

# High Power Laser Diode TO-Cans



## Part Number: TO56-103

High Power TO56 Package  
Multi-Mode Fabry-Perot  
Pulsed Wavelength at 1550nm  
Lensed Options Available



## Features

- High Output Power
- High Dynamic Range
- High Efficiency
- Standard TO56
- Cost Effective

## Application

- Professional Medical
- Home Use Medical
- Laser Range Finder
- Target Illumination
- Military Systems
- TOF LiDAR for Automotive and Drones
- Telecom OTDR
- Optical Comm



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 & GaSb 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.

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## Specification

TO56-103



| Optical                   | Symbol               | Typ.      | Units                |
|---------------------------|----------------------|-----------|----------------------|
| Center Wavelength         | $\lambda_c$          | 1550      | nm ( $\pm 20$ )      |
| Output Power (<10ns)*     | $P_{out}$            | 32        | Watts ( $\pm 10\%$ ) |
| Output Power (150ns)*     | $P_{out}$            | 24        | Watts ( $\pm 10\%$ ) |
| Emitter Width             | $W$                  | 180       | $\mu m$              |
| Spectral Width FWHM       | $\Delta\lambda$      | 15        | nm                   |
| Slope Efficiency          | $\eta$               | 0.2       | W/A                  |
| Fast Axis Div.            | $\theta_{\perp}$     | 28        | deg FWHM             |
| Slow Axis Div.            | $\theta_{\parallel}$ | 14        | deg FWHM             |
| Electrical                | Symbol               |           | Units                |
| Power Conversion Eff.     | $\eta$               | 2         | %                    |
| Operating Current (<10ns) | $I_{op}$             | 160       | A                    |
| Operating Current (150ns) | $I_{op}$             | 80        | A                    |
| Threshold Current         | $I_{TH}$             | 1         | A                    |
| Operating Voltage         | $V_{op}$             | 9.5       | V                    |
| Duty Cycle                | DC                   | 0.1       | %                    |
| Mechanical                | Symbol               | Range     | Units                |
| Operating Temp.**         |                      | -40 to 60 | $^{\circ}C$          |
| Storage Temp.             |                      | -40 to 80 | $^{\circ}C$          |

\*Specified values are rated at a constant heat sink temperature of 20 $^{\circ}C$ .

\*\*High temperature operation will reduce performance and MTTF.  
Unless otherwise indicated all values are nominal.

\*Available Lenses & Caps

| Suffix | Description                                      |
|--------|--|
| -116   | TO-56 Cap FAC f=590 $\mu m$ , 2.8mm Lg           |
| -126   | TO-56 Cap, Lens Matched f=171 $\mu m$ , 2.8mm Lg |
| -138   | TO-56 Cap  |

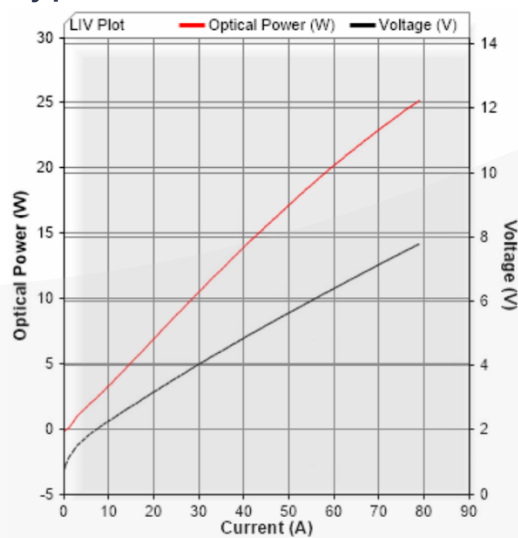
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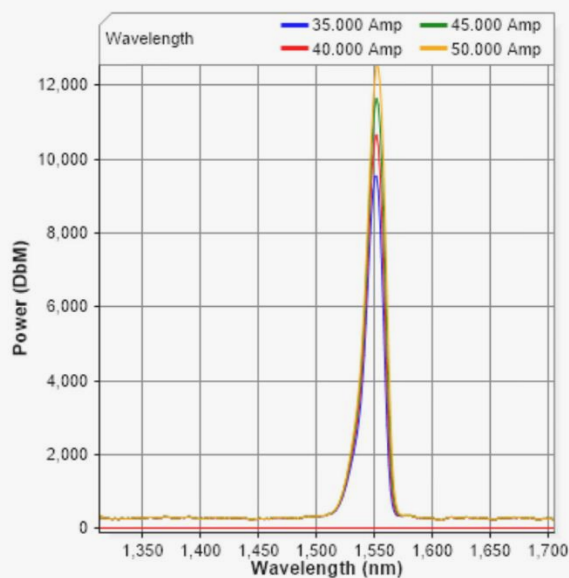
## SemiNex Laser Diodes TO56-103

### Graphs & Data

#### Typical TO56 L-I-V Characteristics



#### Typical TO56 Output Spectrum



\*Tested with 150nsec pulse @ 0.1% Duty Cycle

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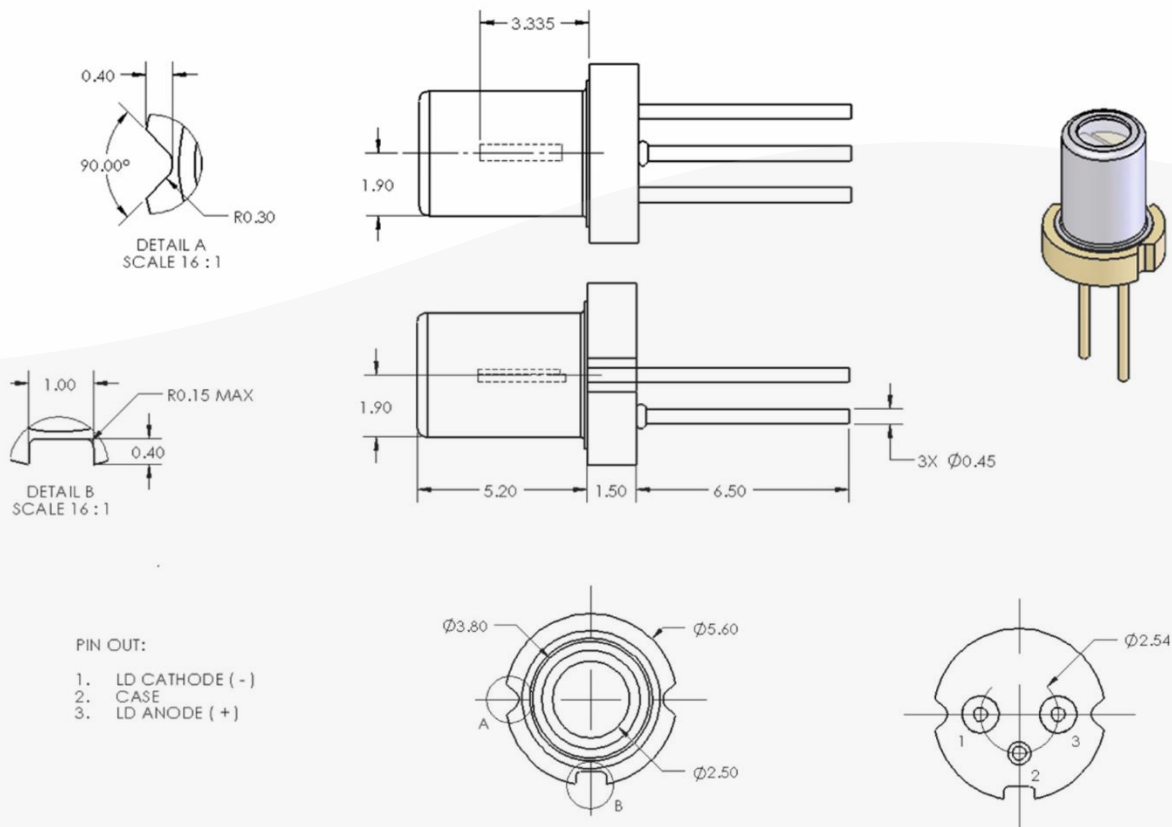


## Mechanical Drawing

TO56-103-138

TO56-103-126

TO56-103-116



**PIN OUT:**

1. LD CATHODE (-)
2. CASE
3. LD ANODE (+)

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