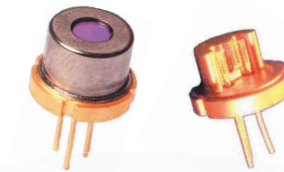


High Power Laser Diode TO-Cans



Part Number: TO9-117

High Power TO9 Package
Multi-Mode Fabry-Perot
Pulsed Wavelength at 1560nm
Lensed Options Available



Features

- High Output Power
- High Dynamic Range
- High Efficiency
- Standard TO9
- 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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Individual. Innovative. Exceptional.

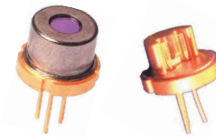
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High Power Laser Diode TO-Cans



Specification

TO9-117



Optical	Symbol	Typ.	Units
Center Wavelength	λ_c	1560	nm (± 20)
Output Power (<10ns)*	P_{out}	14	Watts ($\pm 10\%$)
Output Power (150ns)*	P_{out}	9	Watts ($\pm 10\%$)
Emitter Width	W	50	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.	$\theta_{\parallel}$	10	deg FWHM
Electrical	Symbol		Units
Power Conversion Eff.	η	4	%
Operating Current (<10ns)	I_{op}	70	A
Operating Current (150ns)	I_{op}	35	A
Threshold Current	I_{TH}	0.5	A
Operating Voltage	V_{op}	6	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*
TO9-117	TO9 Uncapped, Fast Axis: 30 $^{\circ}$ FWHM, Slow Axis: 10 $^{\circ}$ FWHM
TO9-117-114	TO9 Cap, 4.6mm Tall, Fast Axis: 30 $^{\circ}$ FWHM, Slow Axis: 10 $^{\circ}$ FWHM, Pout: 8.5W (150ns)
TO9-117-115	TO9 5.8mm Tall Cap, Lens Collimated<5mrad f=590um, 5mm lg, Fast Axis: 0.3 $^{\circ}$ FWHM, Slow Axis: 10 $^{\circ}$ FWHM, Pout: 8.5W (150ns)
TO9-117-140	TO9 5.8mm Tall Cap, Lens Matched f=171um, 5.0 lg, Fast Axis: 10 $^{\circ}$, Slow Axis: 10 $^{\circ}$ FWHM, Pout: 8.5W (150ns)
TO9-117-161	TO9 Cap 5.8mm Tall, Fast Axis: 30 $^{\circ}$ FWHM, Slow Axis: 10 $^{\circ}$ FWHM, Pout: 8.5W (150ns)

*Lensing specifications are typical values provided based on best-effort measurements.

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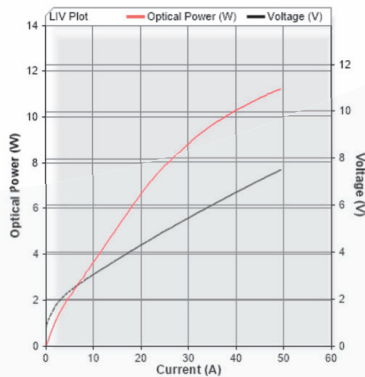
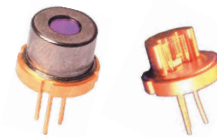
High Power Laser Diode TO-Cans



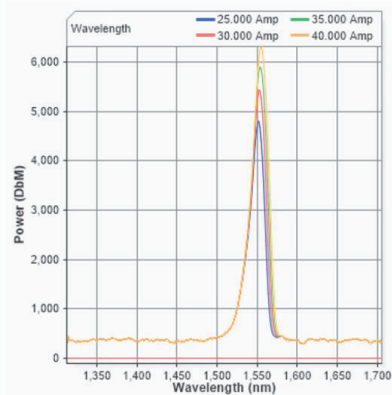
SemiNex Laser Diodes TO9-117

Graphs & Data

Typical TO9 L-I-V Characteristics



Typical TO9 Output Spectrum



*Tested with 150nsec pulse @ 0.1% Duty Cycle

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



DANGER

VISIBLE / INVISIBLE LASER RADIATION
AVOID DIRECT EXPOSURE TO BEAM



**CLASS IIb and IV LASER
PRODUCTS**

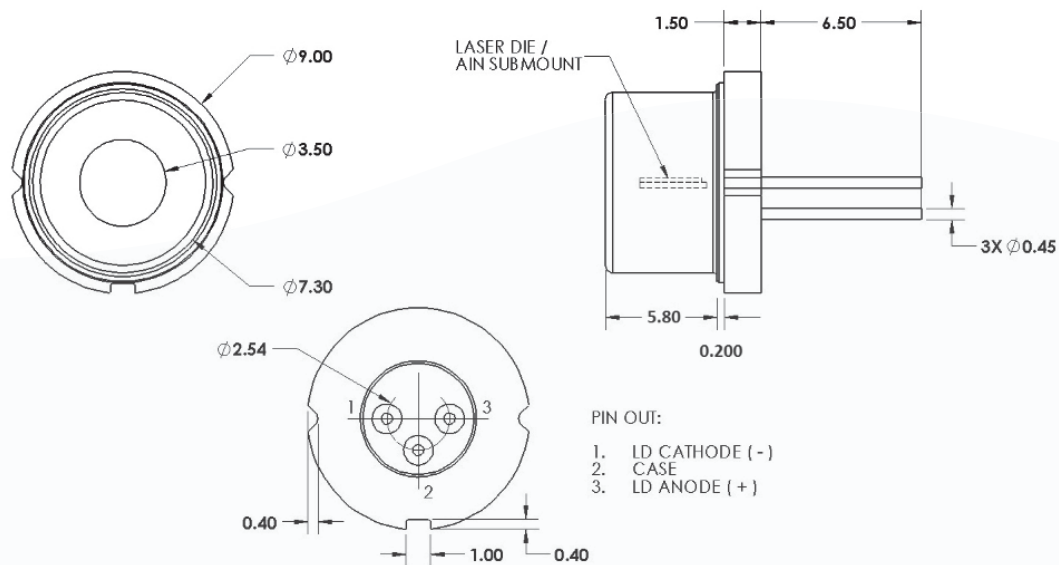
This product complies with 21CFR1040 as applicable.
Laser aperture is on the test station. Laser radiation
from this product is considered an acute hazard to the
skin and eyes.

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High Power Laser Diode TO-Cans



Mechanical Drawing
TO9-117-115
TO9-117-140
TO9-117-161



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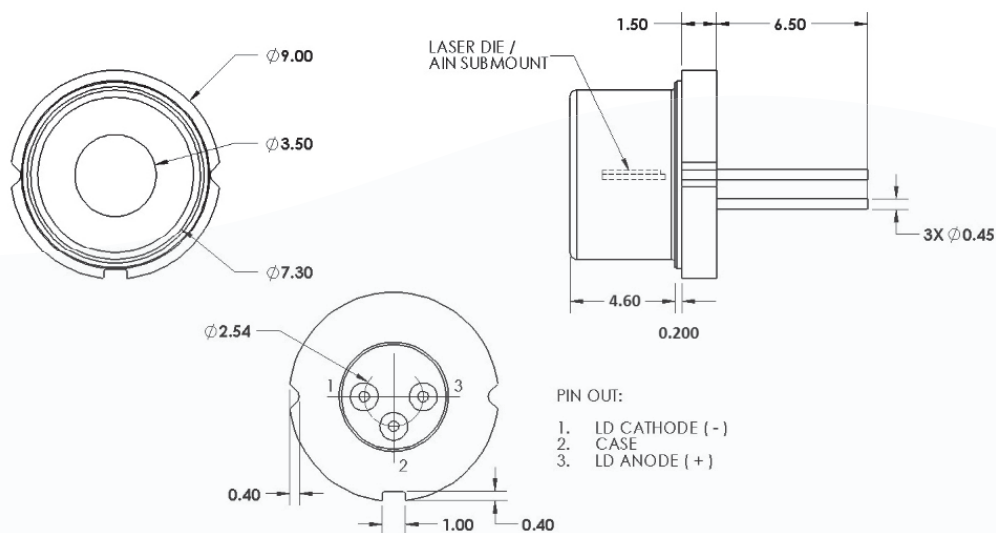
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High Power Laser Diode TO-Cans



Mechanical Drawing TO9-117-114



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