

# LN9830, LN9830P

## High Power Laser Diodes

### ■ Outline

The LN9830 and LN9830P are near-infrared GaAlAs laser diodes enabling stable single mode continuous oscillation in room temperature. Two polarities are available for medium power and possible to operate continuously in high temperature. APC (Automatic Power Control) operation is enabled due to PIN photodiode for light power monitor. They can be widely applied for the light source of laser beam printer, facsimile, optical disc memory drive and optical communication apparatus.

### ■ Features

- Low threshold current
- Stable single transverse mode oscillation
- With monitor PIN photodiode for radiant output control
- Radiant can be continuously varied up to 30mW
- Direct modulation available
- Near-infrared oscillation wavelength
- Long lifetime, high reliability

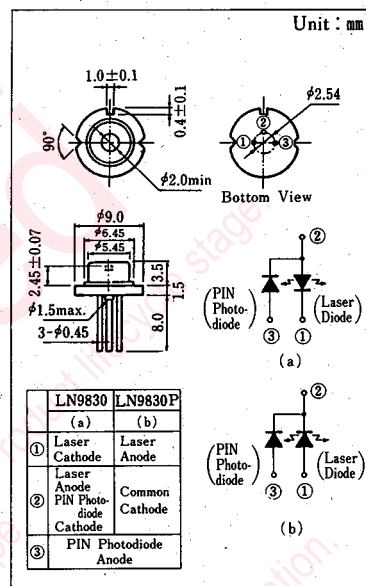
### ■ Absolute Maximum Ratings (Ta=25°C)

Item	Symbol	Value	Unit
Optical Power Output	P <sub>O</sub>	30	mW
Reverse Voltage	Laser	V <sub>R</sub>	V
	PIN	V <sub>R</sub> (PIN)	30
Power Dissipation	P <sub>d</sub> (PIN)	60	mW
Operating Temperature	T <sub>opr</sub>	-10~+60	°C
Storage Temperature	T <sub>stg</sub>	-40~+85	°C

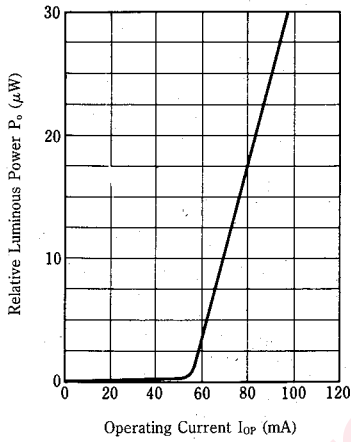
### ■ Electro-Optical Characteristics (Ta=25°C)

Item	Symbol	Condition	min.	typ.	max.	Unit
Threshold Current	I <sub>th</sub>	CW	20	40	65	mA
Operating Current	I <sub>OP</sub>	P <sub>O</sub> = 25 mW	60	90	125	mA
Operating Voltage	V <sub>OP</sub>	P <sub>O</sub> = 25 mW		2	2.5	V
Wavelength	λ <sub>L</sub>	P <sub>O</sub> = 25 mW	820	830	840	μm
Radiation Half Angle	Horizontal Direction	θ <sub>∥</sub> *	8	10	14	deg.
	Vertical Direction	θ <sub>⊥</sub> *	20	30	37	deg.
Differential Efficiency	η	20 mW / I(25 mW) - I(5 mW)	0.3	0.6	0.8	mW/mA
PIN Dark Current	I <sub>d</sub>	V <sub>R</sub> (PIN) = 30V			0.1	μA
PIN Photo Current	I <sub>P</sub>	P <sub>O</sub> = 25 mW, V <sub>R</sub> (PIN) = 5V	0.2	0.5	0.8	mA
Emission Point Angle Accuracy	X Direction	θ <sub>X</sub>			±2	deg.
	Y Direction	I <sub>Y</sub>			±3	deg.
Oscillation Mode	Single transverse mode					

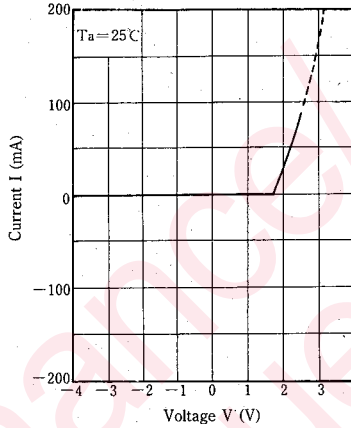
\* θ<sub>∥</sub> and θ<sub>⊥</sub> are measured from the optical axis to the half power point.



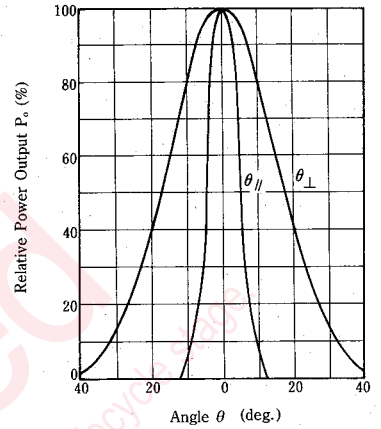
$P_o - I_{OP}$



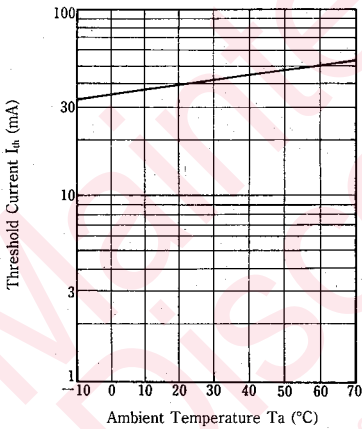
$I - V$



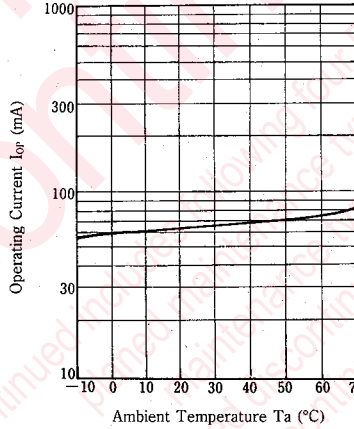
Far Field Pattern



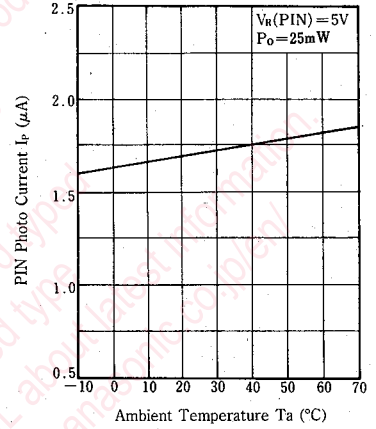
$I_{th} - T_a$



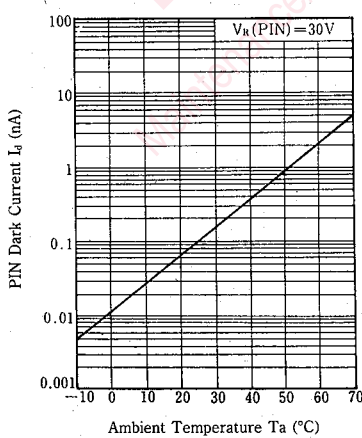
$I_{OP} - T_a$



$I_P - T_a$



$I_d - T_a$



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