

LN9705, LN9705D, LN9705P, LN9705PR

Low Power Laser Diodes

■ Outline

LN9705, 9705D, 9705P and 9705PR are visible and low threshold stable single transverse GaAlAs laser diodes. These laser diodes feature continuous oscillation in the room temperature. Kinds of two polarities are available for car use enabling a continuous operation in high temperature. APC (Automatic Power Control) is possible due to built-in pin photodiode used for light power monitor. They can be widely applied for the light source of light communication, video disc and audio disc drive.

■ Features

- Low threshold current
- Stable single transverse mode oscillation
- With monitor PIN photodiode for radiant output control
- Radiant can be continuously varied up to 5mW
- Direct modulation available
- Visible oscillation wavelength
- Long lifetime, high reliability

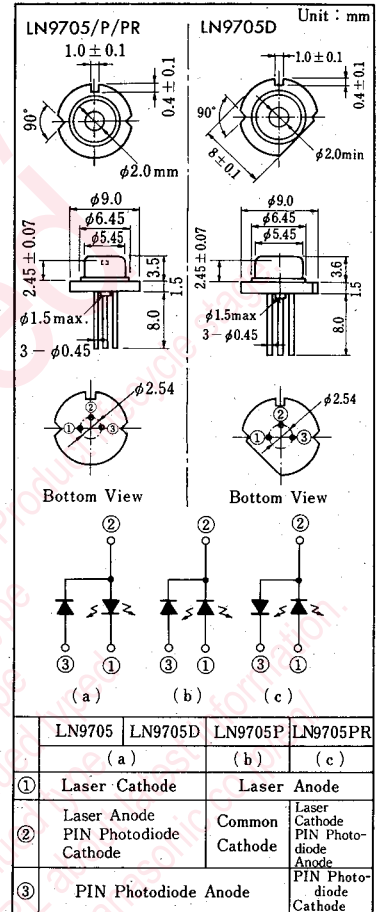
■ Absolute Maximum Ratings (Ta=25°C)

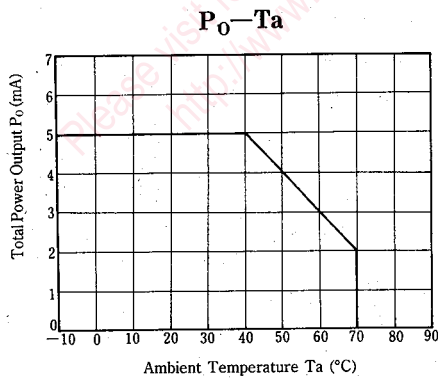
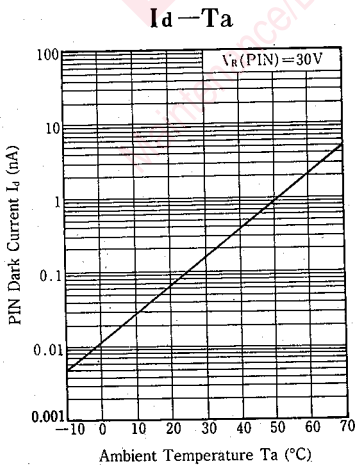
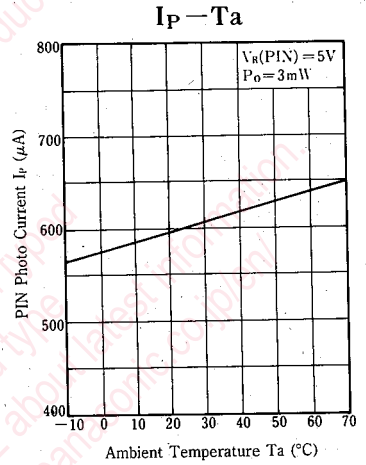
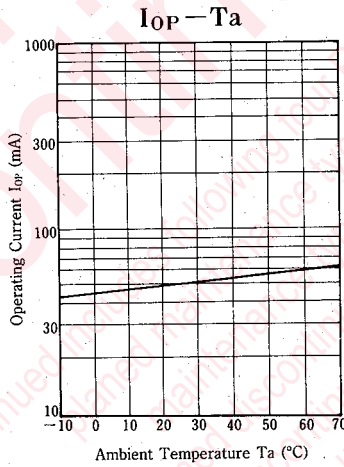
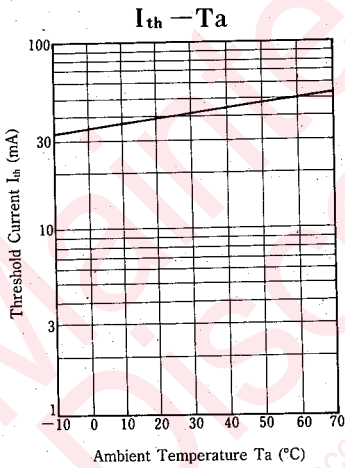
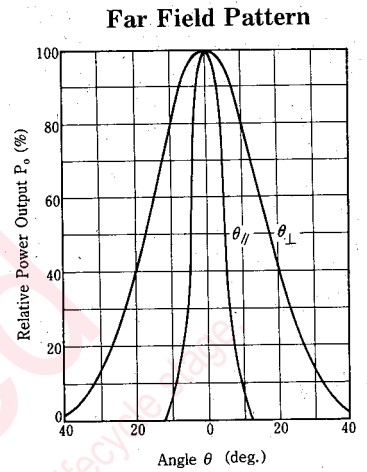
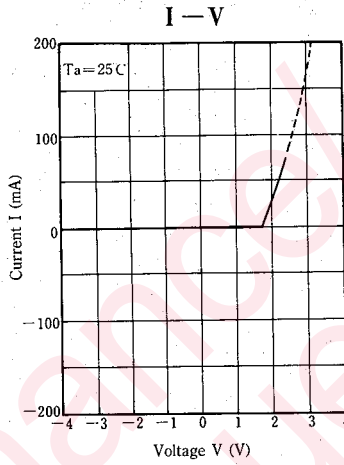
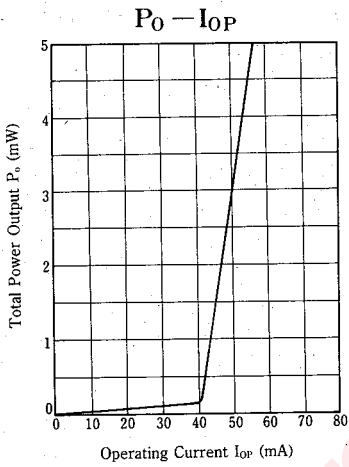
Item	Symbol	Value	Unit
Optical Power Output	P_o	5	mW
Reverse Voltage	Laser	V_R	2 V
	PIN	$V_R(\text{PIN})$	30 V
Power Dissipation	$P_d(\text{PIN})$	60	mW
Operating Temperature	T_{opr}	-10~+60	°C
Storage Temperature	T_{sig}	-40~+85	°C

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

Item	Symbol	Condition	min.	typ.	max.	Unit
Threshold Current	I_{th}	CW	20	40	65	mA
Operating Current	I_{OP}	$P_o = 3 \text{ mW}$	30	50	75	mA
Operating Voltage	V_{OP}	$P_o = 3 \text{ mW}$		1.75	2.5	V
Wavelength	λ_L	$P_o = 3 \text{ mW}$	780	788	795	nm
Radiation Half Angle	Horizontal Direction	θ_h^*	8	10	16	deg.
	Vertical Direction	θ_v^*	20	35	45	deg.
Differential Efficiency	η	$2 \text{ mW} / (I_{(3 \text{ mW})} - I_{(1 \text{ mW})})$	0.1	0.4	0.7	mW/mA
PIN Dark Current	I_d	$V_R(\text{PIN}) = 30 \text{ V}$			0.1	μA
PIN Photo Current	I_P	$P_o = 3 \text{ mW}, V_R(\text{PIN}) = 5 \text{ V}$	0.2	0.6	1.0	mA
Emission Point Angle Accuracy	X Direction	θ_x			± 2	deg.
	Y Direction	θ_y			± 3	deg.
Oscillation Mode	Single transverse mode					

* θ_h and θ_v are measured from the optical axis to the half power point.





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