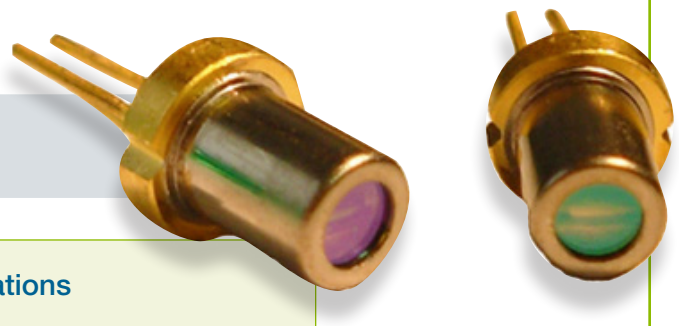
TO-56 Packaged Laser Diode

These High Power IR laser diodes use high precision indium phosphide semiductor materials to convert electrical energy directly and efficiently into coherent optical energy. A non-conventional doping profile and unique application of quantum physics provides superior performance in the areas of thermal efficiency, electrical efficiency and total optical power.

Electrical efficiency gains are achieved by ensuring less current leakage around the semiconductor quantum wells where electron energy is converted to photonic energy. Higher electrical efficiency, in turn, reduces the heat buildup caused by lost electrons. In addition, the unique design minimizes thermal resistance; thus, the heat generated from the diode is easy to dissipate. Lower heat generation significantly raises the optical power at which the laser can operatee. The combination of higher electrical and thermal efficiency achieves power levels which exceed current industry performance by 2 to 6 times.

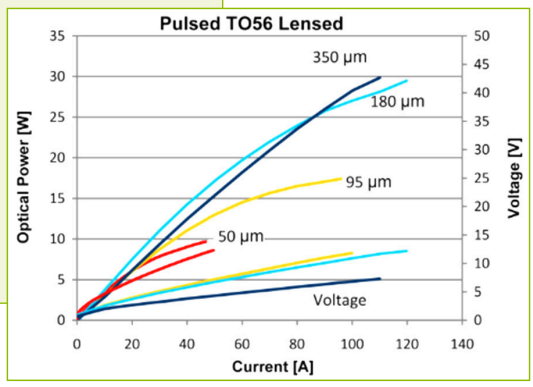


Product Features

- Cost Effective
- High Output Power
- High Dynamic Range
- High Efficiency
- Standard Low Cost Package
- Fast Axis Collimated to 5 mrad with f=590 um Lens
- Capped

Applications

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



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Specifications

		TO-56-114-116	TO-56-116-116	TO-56-103-116	TO-56-102-116	
Optical	**Symbol**					**Units**
Wavelength	λ_c	1310	1470	1550	1550	nm (±20)
Average Output Power*	P_{AVG}	19	13	24	14	milliwatts
Peak Output Power*	P_o	19	13	24	14	watts
Cavity Length (typ.)	CL	2500	2500	2500	2500	µm
Emitter Width	W	95	95	95	95	µm
Emitter Height	H	1	1	1	1	µm
Operating Current	I_{op}	60	60	50	50	A
Operating Voltage	V_{op}	6.2	5.3	9.5	6.2	V
Threshold Current	I_{th}	0.7	0.7	1.0	0.5	A
Specifications						
Spectral Width	δλ	15	15	15	15	nm 3dB
Temperature Coeff.	δλ/δλT	0.55	0.55	0.55	0.55	nm/C
Fast Axis Div.	Θ_perp	0.3	0.3	0.3	0.3	deg FWHM
Slow Axis Div.	Θ_parallel	10	10	14	14	deg FWHM
Mechanical						
Weight		0.5	0.5	0.5	0.5	g
Operating Temp.**		-40 to 60	-40 to 60	-40 to 60	-40 to 60	°C
Storage Temp.		-40 to 80	-40 to 80	-40 to 80	-40 to 80	°C

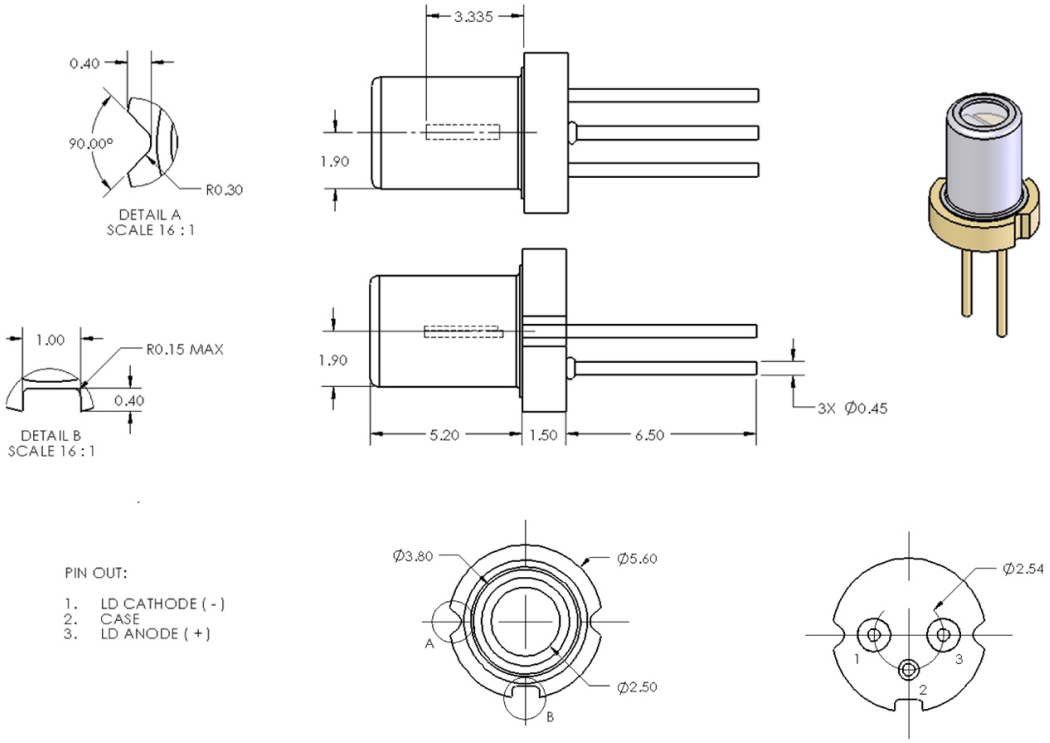
Specified values are rated at a constant heat sink temperature of 20°C.

**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.

All TO56 products are capped. Capped TO56 specifications assume heatsinking only on flat surface where pins extend.

*Pulsed Power measured at 150ns pulse width and 0.1% duty cycle.



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