

# LN9705S, LN9705PS, LN9705PSR

## Low Power Laser Diodes

### ■ Outline

LN9705S, 9705PS and 9705PSR are visible and low threshold stable single transverse GaAlAs laser diodes in small packages. 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 enabled 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

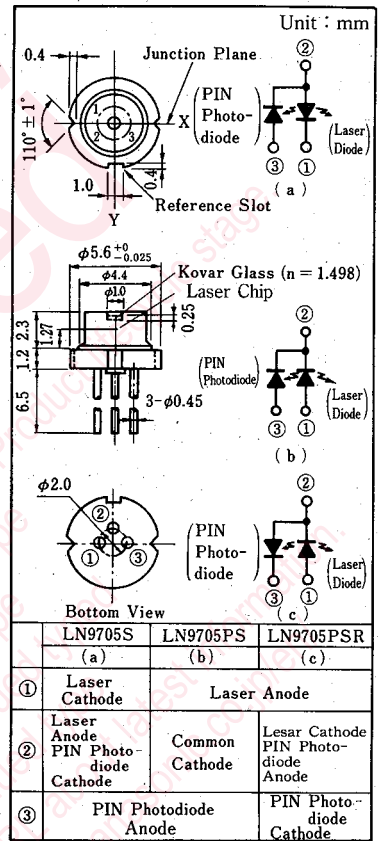
### ■ Absolute Maximum Ratings (Ta=25°C)

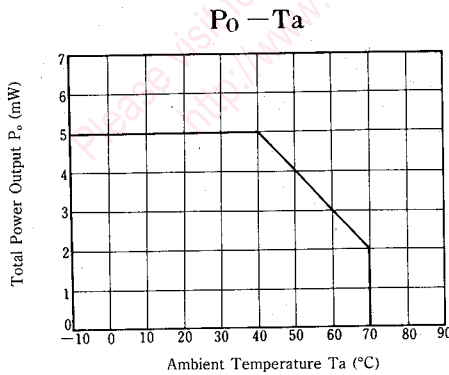
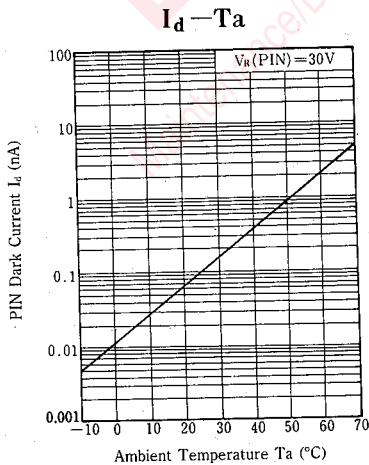
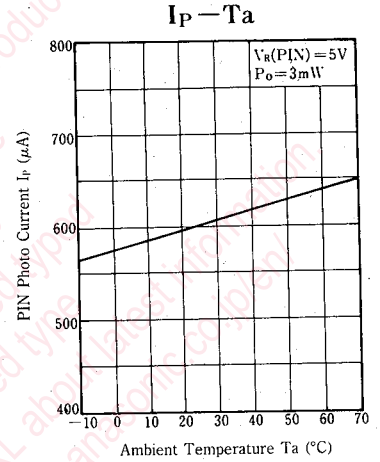
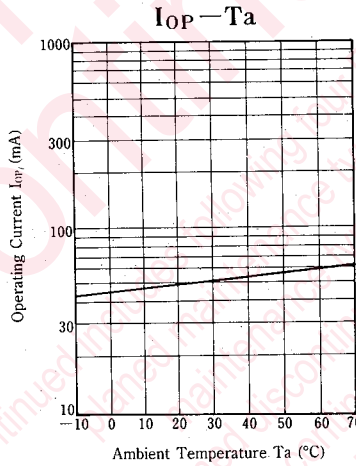
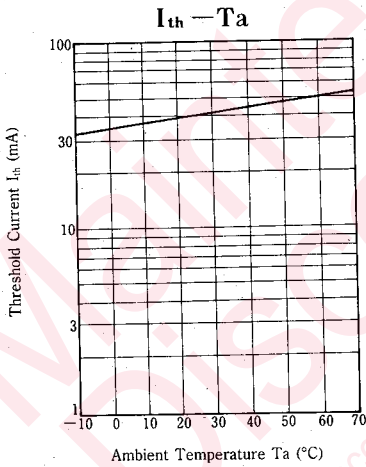
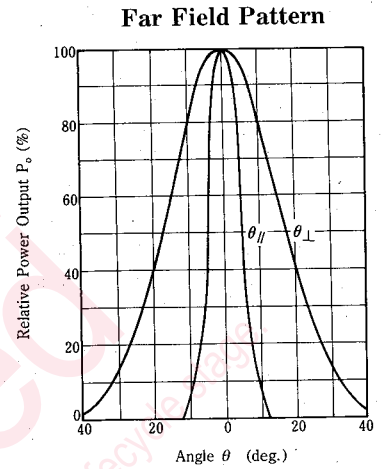
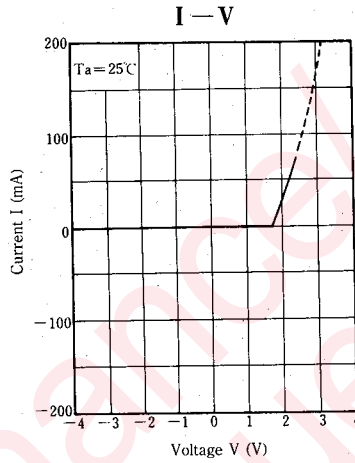
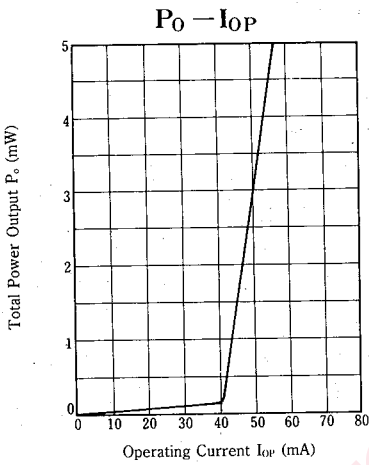
Item	Symbol	Value	Unit
Optical Power Output	P <sub>o</sub>	5	mW
Reverse Voltage	Laser	V <sub>R</sub>	2 V
	PIN	V <sub>R</sub> (PIN)	30 V
Power Dissipation	P <sub>d</sub> (PIN)	60	mW
Operating Temperature	T <sub>opr</sub>	-10~+60	°C
Storage Temperature	T <sub>stg</sub>	-40~+85	°C

### ■ 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> =3mW	30	50	75	mA
Operating Voltage	V <sub>OP</sub>	P <sub>o</sub> =3mW		1.75	2.5	V
Wavelength	λ <sub>L</sub>	P <sub>o</sub> =3mW	780	788	795	nm
Radiation Half Angle	Horizontal Direction	θ <sub>h</sub> *	8	10	16	deg.
	Vertical Direction	θ <sub>v</sub> *	20	35	45	deg.
Differential Efficiency	η	2mW/(I(3mW)-I(1mW))	0.1	0.4	0.7	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> =3mW, V <sub>R</sub> (PIN)=5V	0.1	0.4	0.5	mA
Emission Point Angle Accuracy	X Direction	θ <sub>x</sub>			±2	deg
	Y Direction	θ <sub>y</sub>			±3	deg
Oscillation Mode	Single transverse mode					

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





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