LT050MS/LT050PS

Compact Size Laser Diode for Pointers(635nm-5mW)

■ Features

(1) Maximum optical power output : 5mW
(2) Wavelength : 635nm band
(3) Compact ϕ5.6mm package
(4) Stable transverse mode
(5) High temperature operation at 60℃
(6) Realizes high temperature operation by introducing a tensil strain into the multi-quantum well active layer
(7) Stable optical characteristics by developing an index guide structure of MBE 2-times growth

■ Model No.

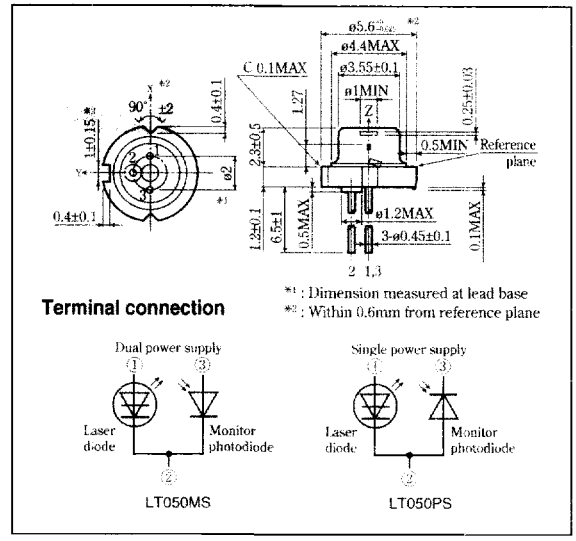
(1) LT050MS ···Dual power supply
(2) LT050PS ···Single power supply

■ Applications

(1) Bar code readers, Pointers etc,

■ Outline Dimensions

(Unit : mm)



■ Absolute Maximum Ratings

(Tc=25°C)

Parameter		Symbol	Rating	Unit
Optical power output		P_O	5	mW
Reverse voltage	Laser	V_R	2	V
	Monitor photodiode		30	V
*1 Operating temperature		T_{opr}	-10 to +60	°C
*1 Storage temperature		T_{stg}	-40 to +85	°C
*2 Soldering temperature		T_{sld}	260°C/5s	-

*1 Case temperature
*2 At the position of 1.6mm or more from the lead base

■ Electro-optical Characteristics*1

(Tc=25°C)

Parameter			Symbol	Conditions		MIN.	TYP.	MAX.	Unit
Threshold current			I_{th}	–		-	50	65	mA
Operating current			I_{op}	Po=3mW		-	60	75	mA
Operating voltage			V_{op}	Po=3mW		-	2.3	2.7	V
*2 Wavelength			λ_p	Po=3mW		630	635	640	nm
Monitor current			I_m	Po=3mW, V_R=5V	LT050MS	-	200	-	μA
					LT050PS	-	80	-	μA
Radiation characteristics	*3 Angle	Parallel to junction	θ//	Po=3mW		7.0	8.5	10.0	°
		Perpendicular to junction	θ⊥	Po=3mW		25.0	30.0	35.0	°
	Ripple		–	Po=3mW		-	-	±20	%
Emission point accuracy		Angle	Δø//	Po=3mW		-	-	±2	°
			Δø⊥	Po=3mW		-	-	±3	°
		Position	Δx,Δy,Δz	–		-	-	±80	μm
Differential efficiency			η	$\frac{2mW}{I\ (3mW) - I\ (1mW)}$		0.25	0.35	0.60	mW/mA

*1 Initial value, CW (Continuous Wave) drive
*2 Oscillation mode, single transverse mode
*3 Angle at 50% peak intensity (full-width at half-maximum)

■ Electrical Characteristics of Photodiode

(LT050MS)

(Tc=25°C)

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Dark current	I_D	V_R=5V	-	-	150	nA

(LT050PS)

(Tc=25°C)

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Dark current	I_D	V_R=5V	-	-	150	nA

· Please refer to the chapter "Handling Precautions".