



# 940nm 200mW Laser Diode in SMD Package LD940D200S3516

## Data Sheet



### Description

The Lasermate LD940D200S3516 is a 940nm, 200mW laser diode in a surface mount (SMD) package and with an operating temperature of 60°C. The laser diode is suitable as a light source for many applications, including moving sensor/gesture, photoelectric sensors, 3D sensing and ToF applications.

### Features

- 940nm Infrared Laser Diode
- Optical output power: 200mW CW
- Temperature operation: 60°C
- High power conversion efficiency
- No monitor PD
- Open package: SMD (3.5x3.5mm)

### Applications

- Moving sensor/Gesture
- Photoelectric sensors
- 3D sensing
- ToF applications

### Absolute Maximum Ratings

PARAMETER	SYMBOL	CONDITION	RATING	UNIT
Light output power	$P_o$	CW	220	mW
Reverse voltage (LD)	$V_{RL}$	-	2	V
Case temperature	$T_C$	-	-10 to +60	°C
Storage temperature	$T_S$	-	-40 to +85	°C

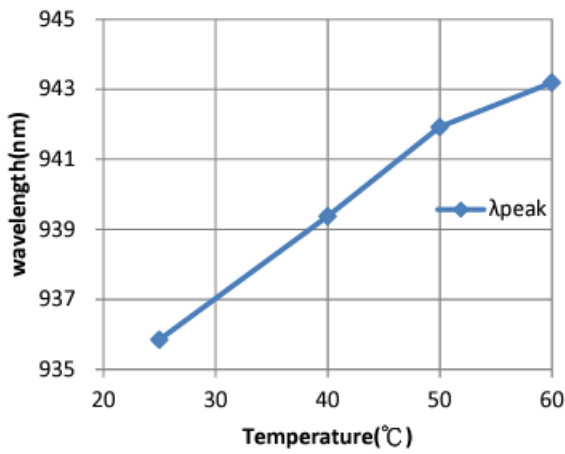
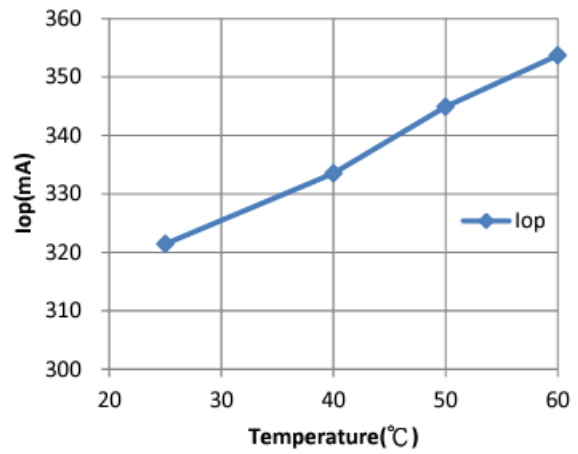
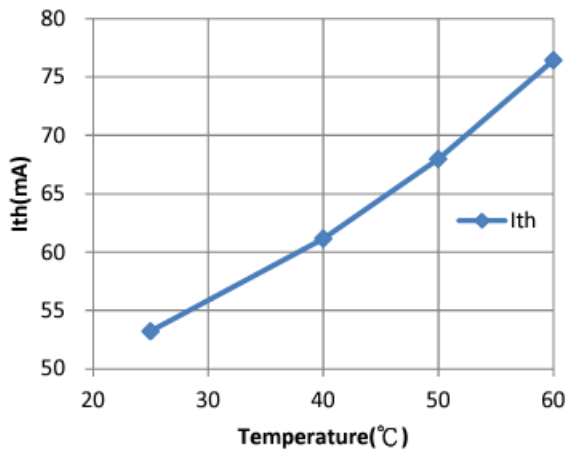
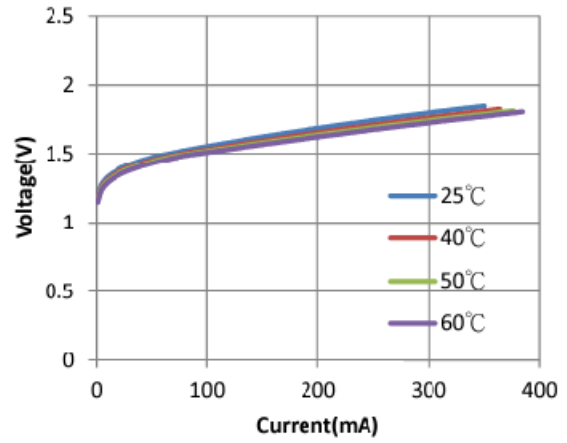
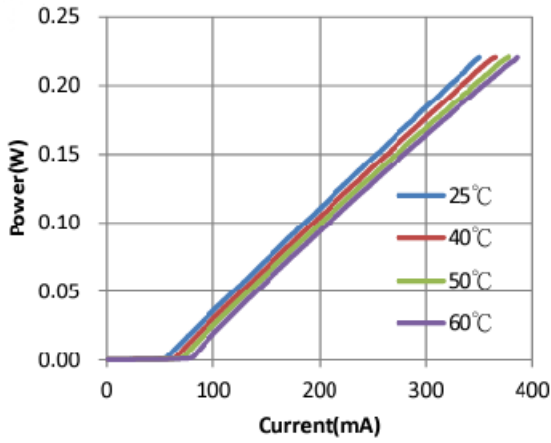
### Electrical and Optical Characteristics ( $T_C = 25\text{ °C}$ )

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS
Peak wavelength	$\lambda$	930	940	945	nm	$P_o = 200\text{mW}$
Threshold current	$I_{th}$		54	65	mA	
Operating current	$I_{op}$	300	320	340	mA	$P_o = 200\text{mW}$
Operating voltage	$V_{op}$		1.9	2.1	V	$P_o = 200\text{mW}$
Differential efficiency	$\eta$	0.65	0.70	0.80	mW/mA	$P_o = 100\text{-}200\text{mW}$
Parallel divergence angle	$\Theta_{//}$	4	7	13	deg	$P_o = 200\text{mW}$
Perpendicular divergence angle	$\Theta_{\perp}$	12	19	25	deg	$P_o = 200\text{mW}$

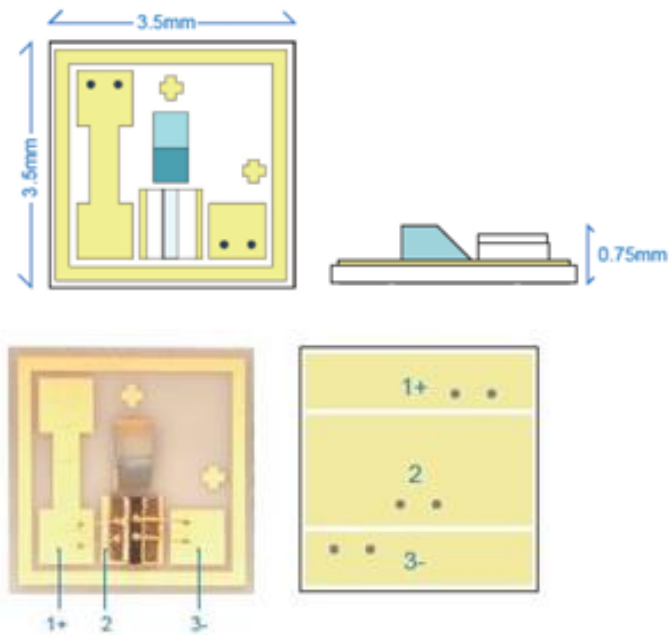
#### Notes:

- Sufficient heat dissipation is required for CW operation.
- The characteristics were tested under CW condition.
- Divergence angle measurement was based on FWHM.

Typical Characteristics



Mechanical Outline (unit: mm)



#### Additional Notes

- Do not operate the device above maximum ratings. Doing so may cause unexpected and permanent damage to the device.
- Take precautions to avoid electrostatic discharge and/or momentary power spikes. A change in the characteristics of the laser or premature failure may result.
- Proper heat sinking of the device assures stability and lifetime. Always ensure that maximum operating temperatures are not exceeded.
- Observing visible or invisible laser beams with human eye directly, or indirectly, can cause permanent damage. Use a camera to observe the laser.
- No laser device should be used in any application or situation where life or property is at risk in the event of device failure.
- Specifications are subject to change without notice. Ensure that you have the latest specifications by contacting us prior to purchase or use of the product.