

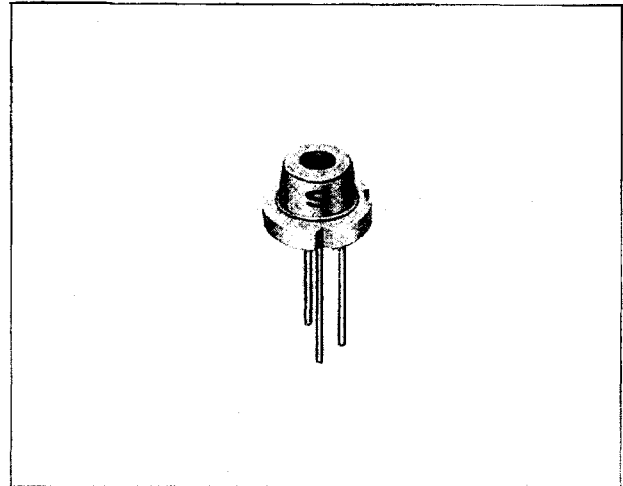
LT022PS

Features

- Compact (diameter: 5.6mm)
- Single positive power supply
- Low noise S/N: -60 dB
(according to measurement method Fig. 27-2)
- Wavelength: 780nm
- Single transverse mode

Applications

- CD players
- CD-ROMs
- Information processing equipment



Absolute Maximum Ratings

(T_c=25°C)

Parameter	Symbol	Ratings	Units
Optical power output	P _o	5	mW
Reverse voltage	Laser	2	V
	PIN	30	
Operating temperature* ¹	T _{opr}	-10 to +70	°C
Storage temperature* ¹	T _{stg}	-40 to +85	°C

*1 Case temperature

Electro-optical Characteristics*¹

(T_c=25°C)

Parameter	Symbol	Condition	Ratings			Units		
			MIN	TYP	MAX			
Threshold current	I _{th}	—	—	45	60	mA		
Operating current	I _{op}	P _o =3mW	—	55	75	mA		
Operating voltage	V _{op}	P _o =3mW	—	1.75	2.0	V		
Wavelength* ²	λ _p	P _o =3mW	770	780	795	nm		
Monitor current	I _m	P _o =3mW V _R =15V	0.08	0.20	0.42	mA		
Radiation characteristics	Angle* ³	Parallel to junction	θ	P _o =3mW	8.5	11	16	deg
		Perpendicular to junction	θ _⊥	P _o =3mW	29	35	48	deg
	Ripple	P _o =3mW	—	—	±20	%		
Emission point accuracy	Angle	Δφ	P _o =3mW	—	—	±2	deg	
		Δφ _⊥	P _o =3mW	—	—	±3	deg	
	Position	Δx, Δy, Δz	—	—	±80	μm		
Differential efficiency	η	$\frac{2\text{mW}}{I_F(3\text{mW}) - I_F(1\text{mW})}$	0.15	0.3	0.5	mW/mA		

*1 Initial value

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

*2 Single transverse mode

Electrical Characteristics of Photodiode

(T_c=25°C)

Parameter	Symbol	Condition	Ratings			Units
			MIN	TYP	MAX	
Sensitivity	S	V _R =15V	—	0.07	—	mA/mW
Dark current	I _D	V _R =15V	—	—	150	nA
Terminal capacitance	C _t	V _R =15V	—	9	—	pF

LT022 Series Characteristics Diagrams

Fig. 52-1 Forward Current vs. Forward Voltage

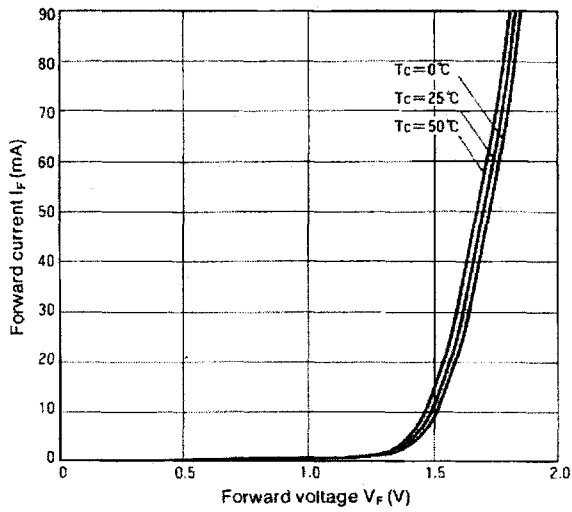


Fig. 52-4 Wavelength vs. Temperature

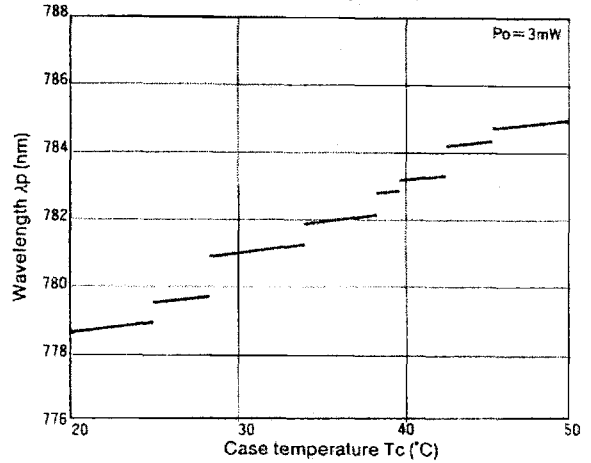


Fig. 52-2 Optical Power Output vs. Forward Current and Monitor Current

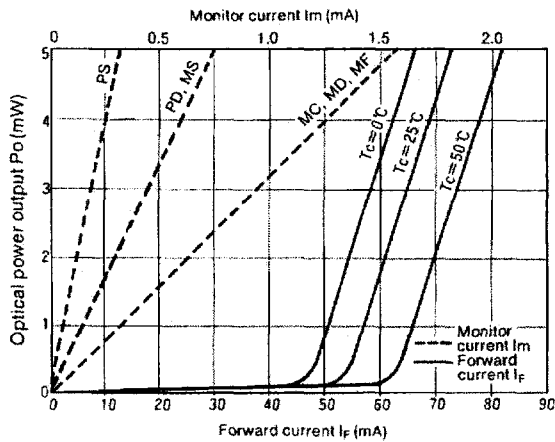


Fig. 52-5 Optical Power Output Dependence of Wavelength

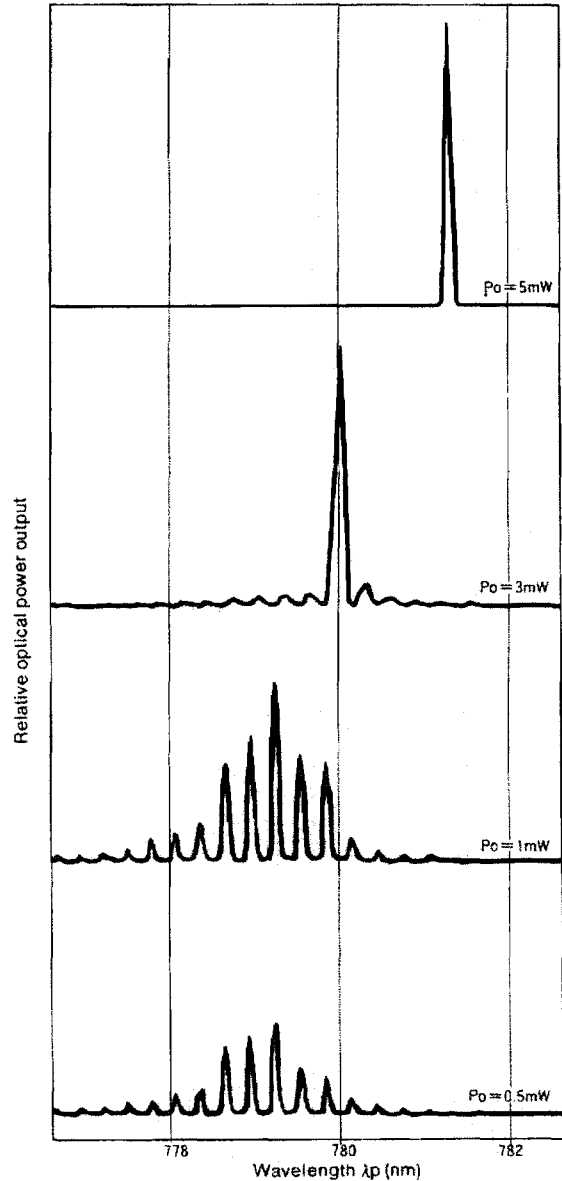
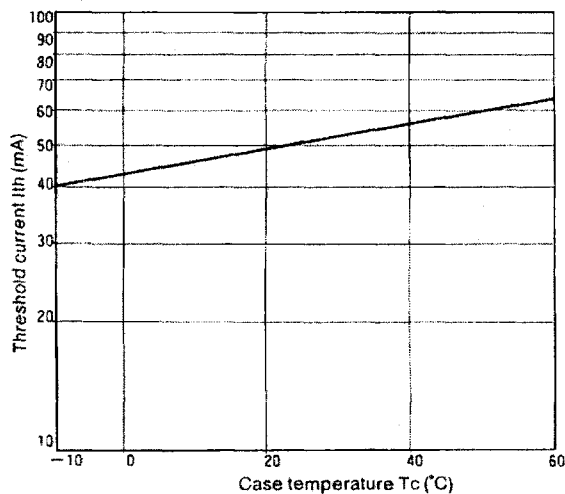


Fig. 52-3 Threshold Current vs. Temperature



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.