

SMD VCSEL

LSZZ030001

3433 680/850/940nm 2~7mW

Combining three wavelengths in 3.4x3.3mm, SMD can make the product lighter, thinner and shorter.

The SMD welding method enables automatic production of products, reducing production losses and man-hours. At the same time, the built-in Zener diode has better anti-static ability. VCSEL has the advantages of high-speed operation, low power consumption and small size, and has gradually become one of the key components to the new generation.



Feature

- Combining three wavelengths in one package
- Cooperate with automated production
- Energy efficient and economical

Application

- Healthcare LLLT products

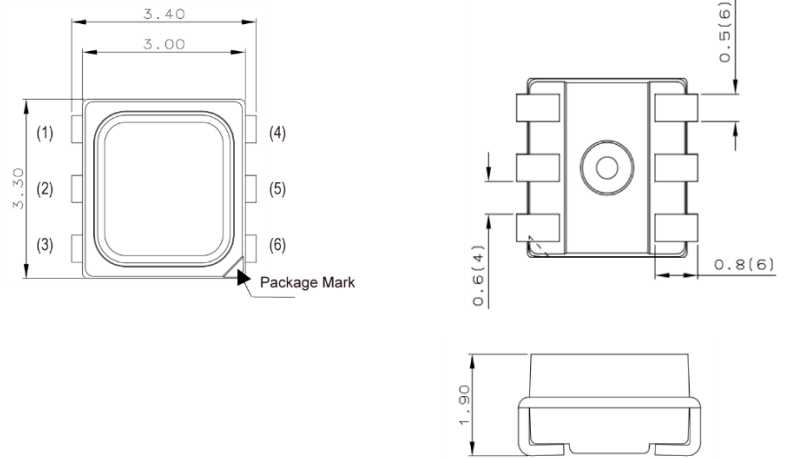
Specification

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

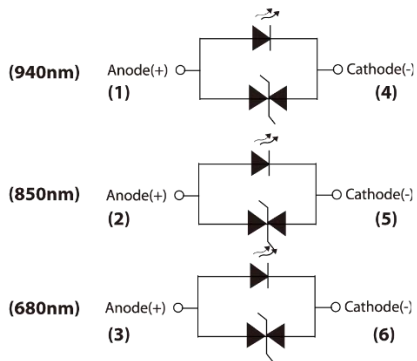
Parameter	Symbol	Condition	Min.	Typical	Max.	Unit
Threshold Current (680nm)	I_{th}	$P_o=3\text{mW}$	-	4	-	mA
Threshold Current (850nm)			-	-	2	
Threshold Current (940nm)			-	-	1.5	
Forward Voltage (680nm)	V_f	$I_F=12\text{mA}, 100\text{ms}$	-	2.3	-	V
Forward Voltage (850nm)		$I_F=9\text{mA}, 100\text{ms}$	-	2.2	-	
Forward Voltage (940nm)		$I_F=9\text{mA}, 100\text{ms}$	-	2.3	-	
Beam Divergence (FWHM) (680nm)	Parallel	$P_o=3\text{mW}$	-	25	-	deg.
	Perpendicular					
Beam Divergence (FWHM) (850nm)	Parallel	$P_o=3\text{mW}$	-	36	-	
	Perpendicular					
Beam Divergence (FWHM) (940nm)	Parallel	$P_o=3\text{mW}$	-	38	-	
	Perpendicular					
Lasing Wavelength(680nm)	λ	$P_o=3\text{mW}$	670	680	690	nm
Lasing Wavelength(850nm)			840	850	860	
Lasing Wavelength(940nm)			930	940	950	

Mechanical Dimensions

1. Dimensional Drawing



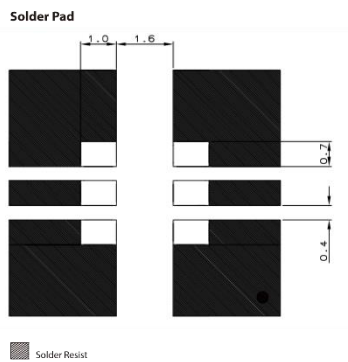
2. Circuit



Notes:

1. All dimensions are measured in mm.
2. Tolerance : ± 0.1 mm

3. Recommended Solder Pad



Notes:

1. All dimensions are measured in mm.
2. Tolerance : ± 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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