

LT051PS

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

Features

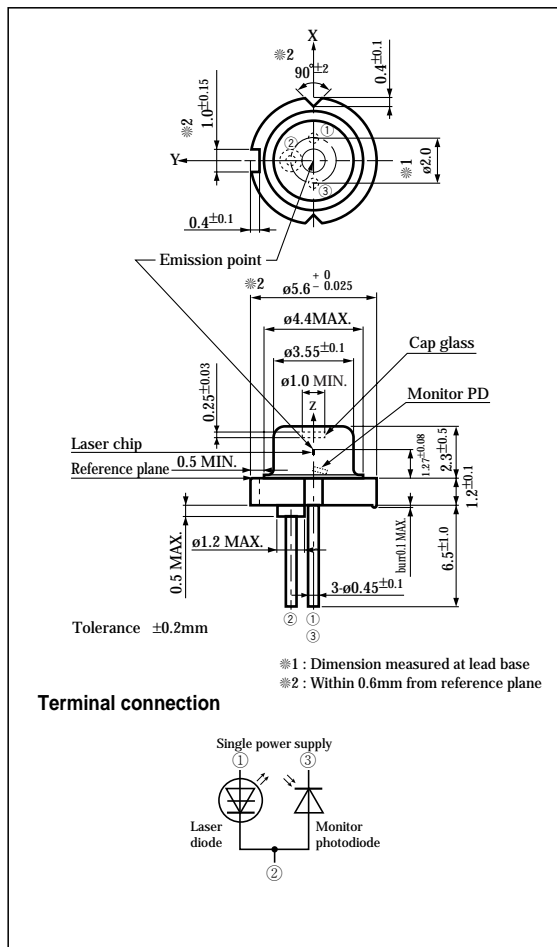
- (1) Maximum optical power output : 30mW (CW)
- (2) Wavelength : 635nm band
- (3) Single mode
- (4) Single power supply
- (5) $\phi 5.6$ mm package

Applications

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

Outline Dimensions

(Unit : mm)



Absolute Maximum Ratings

(T_c=25°C)

| Parameter | Symbol | Rating | Unit |
|------------------------------|--------------------|-----------------|------|
| *1 Optical power output | P _O | 30 | mW |
| Optical power output (pulse) | P _p | *2 50 | mW |
| Reverse voltage | Laser | V _{rl} | 2 V |
| | Monitor photodiode | V _{rd} | 30 V |
| *3 Operating temperature | T _{opr} | -10 to +50 | °C |
| *3 Storage temperature | T _{stg} | -40 to +85 | °C |
| *4 Soldering temperature | T _{slid} | 260 | °C |

- *1 CW (Continuous Wave) drive
- *2 Pulse width : 0.5 μ s, duty : 50%
- *3 Case temperature
- *4 At the position of 1.6mm or more from the lead base (5s)

■ Electro-optical Characteristics^{*1}

(Tc=25°C)

| Parameter | Symbol | Conditions | MIN. | TYP. | MAX. | Unit | |
|--------------------------------|-----------------|----------------------------------|---------|------|------|-------|---|
| Threshold current | I _{th} | - | - | 60 | 90 | mA | |
| Operating current | I _{op} | Po=30mW | - | 105 | 135 | mA | |
| Operating voltage | V _{op} | Po=30mW | 2.0 | 2.4 | 2.9 | V | |
| Wavelength | λ _p | 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 _i | 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 _d | $\frac{20mW}{I(30mW) - I(10mW)}$ | 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

(Tc=25°C)

| Parameter | Symbol | Conditions | MIN. | TYP. | MAX. | Unit |
|----------------------|----------------|------------------------------|------|-------|------|------|
| Output current | I _m | Po=30mW, V _{rd} =5V | 0.01 | 0.025 | 0.2 | mA |
| Dark current | I _D | V _{rd} =5V | - | - | 150 | nA |
| Terminal capacitance | C _t | V _{rd} =5V, f=1MHz | - | 3.5 | - | pF |

• Please refer to the chapter "Handling Precautions"

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