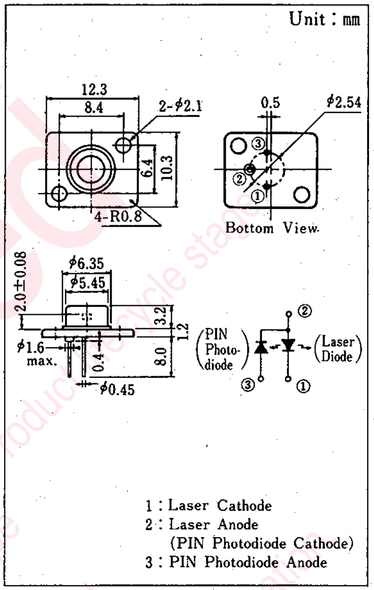
LN9825K

High Power Laser Diodes

■ Outline

The LN9825K is a near-infrared GaAlAs laser diode enabling stable single continuous oscillation of transverse mode in room temperature. It is used for writing of light disc and optical magnetic disc due to high power and possible to operate continuously in high temperature. APC (Automatic Power Control) operation is enabled due to built-in PIN photodiode used for light power monitor. This can be widely applied for the light source of laser printer, optical disc memory drive, optical magnetic disc memory drive, optical measuring equipment and medical equipment.



■ Features

- Stable single transverse mode oscillation
- With monitor PIN photodiode for radiant output control
- Radiant can be continuously varied up to 25mW
- Direct modulation available
- Near-infrared oscillation wavelength
- Long lifetime, high reliability

■ Absolute Maximum Ratings (Ta=25°C)

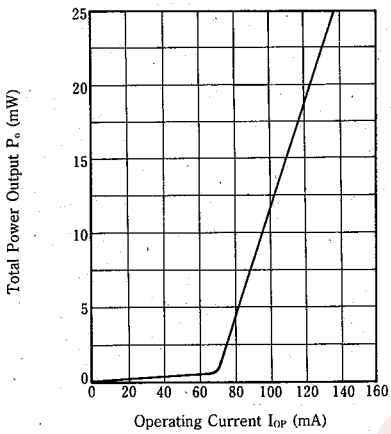
Item		Symbol	Value	Unit
Optical Power Output		P_O	25	mW
Reverse Voltage	Laser	V_R	2	V
	PIN	V_R(PIN)	30	V
Power Dissipation		P_d(PIN)	60	mW
Operating Temperature		T_{opr}	−10～+60	°C
Storage Temperature		T_{stg}	−40～+85	°C

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

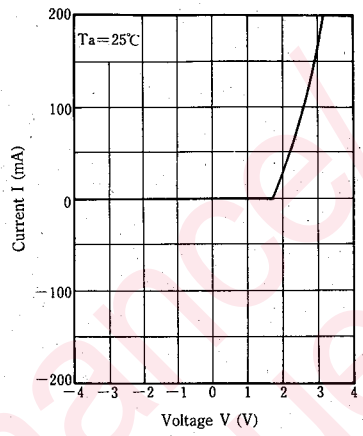
Item		Symbol	Condition	min.	typ.	max.	Unit
Threshold Current		I_{th}	CW	40	70	100	mA
Operating Current		I_{OP}	P_O=20mW	60	115	150	mA
Operating Voltage		V_{OP}	P_O=20mW	1.6	2.2	3	V
Wavelength		λ_L	P_O=20mW	810	830	850	nm
Radiation Half Angle	Horizontal Direction	$\theta_{/\!/}$*	P_O=20mW	7	9	13	deg.
	Vertical Direction	$\theta_{\perp}$*	P_O=20mW	20	27	37	deg.
Differential Efficiency		η	20mW/($I_{(25mW)}$−$I_{(10mW)}$)	0.2	0.35	0.7	mW/mA
PIN Dark Current		I_d	V_R(PIN)=30V			0.1	μA
PIN Photo Current		I_P	P_O=20mW, V_R(PIN)=5V	0.3	2.0	3.5	mA
Emission Point Angle Accuracy	X Direction	θ_X	P_O=20mW			±2	deg.
	Y Direction	θ_Y	P_O=20m W			±3	deg.
Oscillation Mode			Single transverse mode				

* $\theta_{/\!/}$ and $\theta_{\perp}$ are measured from the optical axis to the half power point.

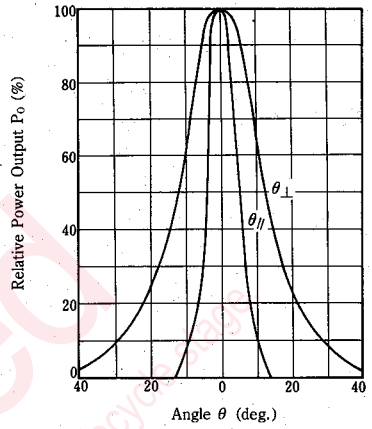
$P_O - I_{OP}$



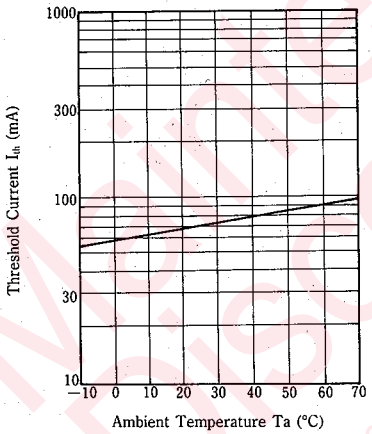
I — V



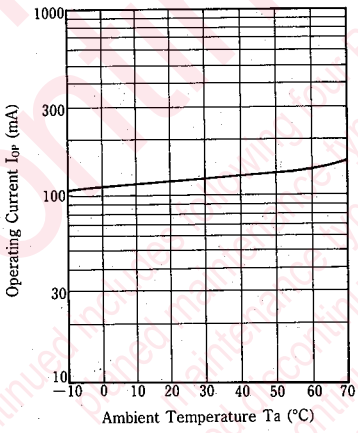
Far Field Pattern



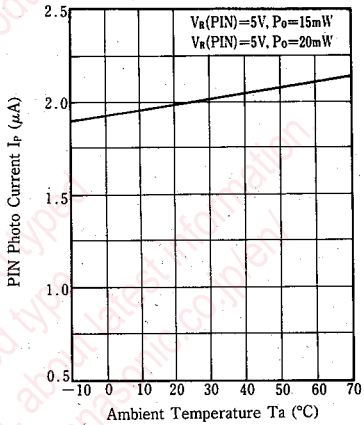
$I_{th} - Ta$



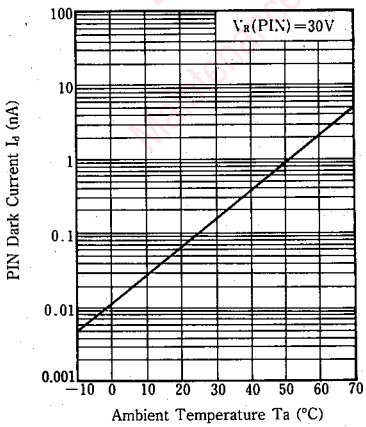
$I_{OP} - Ta$



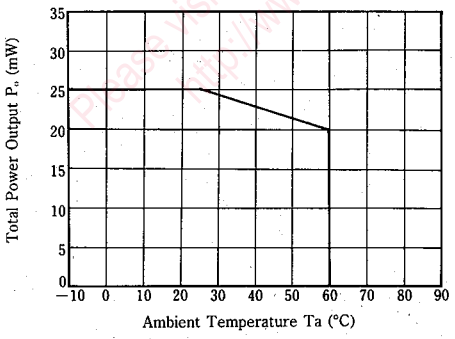
$I_P - Ta$



$I_d - Ta$



$P_O - Ta$



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