

LN9840 (Tentative), LN9840P (Tentative)

High Power Laser Diodes

■ Outline

The LN9840 and LN9840P are near-infrared GaAlAs laser diode enabling stable single mode continuous oscillation in room temperature. Two polarities are available for high power and possible to operate continuously in high temperature. APC (Automatic Power Control) operation is possible 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 40mW
- Direct modulation available
- Near-infrared oscillation wavelength
- Long lifetime, high reliability

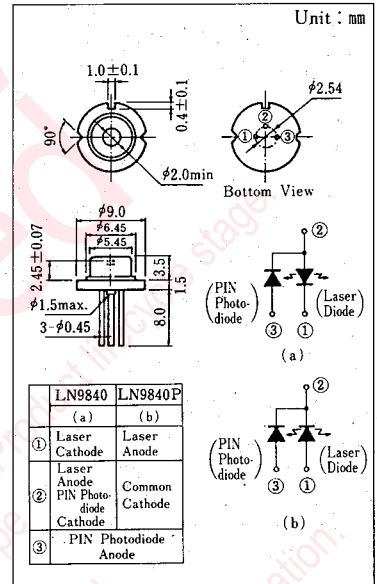
■ Absolute Maximum Ratings (Ta=25°C)

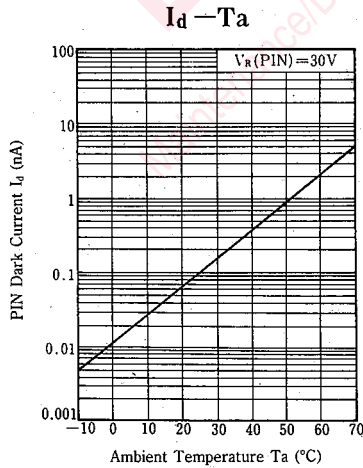
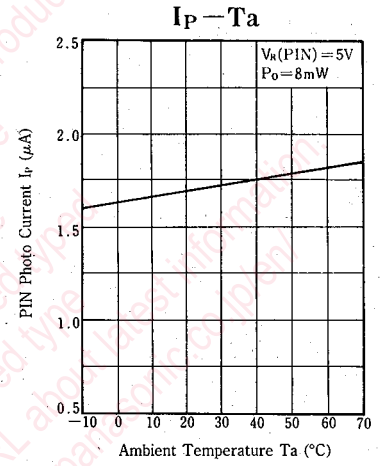
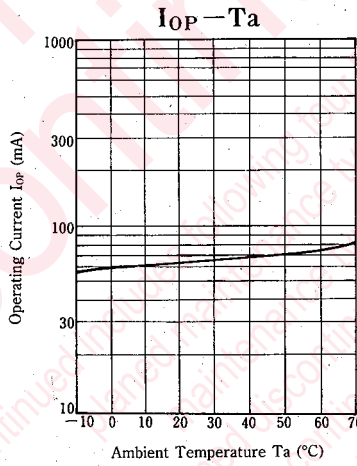
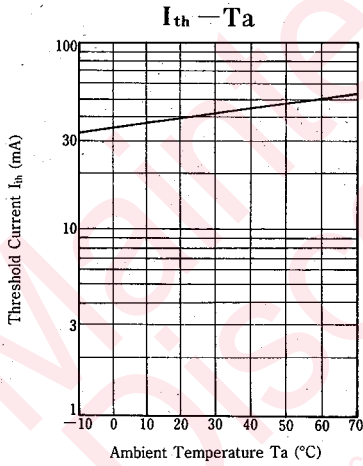
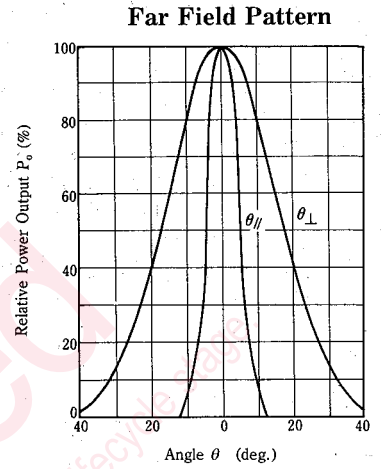
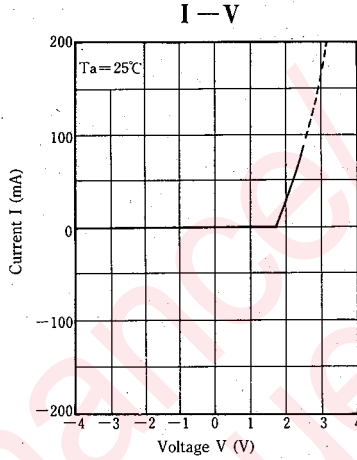
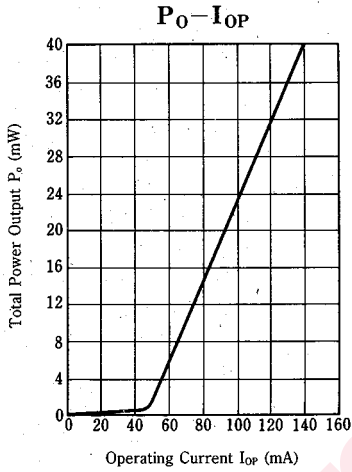
| Item | Symbol | Value | Unit |
|-----------------------|----------------------|----------------------|------|
| Optical Power Output | P _O | 40 | mW |
| Reverse Voltage | Laser | V _R | 2 V |
| | PIN | V _R (PIN) | 30 V |
| Power Dissipation | P _d (PIN) | 60 | mW |
| Operating Temperature | T _{opr} | -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 | 30 | 50 | 75 | mA |
| Operating Current | I _{OP} | P _O =32mW, | 90 | 120 | 150 | mA |
| Operating Voltage | V _{OP} | P _O =32mW, | | 2.2 | 3.0 | V |
| Wavelength | λ _L | P _O =32mW, | 820 | 830 | 845 | nm |
| Radiation Half Angle | Horizontal Direction | θ _∥ * | 8 | 10 | 14 | deg. |
| | Vertical Direction | θ _⊥ * | 20 | 27 | 37 | deg. |
| Differential Efficiency | η | 27mW / I(32mW) - I(5mW) | 0.3 | 0.5 | 0.8 | mW/mA |
| PIN Dark Current | I _d | V _R (PIN)=30V | | | 0.1 | μA |
| PIN Photo Current | I _P | P _O =32mW, V _R (PIN)=5V | 0.2 | 0.6 | 1.4 | mA |
| Emission Point Angle Accuracy | X Direction | θ _X | | | ±2 | deg. |
| | Y Direction | θ _Y | | | ±3 | deg. |
| Oscillation Mode | Single transverse mode | | | | | |

* θ_∥ and θ_⊥ are measured from the optical axis to the half power point.





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