

High Power Laser Diode TO-Cans



Part Number: TO56-104

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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High Power Laser Diode TO-Cans



Specification

TO56-104



Optical	Symbol	Typ.	Units
Center Wavelength	λ_c	1550	nm (± 20)
Output Power (<10ns)*	P_{out}	40	Watts ($\pm 10\%$)
Output Power (150ns)*	P_{out}	27	Watts ($\pm 10\%$)
Emitter Width	W	350	μm
Spectral Width FWHM	$\Delta\lambda$	15	nm
Slope Efficiency	η	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.	η	2	%
Operating Current (<10ns)	I_{op}	200	A
Operating Current (150ns)	I_{op}	100	A
Threshold Current	I_{TH}	3.8	A
Operating Voltage	V_{op}	9	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

Part Number	Description
TO56-104	TO56 Uncapped
TO56-104-116	TO-56 Cap FAC f=590 μm , 2.8mm Lg, Pout: 25.6W (150ns)
TO56-104-126	TO-56 Cap, Lens Matched f=171 μm , 2.8mm Lg, Pout: 25.6W (150ns)
TO56-104-138	TO-56 Cap, Pout: 25.6W (150ns)

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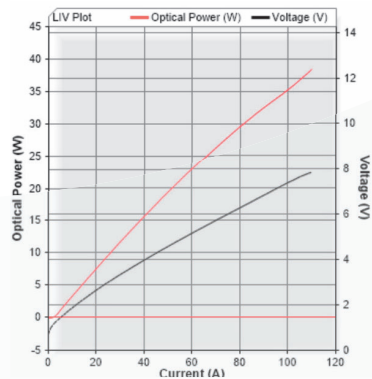
High Power Laser Diode TO-Cans



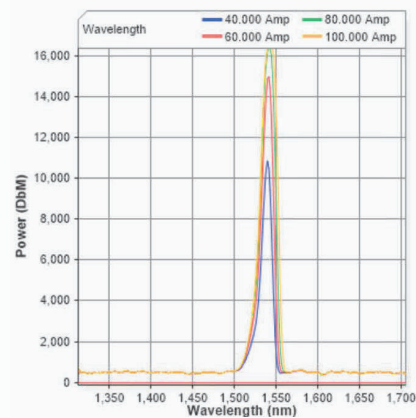
SemiNex Laser Diodes TO56-104

Graphs & Data

Typical TO56 L-I-V Characteristics



Typical TO56 Output Spectrum



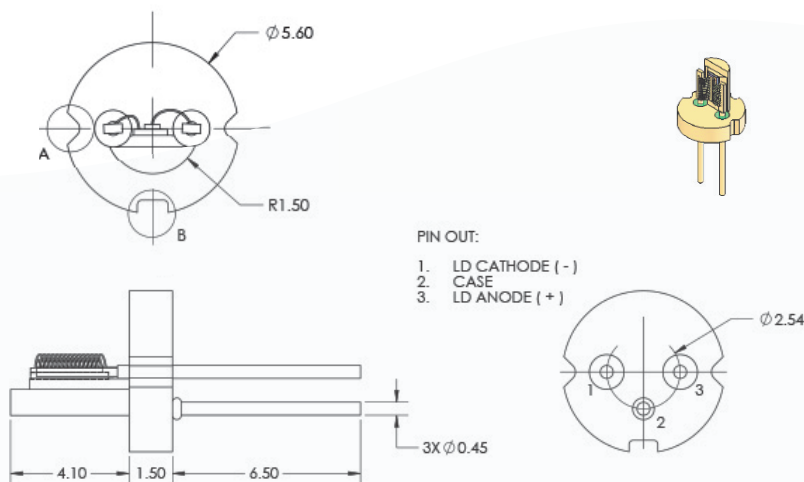
*Tested with 150nsec pulse @ 0.1% Duty Cycle

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High Power Laser Diode TO-Cans



Mechanical Drawing TO56-104



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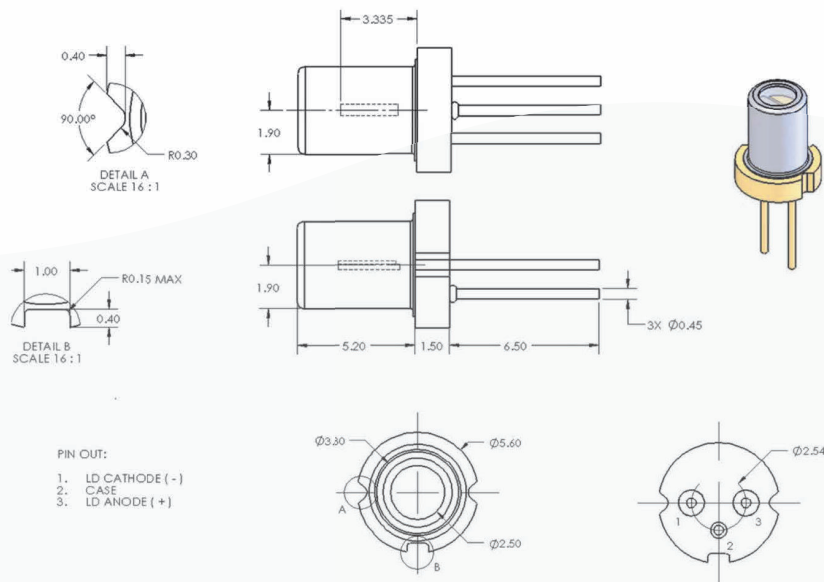


Mechanical Drawing

TO56-104-138

TO56-104-126

TO56-104-116



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