

### TO-9 Packaged Laser Diode

High Power Single-Mode and Multi-Mode SemiNex Lasers  
 12xx to 19xx nm  
 Custom Wavelengths Available  
 Lensed Options Available

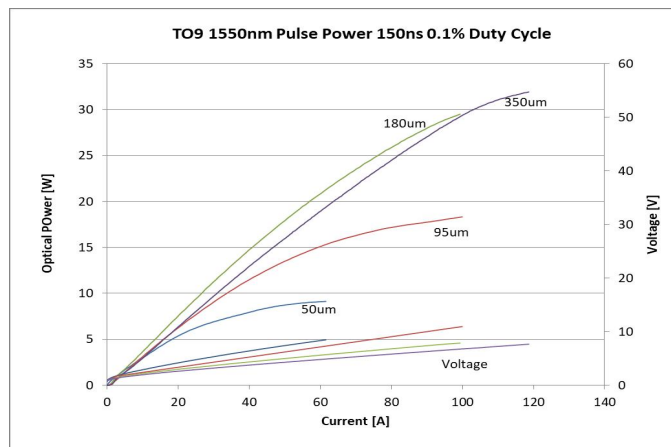
**Applications**

- OEM Medical
- Professional Medical
- LiDAR
- Military / Aerospace
- Illumination

**Features**

- Cost effective
- High Output Power
- High Dynamic Range
- High Efficiency
- Standard Low Cost Package

SemiNex delivers the highest available power at infrared wavelengths between 12xx and 19xx nm. When necessary we will further optimize the design of our InP laser chips to meet our customers' specific optical and electrical performance needs. Diodes, bars and packages are tested to meet customer and market performance demands. Typical results and packaging options are shown. Contact SemiNex for additional details or to discuss your specific requirements.





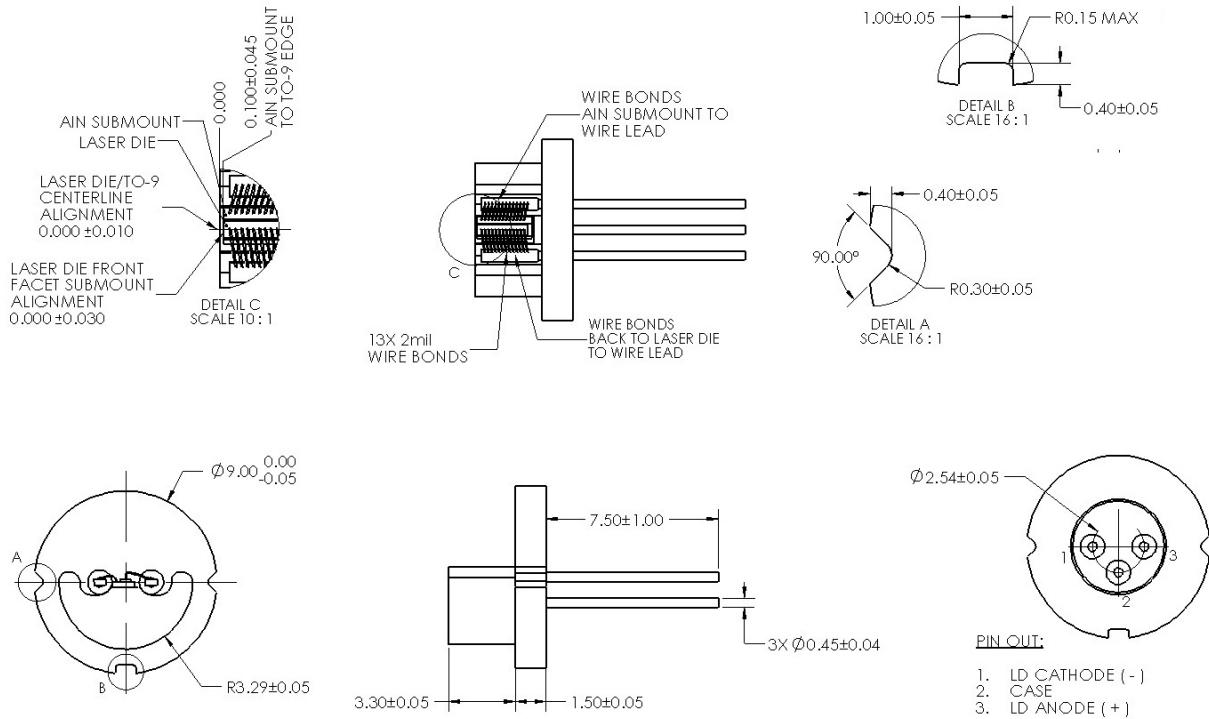


Pulsed\* TO9



|                           | Symbol                     | TO9-149   | Units                |
|---------------------------|----------------------------|-----------|----------------------|
| <b>Optical</b>            |                            |           |                      |
| Wavelength                | $\lambda_c$                | 1550      | nm ( $\pm 20$ )      |
| Output Power (<10ns)      | $P_c$                      | 70.00     | watts ( $\pm 10\%$ ) |
| Output Power (150ns)      | $P_r$                      | 30.00     | watts ( $\pm 10\%$ ) |
| Chip Cavity Length        | CL                         | 2500      | $\mu\text{m}$        |
| No. of Junctions          |                            | 1         |                      |
| Emitter Width             | W                          | 350       | $\mu\text{m}$        |
| Emitter Height            | H                          | 1         | $\mu\text{m}$        |
| Spectral Width            | $\delta\lambda$            | 15        | nm 3dB               |
| Slope Efficiency          | $\eta_s$                   | 0.35      | W/A                  |
| Fast Axis Div.*           | $\Theta_{\text{perp}}$     | 28        | deg FWHM             |
| Slow Axis Div.            | $\Theta_{\text{parallel}}$ | 10        | deg FWHM             |
| <b>Electrical</b>         |                            |           |                      |
| Power Conversion Eff.     | $\eta$                     | 3         | %                    |
| Operating Current (<10ns) | $I_{\text{op}}$            | 200       | A                    |
| Operating Current (150ns) | $I_{\text{op}}$            | 100       | A                    |
| Threshold Current         | $I_{\text{th}}$            | 3.8       | A                    |
| Operating Voltage         | $V_{\text{op}}$            | 6.6       | V                    |
| <b>Mechanical</b>         |                            |           |                      |
| Weight                    |                            | 1.5       | g                    |
| Operating Temp.**         |                            | -40 to 60 | $^{\circ}\text{C}$   |
| Storage Temp.             |                            | -40 to 80 | $^{\circ}\text{C}$   |

Specified values are rated at a constant heat sink temperature of 20°C.  
 \*\*Specified operating conditions are based on 20C heat sink temperature. High temperature operation will reduce performance and MTTF.  
 Unless otherwise indicated all values are nominal.  
 Uncapped TO9 specifications assume heatsinking underneath laser chip.  
 Capped TO9 specifications assume heatsinking only on flat surface where pins extend.



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