High Power Laser Diode TO-Cans

Part Number: TO9-174

High Power TO9 Package
Single-Mode Fabry-Perot
Pulsed Wavelength at 1650nm
Lensed Options Available

Features

- High Output Power
- High Dynamic Range
- High Efficiency
- Standard TO9
- Cost Effective

Application

- Telecom OTDR
- Laser Range Finder
- Target Illumination

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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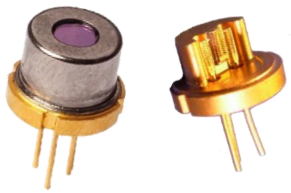
Specification

TO9-174



Optical	Symbol	Typ.	Units
Center Wavelength	λ_c	1650	nm (±20)
Output Power (<10ns)*	P_{out}	1.4	Watts (±10%)
Output Power (150ns)*	P_{out}	0.5	Watts (±10%)
Emitter Width	W	5	µm
Spectral Width FWHM	$\Delta\lambda$	10	nm
Slope Efficiency	η	0.35	W/A
Fast Axis Div.	$\Theta_{\perp}$	28	deg FWHM
Slow Axis Div.	$\Theta_{\parallel}$	10	deg FWHM
Electrical	**Symbol**		**Units**
Power Conversion Eff.	η	10	%
Operating Current (<10ns)	I_{op}	4	A
Operating Current (150ns)	I_{op}	2	A
Threshold Current	I_{TH}	0.05	A
Operating Voltage	V_{op}	3.2	V
Duty Cycle	DC	0.1	%
Mechanical	**Symbol**	**Range**	**Units**
Operating Temp.**		-40 to 60	°C
Storage Temp.		-40 to 80	°C

*Specified values are rated at a constant heat sink temperature of 20°C.
**High temperature operation will reduce performance and MTTF.
Unless otherwise indicated all values are nominal.

*Available Lenses & Caps

Part Number	Description*
TO9-174	TO9 Uncapped, Fast Axis: 30° FWHM, Slow Axis: 10° FWHM
TO9-174-114	TO9 4.6mm Tall Cap, Fast Axis: 30° FWHM, Slow Axis: 10° FWHM
TO9-174-115	TO9 5.8mm Tall Cap, Lens Collimated, Fast Axis: 0.3° FWHM, Slow Axis: 10° FWHM
TO9-174-140	TO-9 5.8mm Tall Cap, Lens Matched f=171um, 5.0mm Lg, Fast Axis: 9°, Slow Axis: 12° $1/e^2$ **
TO9-174-161	TO9 5.8mm Tall Cap, Fast Axis: 30° FWHM, Slow Axis: 10° FWHM

*Lensing specifications are typical values provided based on best-effort measurements.
**Single mode TO9s with matched lenses deliver a 3:4 (fast: slow) beam profile at best effort.

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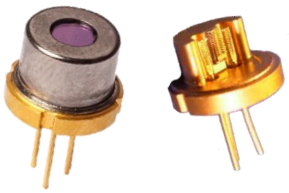
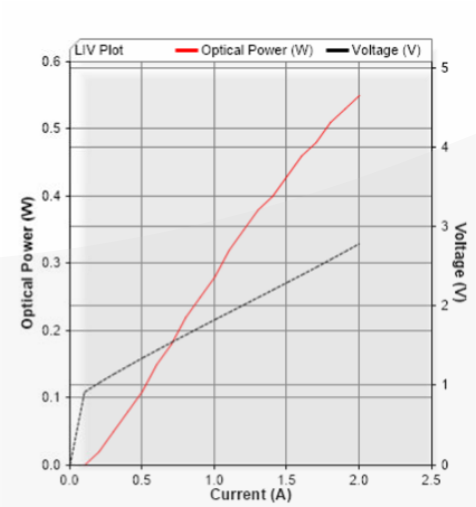
SemiNex Laser Diodes TO9-174

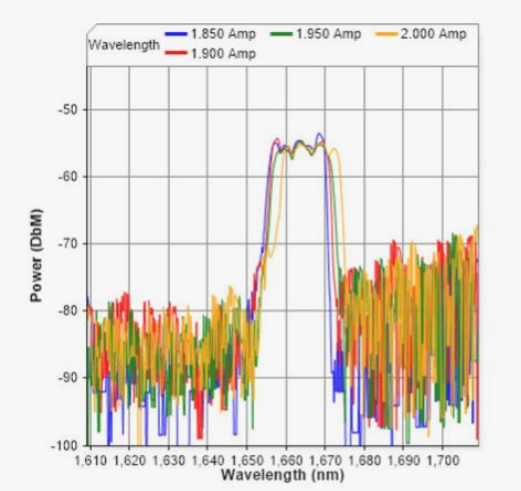


Graphs & Data

Typical TO9 L-I-V Characteristics



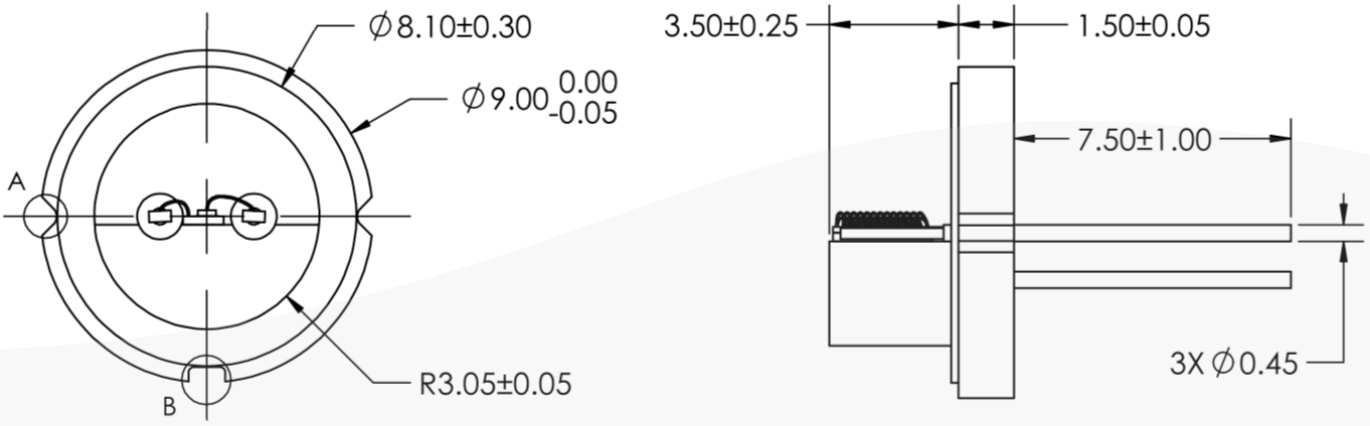
Typical TO9 Output Spectrum



*Tested with 150nsec pulse @ 0.1% Duty Cycle

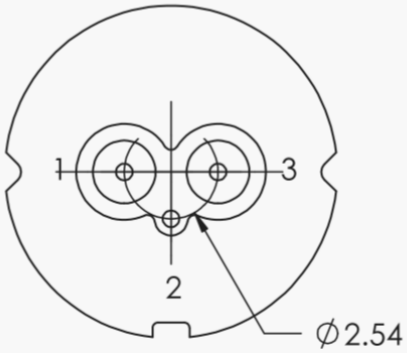
High Power Laser Diode TO-Cans

Mechanical Drawing
TO9-174



PIN OUT:

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



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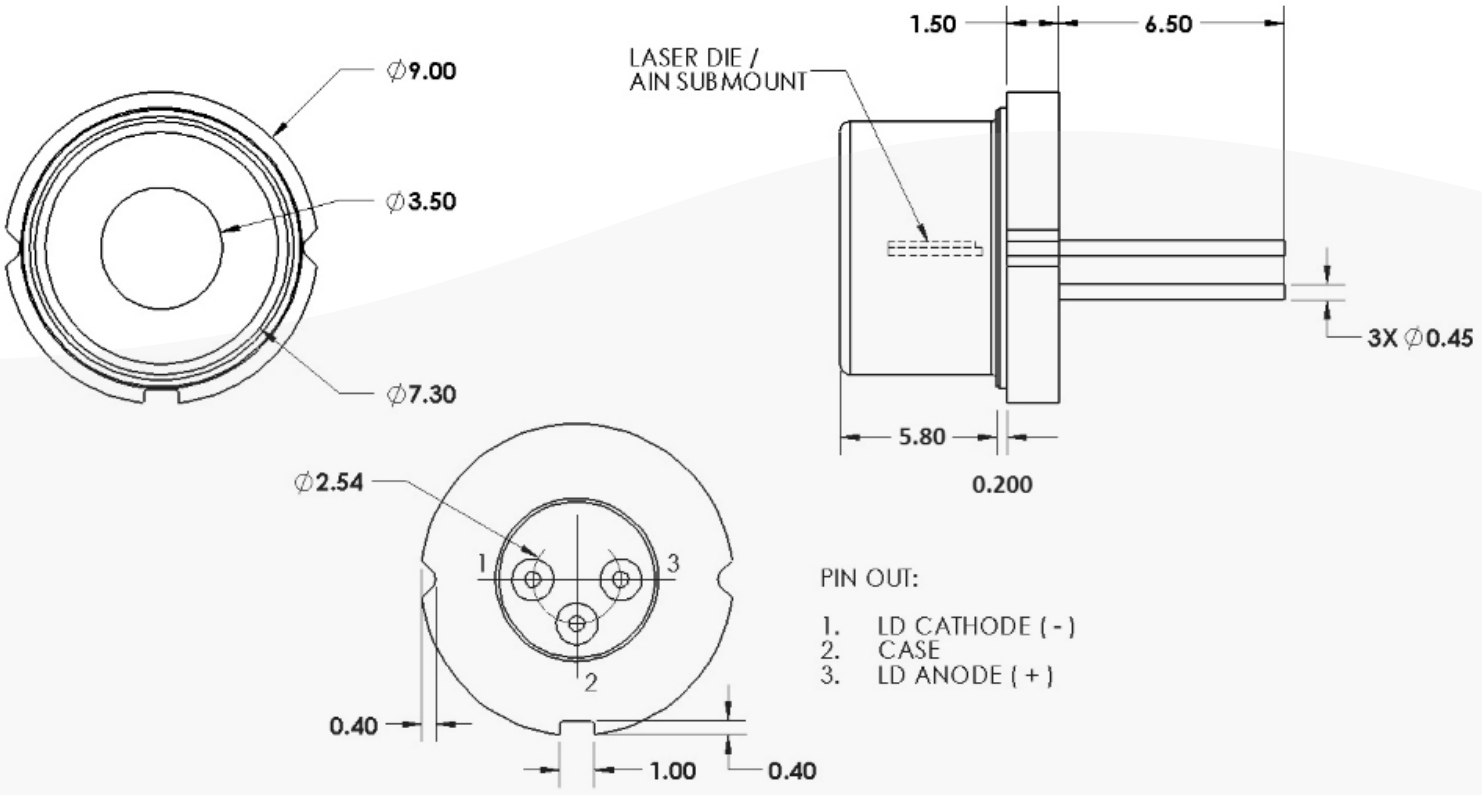
High Power Laser Diode TO-Cans

Mechanical Drawing
TO9-174-115
TO9-174-140
TO9-174-161



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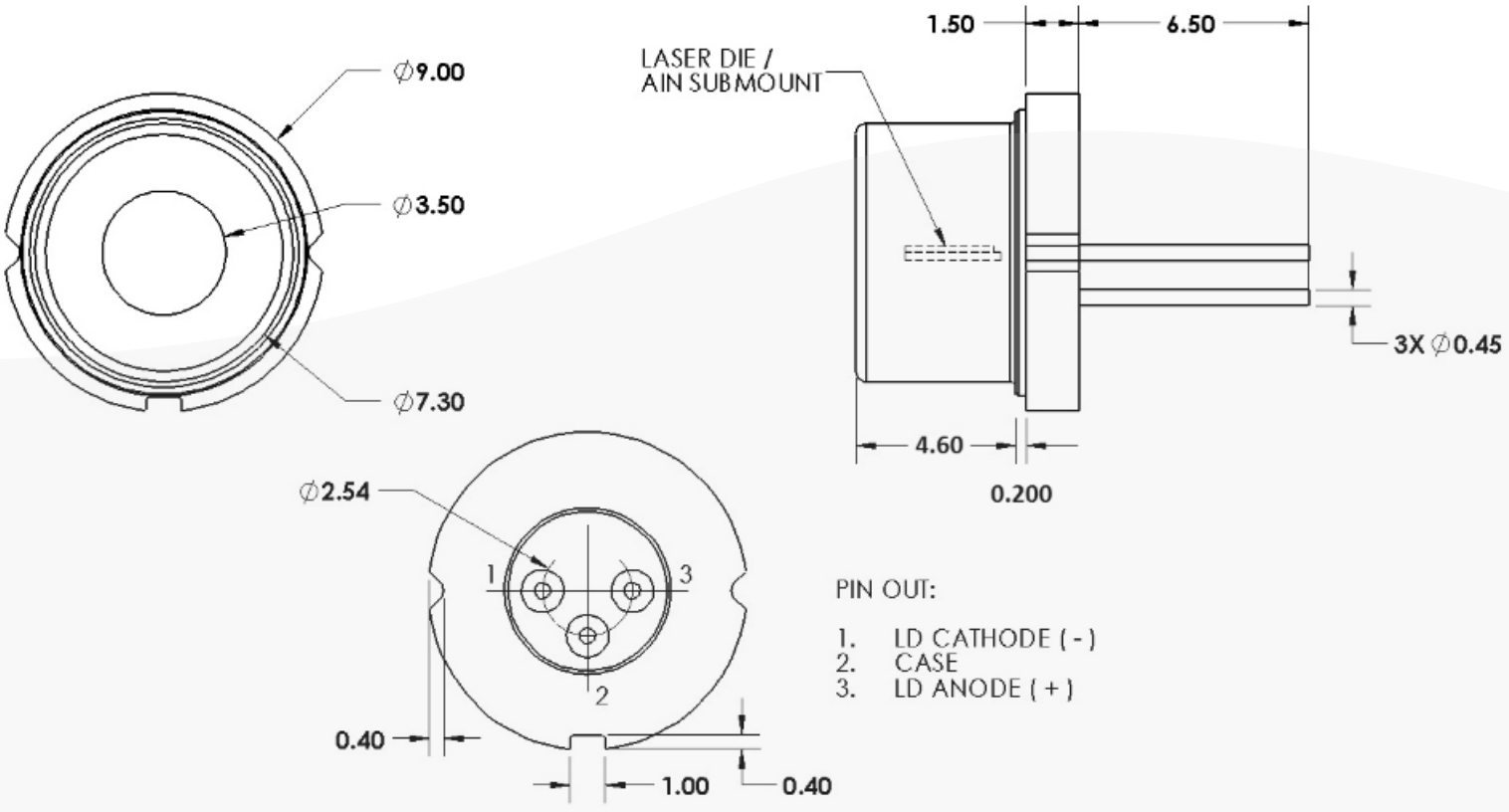
High Power Laser Diode TO-Cans

Mechanical Drawing
TO9-174-114



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