

## SMD Laser Diode

# LS65050001

3433 650nm 3.5mW

The size is only 3.4x3.3mm, which is lighter and shorter in product application. The surface mount element construction (SMD) welding method makes the product easy to cooperate with automatic production, saving production loss and man-hours. At the same time, the built-in Zener diode has better anti-static ability, reliable operation, and high efficiency. The various advantages of SMD packaged laser diodes are more in line with the mainstream direction of industry research and development.



## Feature

- Package: Ag Plated 6 pad design package with silicone resin
- Dimension: 3.4 mmx3.3 mmx1.9 mm
- Peak wavelength at 25°C: 650nm(typ.)
- Standard optical power output: 3.5mW
- Single mode lasing

## Application

- Medical Application

## Specification

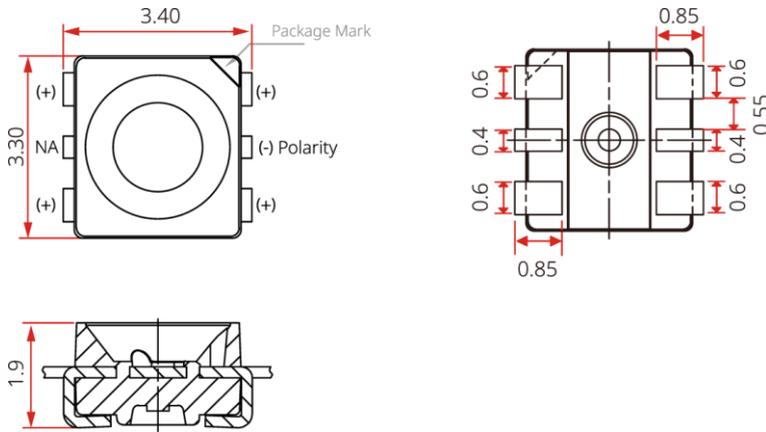
$T_a=25^\circ\text{C}$

Parameter	Symbol	Min.	Typical	Max.	Unit	
Threshold Current	$I_{th}$	-	12	25	mA	
Operating Current	$I_{op}$	-	17	25	mA	
Operating Voltage	$V_{op}$	-	2.2	2.6	V	
Slope Efficiency	$\eta$	0.7	1	-	mW/mA	
Beam Divergence (FWHM)	Parallel	$\theta_{//}$	5	7.5	12	deg.
	Perpendicular	$\theta_{\perp}$	30	36	42	deg.
Lasing Wavelength	$\lambda$	640	650	660	nm	

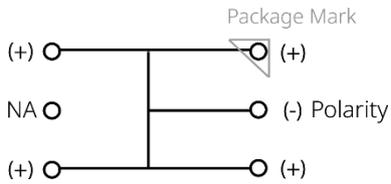
Notes:  $\theta$  are defined as the angle within which the intensity is 50% of the peak value.

## Mechanical Dimensions

### 1. Dimensional Drawing



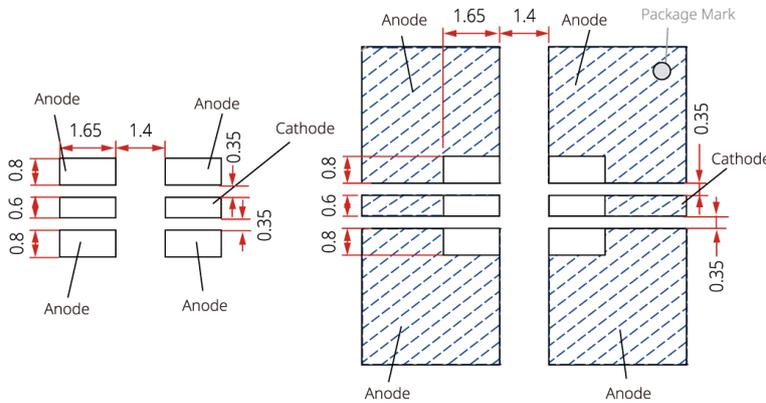
### 2. Circuit



#### Notes:

1. All dimensions are measured in mm.
2. Tolerance :  $\pm 0.1$  mm

### 3. Recommended Solder Pad



Pad design for improved heat dissipation



#### Notes:

1. All dimensions are measured in mm.
2. Tolerance :  $\pm 0.1$  mm

## **[ Cautions ]**

### 1. Absolute maximum ratings

The absolute maximum ratings which must not be exceeded even momentarily have been established for over driving laser operation reason such as COD. Exercise particular caution with respect to the drive voltage supply and static electricity.

### 2. Prevention of surge current and electrostatic discharge (ESD) and surge stress

Laser diode is sensitive device to ESD and surge, so even an extremely short time, Laser diode damaged with the strong light emitted. Use the power supply that was designed not to exceed the optical power output specified at the absolute maximum ratings.

We advise taking the following protective measures:

- Ground the device and circuits.
- When working with laser diodes wear anti-static clothing.
- Grounded wrist straps should always be worn while working with laser diodes.
- Use anti-static containers for transport and storage.
- Laser diode deterioration and damage can occur due to excessive current spikes when the power is turned on or off.

Design circuits to avoid the generating of excessive current spikes

### 3. Soldering

When soldering, please give attention to the mechanical stress and the temperature. Temperature of die-pad portion should be less than 160°C. It is recommended to radiate heat by putting heat sink on the package.

**Soldering temperature and time : Iron temperature less than 180°C within 3sec (leads only)**

### 4. Eye Safety

When the laser diode is in operation, looking into laser beam directly by naked eyes, even looking into through a lens, microscope, or optical fibers, may cause severe damage to human eyes. For observing laser beams, using safety goggles is recommended.

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