

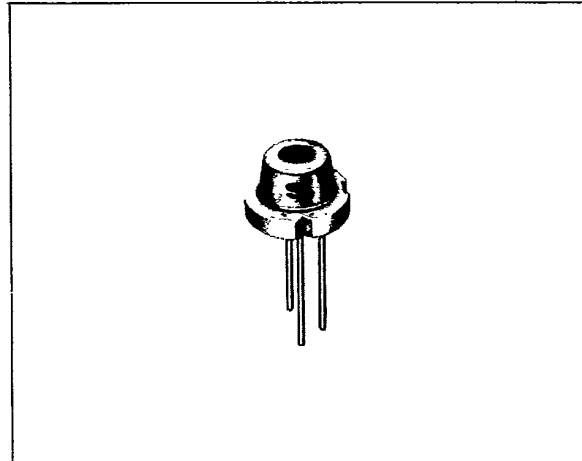
# LT011PS

## Features

- Compact (diameter: 5.6 mm)
- Wavelength: 840nm
- Single transverse mode

## Applications

- Measurement instruments
- Analysis instruments



## Absolute Maximum Ratings

(T<sub>c</sub>=25°C)

Parameter	Symbol	Ratings	Units
Optical power output	P <sub>o</sub>	5	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	Ratings			Units		
			MIN	TYP	MAX			
Threshold current	I <sub>th</sub>	—	—	50	70	mA		
Operating current	I <sub>op</sub>	P <sub>o</sub> =3mW	—	60	85	mA		
Operating voltage	V <sub>op</sub>	P <sub>o</sub> =3mW	—	1.75	2.0	V		
Wavelength* <sup>2</sup>	λ <sub>p</sub>	P <sub>o</sub> =3mW	825	840	850	nm		
Monitor current	I <sub>m</sub>	P <sub>o</sub> =3mW V <sub>R</sub> =15V	0.08	0.20	0.42	mA		
Radiation characteristics	Angle* <sup>3</sup>	Parallel to junction	θ <sub>∥</sub>	P <sub>o</sub> =3mW	8.5	12	16	deg
		Perpendicular to junction	θ <sub>⊥</sub>	P <sub>o</sub> =3mW	25	40	48	deg
	Ripple	P <sub>o</sub> =3mW	—	—	±20	%		
Emission point accuracy	Angle	Δφ <sub>∥</sub>	P <sub>o</sub> =3mW	—	—	±2	deg	
		Δφ <sub>⊥</sub>	P <sub>o</sub> =3mW	—	—	±3	deg	
	Position	Δx, Δy, Δz	—	—	±80	μm		
Differential efficiency	η	$\frac{2mW}{I_F(3mW) - I_F(1mW)}$	0.12	0.25	0.60	mW/mA		

\*1 Initial value

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

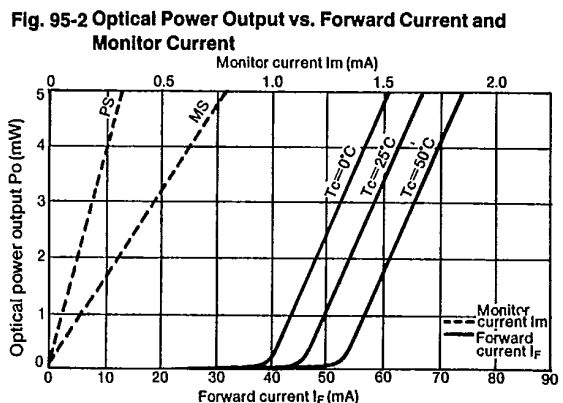
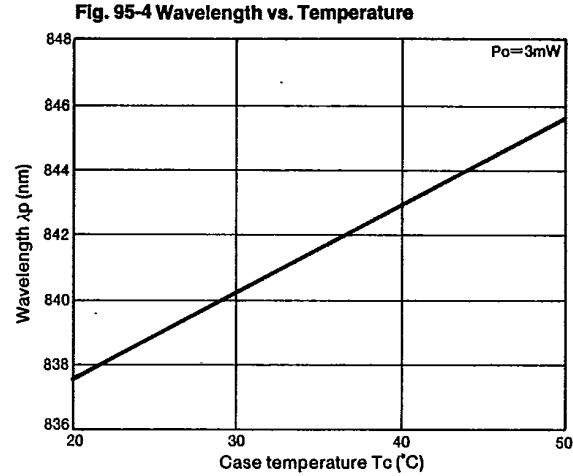
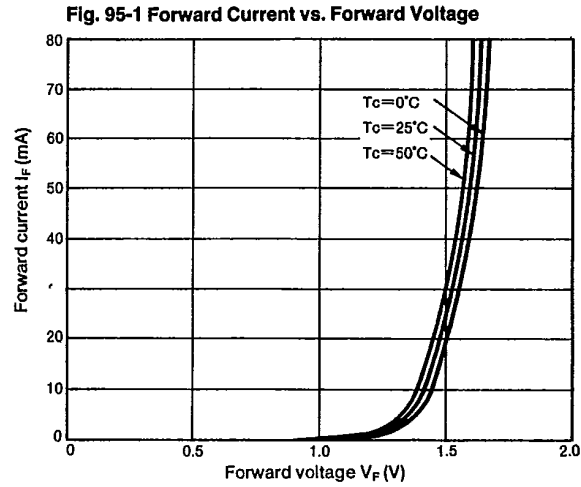
\*2 Single transverse mode

## Electrical Characteristics of Photodiode

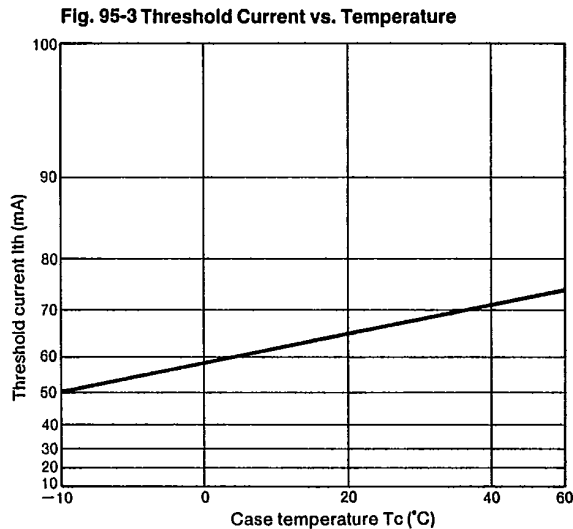
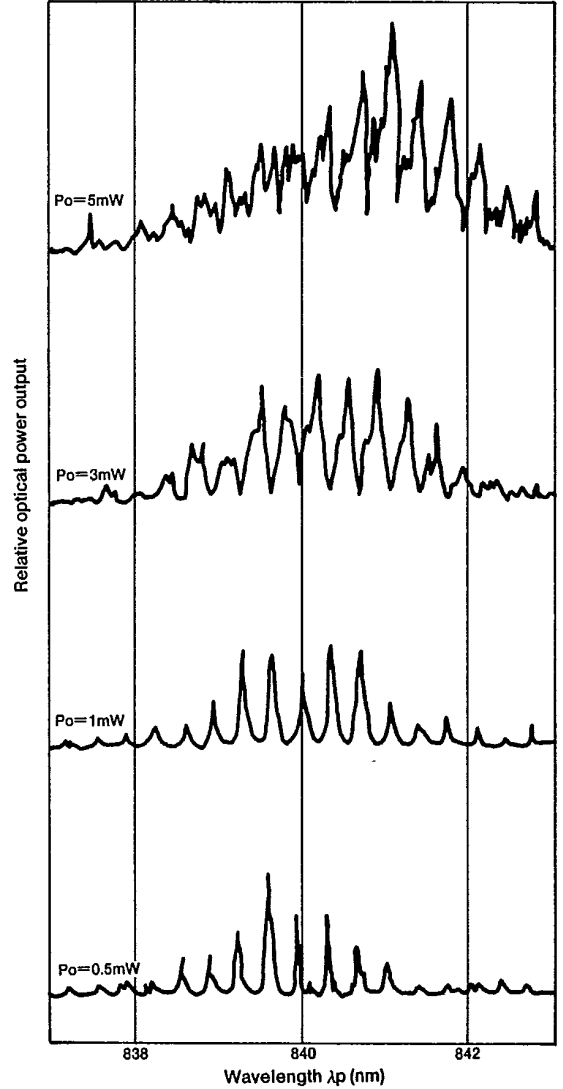
(T<sub>c</sub>=25°C)

Parameter	Symbol	Condition	Ratings			Units
			MIN	TYP	MAX	
Sensitivity	S	V <sub>R</sub> =15V	—	0.07	—	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	—	9	—	pF

# LT011 Series Characteristics Diagrams



**Fig. 95-5 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.