

LN9R05MS / NS

Red Light Semiconductor Laser

Outline

The LN9R05MS/NS, a visible light semiconductor laser is a red semiconductor laser which can function as a high-performance light source for data processing devices such as bar code scanners, laser beam printers, and optical disks, as well as measuring devices such as position sensors, and display devices such as laser pointers. High-precision MOVPE is used as the crystal growth method. The laser structure is optimized through computer simulation to provide a low threshold and low drooping, making it possible to use this laser in a wide variety of devices.

Features

- Oscillating wavelength : 670 nm
- Low threshold oscillation : 25 mA
- Stable single horizontal mode oscillation
- Low drooping : 10% (LN9R05NS)
- Small package

Absolute Maximum Ratings (Ta = 25°C)

Parameter	Symbol	Ratings	Unit
Radiant power	P _O	5	mW
Reverse voltage	Laser	V _R	V
	PIN	V _R (PIN)	V
Power dissipation	P _d (PIN)	60	mW
Operating ambient temperature	T _{opr}	-10 to +50	°C
Storage temperature	T _{stg}	-40 to +85	°C

Electro-Optical Characteristics (Ta = 25°C)

Parameter	Symbol	Conditions	min	typ	max	Unit
Threshold current	I _{th}	CW	15	25	30	mA
Operating current	I _{OP}	P _O = 3mW	20	35	40	mA
Operating voltage	V _{OP}	P _O = 3mW	2.0	2.5	3.0	V
Oscillation wavelength	λ _L	P _O = 3mW	660	670	680	nm
Radiation angle	Horizontal direction	θ ^{*1}	6	8	11	deg.
	Vertical direction	θ _⊥ ^{*1}	25	30	40	deg.
PIN dark current	I _d	V _R (PIN) = 15V			0.1	μA
PIN photo current	I _p	P _O = 3mW, V _R (PIN) = 5V		0.2		mA
Optical axis accuracy	X direction	θ _X	-2.0		+2.0	deg.
	Y direction	θ _Y	-3.0		+3.0	deg.
Droop ^{*2}	D _r	P _O = 3mW, f = 600Hz, duty 10% to 90%			10	%
Oscillation mode	Single horizontal mode					

^{*1} θ_{||} and θ_⊥ are the angles where the optical intensity is a half of its max. value. (half full angle)

^{*2} LN9R05NS only.



