

# LT051PS

## High Power Red Laser Diode for DVD-R/DVD-RW Drive(635nm-30mW)

### ■ Features

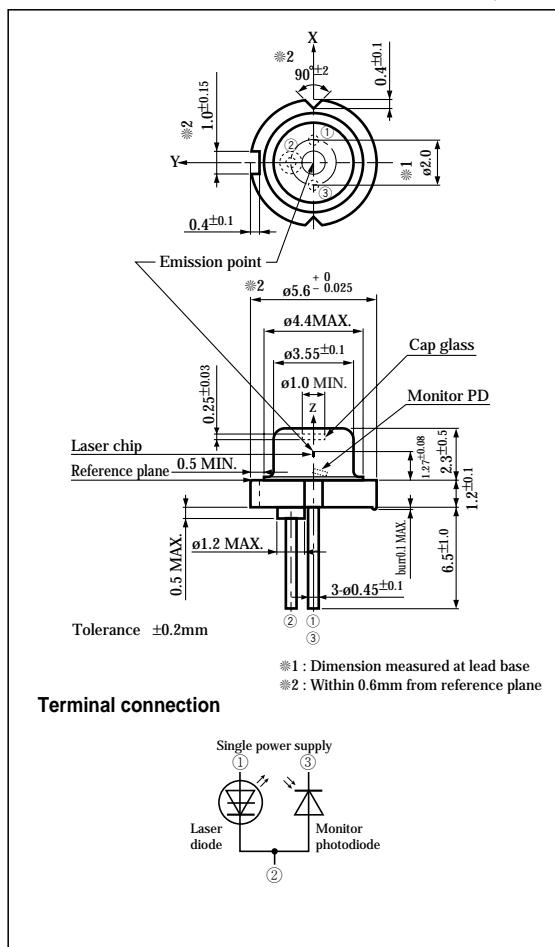
- (1) Maximum optical power output : 30mW (CW)
- (2) Wavelength : 635nm band
- (3) Single mode
- (4) Single power supply
- (5)  $\phi 5.6\text{mm}$  package

### ■ Applications

- (1) DVD-R drives
- (2) DVD-RW drives

### ■ Outline Dimensions

(Unit : mm)



### ■ Absolute Maximum Ratings

(T<sub>C</sub>=25°C)

Parameter	Symbol	Rating	Unit
① Optical power output	P <sub>O</sub>	30	mW
Optical power output (pulse)	P <sub>p</sub>	② 50	mW
Reverse voltage	Laser V <sub>rl</sub>	2	V
	Monitor photodiode V <sub>rd</sub>	30	V
③ Operating temperature	T <sub>opr</sub>	-10 to +50	°C
③ Storage temperature	T <sub>stg</sub>	-40 to +85	°C
④ Soldering temperature	T <sub>sld</sub>	260	°C

① CW (Continuous Wave) drive

② Pulse width : 0.5μs, duty : 50%

③ Case temperature

④ At the position of 1.6mm or more from the lead base (5s)

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## ■ Electro-optical Characteristics<sup>※1</sup>

(T<sub>c</sub>=25°C)

Parameter		Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Threshold current		I <sub>th</sub>	—	-	60	90	mA
Operating current		I <sub>op</sub>	Po=30mW	-	105	135	mA
Operating voltage		V <sub>op</sub>	Po=30mW	2.0	2.4	2.9	V
Wavelength		λ <sub>p</sub>	Po=30mW	635	639	642	nm
※2 Half intensity angle	Parallel	θ//	Po=30mW	7.0	8	10	°
	Perpendicular	θ⊥	Po=30mW	21.0	24.0	27.0	°
Ripple		R <sub>i</sub>	Po=30mW	-	-	±20	%
Misalignment angle	Parallel	Δθ//	Po=30mW	-	-	±2	°
	Perpendicular	Δθ⊥	Po=30mW	-	-	±3	°
Misalignment position		Δx, Δy, Δz	—			±80	μm
Interference pattern intensity		α	Po=30mW	-	-	1.0	-
Differential efficiency		η <sub>d</sub>	$\frac{20\text{mW}}{I(30\text{mW}) - I(10\text{mW})}$	0.45	0.7	1.0	mW/mA

※1 Initial value, CW (Continuous Wave) drive

※2 Angle at 50% peak intensity (full-width at half-maximum)

## ■ Electrical Characteristics of Photodiode

(T<sub>c</sub>=25°C)

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Output current	I <sub>m</sub>	Po=30mW, V <sub>rd</sub> =5V	0.01	0.025	0.2	mA
Dark current	I <sub>D</sub>	V <sub>rd</sub> =5V	-	-	150	nA
Terminal capacitance	C <sub>t</sub>	V <sub>rd</sub> =5V, f=1MHz	-	3.5	-	pF

• Please refer to the chapter "Handling Precautions"

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