R	2	V
	PIN		30	
Operating temperature *1		Topr	−10 to +50	°C
Storage temperature *1		Tstg	−40 to +85	°C

*1 Case temperature

Electro-optical Characteristics *1

(Tc=25°C)

Parameter			Symbol	Condition	Ratings MIN	Ratings TYP	Ratings MAX	Units
Threshold current			Ith	—	—	55	80	mA
Operating current			Iop	Po=20mW	—	85	120	mA
Operating voltage			Vop	Po=20mW	—	1.85	2.2	V
Wavelength *2			λp	Po=20mW	765	780	795	nm
Monitor current			Im	Po=20mW V_R=15V	25	80	250	μA
Radiation characteristics	Angle *3	Parallel to junction	θ //	Po=20mW	8	10	14	deg
		Perpendicular to junction	θ⊥	Po=20mW	20	29	38	deg
	Ripple			Po=20mW	—	—	±20	%
Emission point accuracy	Angle		Δφ //	Po=20mW	—	—	±2	deg
			Δφ⊥	Po=20mW	—	—	±3	deg
	Position		Δx, Δy, Δz	—	—	—	±80	μm
Differential efficiency			η	$\frac{10mW}{I_F(20mW)-I_F(10mW)}$	0.5	0.75	1.1	mW/mA

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

Electrical Characteristics of Photodiode

(Tc=25°C)

Parameter	Symbol	Condition	Ratings MIN	Ratings TYP	Ratings MAX	Units
Sensitivity	S	V_R=15V	—	4	—	μA/mW
Dark current	I_D	V_R=15V	—	—	150	nA
Terminal capacitance	Ct	V_R=15V	—	18	20	pF

LT024MD/MF/PD Characteristics Diagrams

Fig. 74-1 Forward Current vs. Forward Voltage

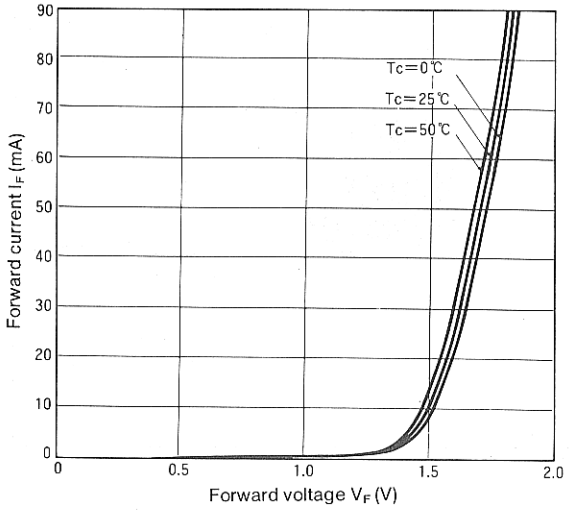


Fig. 74-2 Optical Power Output vs. Forward Current and Monitor Current

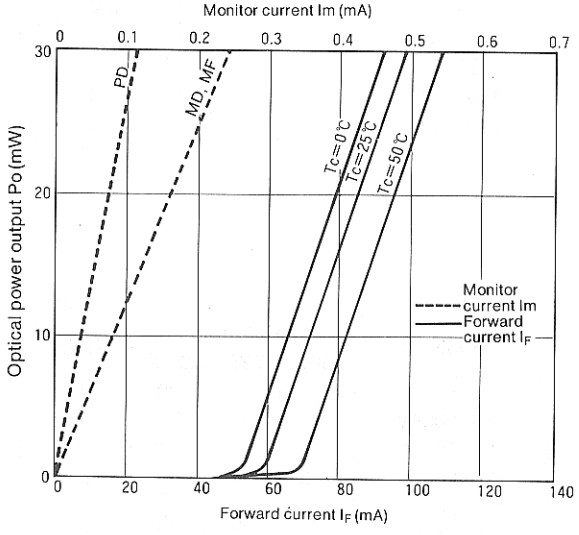


Fig. 74-3 Threshold Current vs. Temperature

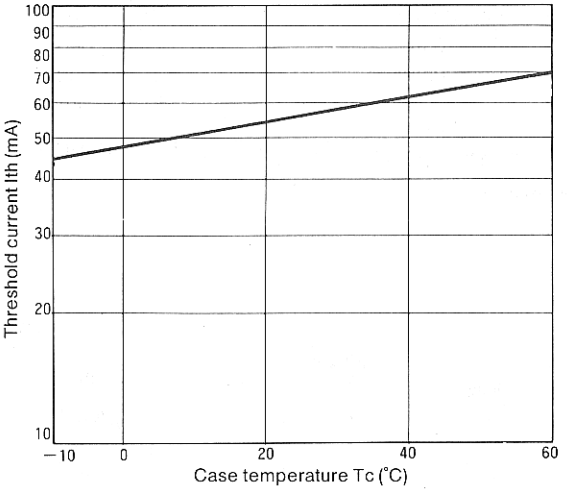


Fig. 74-4 Wavelength vs. Temperature

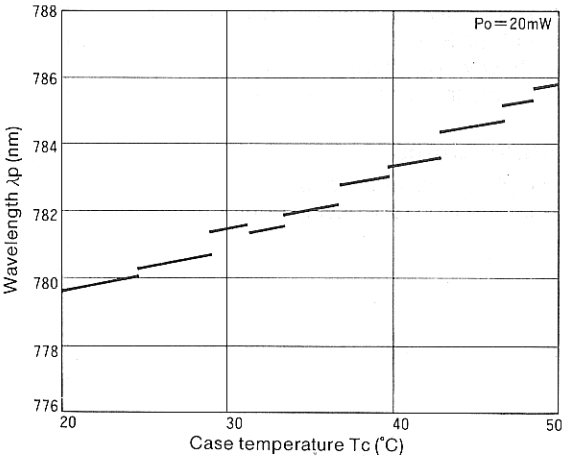
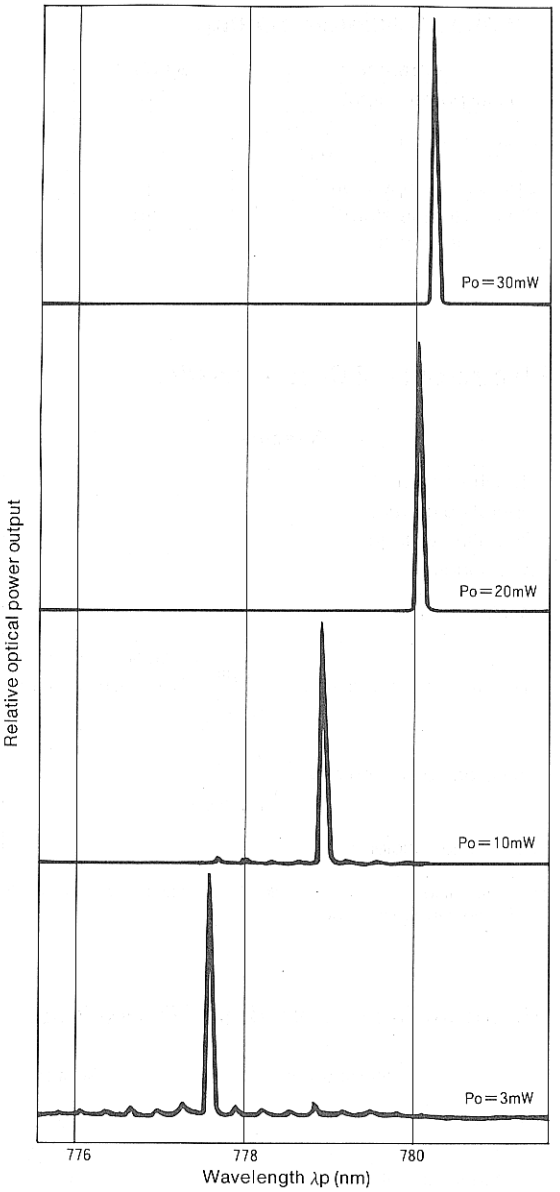


Fig. 74-5 Optical Power Output Dependence of Wavelength



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.