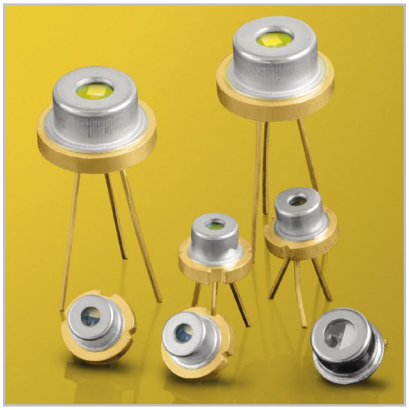
LASER COMPONENTS®

High Intensity Pulsed Laser Diodes
1550 HI-Series

Features

- High intensity output
- Low divergence
- Excellent temperature stability
- Hermetic and custom designed package
- High reliability



Applications

- Eye safe range finding
- Surveying equipment
- "Friend or Foe" identification
- Laser radar
- Security barrier

Optical Characteristics at t_{RT}= 21°C, I_{FM}

	Min	Typ	Max	Units
Wavelength of peak radiant intensity λ	1540	1555	1580	nm
Spectral bandwidth Δλ at 50% intensity points at i_{FM}		25		nm
Wavelength temperature coefficient		0.6		nm/°C
Beam spread (50% peak intensity) Parallel to junction plane ∥ Perpendicular to junction plane ⊥		 12 25		 Degrees Degrees

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Single Chips

Typical single chip characteristics at t_{RT}= 21 °C, t_w= 100 ns, P_{rr}= 1 kHz

Parameter	HI155G1S04X	HI155G1S07X
P_O at I_{FM}, (typ.)	10 W	16 W
Emitting area	100 x 1 µm	180 x 1 µm
Max peak forward current I_{FM}*	30 A	46 A
I_{TH} typ	0.6 A	0.9 A
Forward voltage (V_F) at I_{FM}	9 V	8 V

* I_{FM} is the maximum peak current under any drive condition and is applicable to devices operated for short and intermittent duration such as in hand held range finders.

For applications that demand continuous use at maximum duty factor, we recommended I_{FM} at 50% to ensure longevity. High temperature operation will reduce peak power and MTTF so for optimal performance under high stress conditions it is important to provide an adequate heat sink.

Absolute Maximum Ratings

Maximum ratings	Limiting values
Peak reverse voltage	6 V
Pulse duration	150 ns
Duty factor	0.1%
Temperature - Storage - Operating	 -55 °C to + 100 °C -45 °C to + 85 °C
Lead soldering - 5 seconds max at	 200 °C

Note:
High Temperature operation will reduce peak power and MTTF so for optimal performance it is important to provide an adequate heat sink.

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Figure 1:
Peak Power vs. Current for 100 µm (21 °C, F/0)

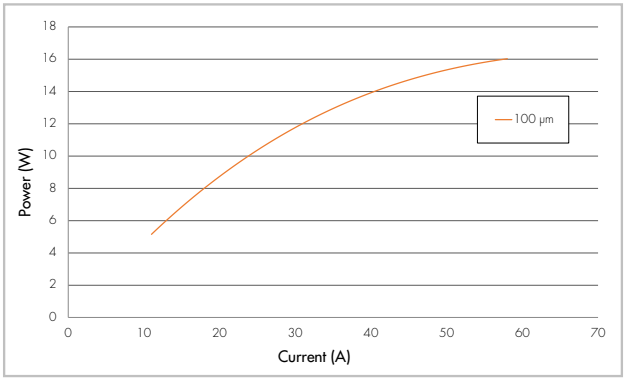

Figure 2:
Peak Power vs. Current for 180 µm (21°C, F/0)

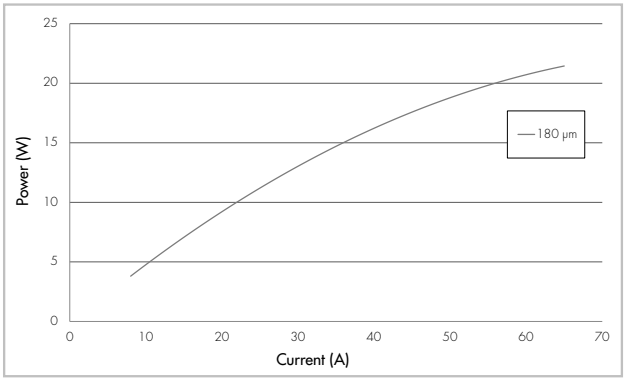

Figure 3:
Relative Radiant Intensity (%) vs. F-Number

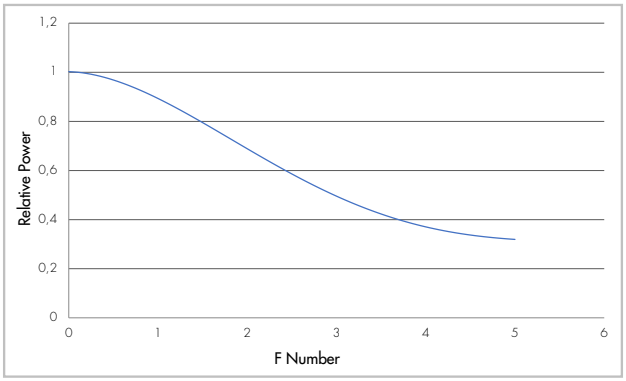

Figure 4:
Typical Peak Optical Output Power vs. Temperature

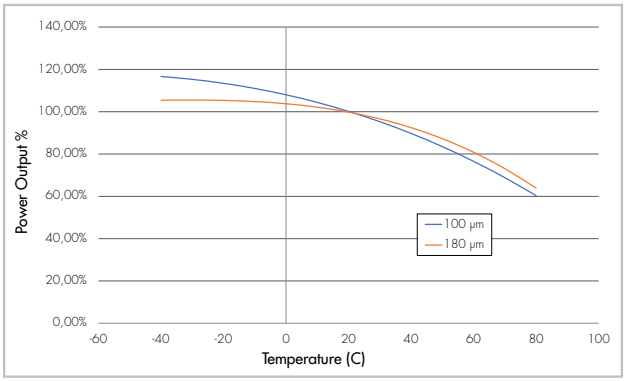

Figure 5:
Typical Static Forward Voltage (V_F) vs. Current

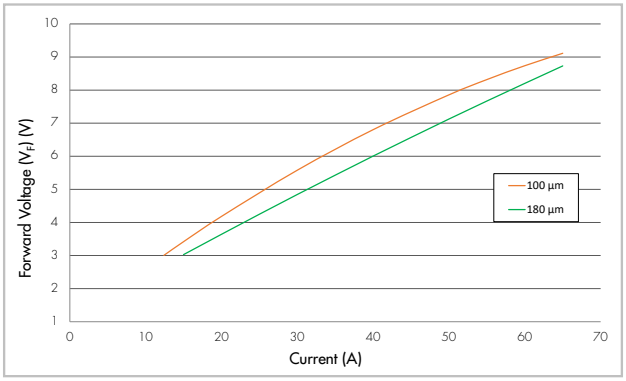

Figure 6:
Typical Wavelength vs. Temperature

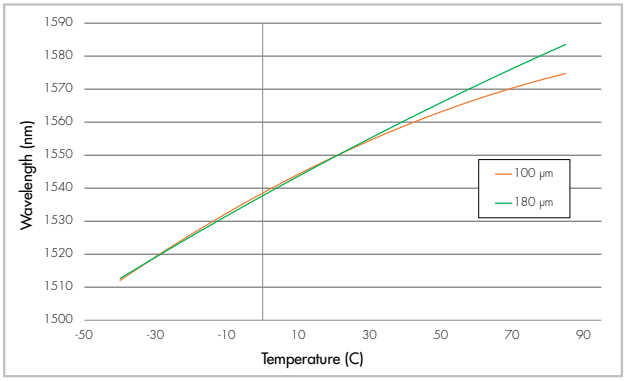

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Figure 7:
Typical Beam Divergence Parallel and Perpendicular to the Junction Plane

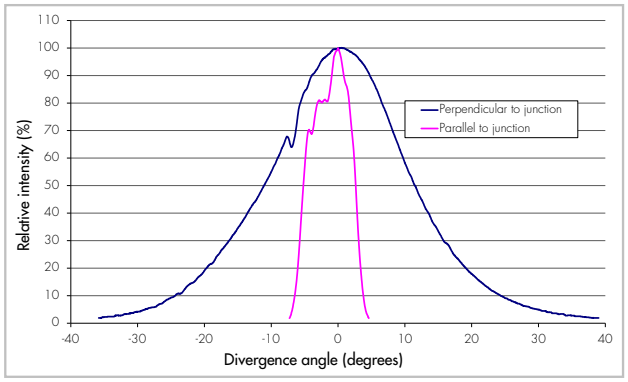
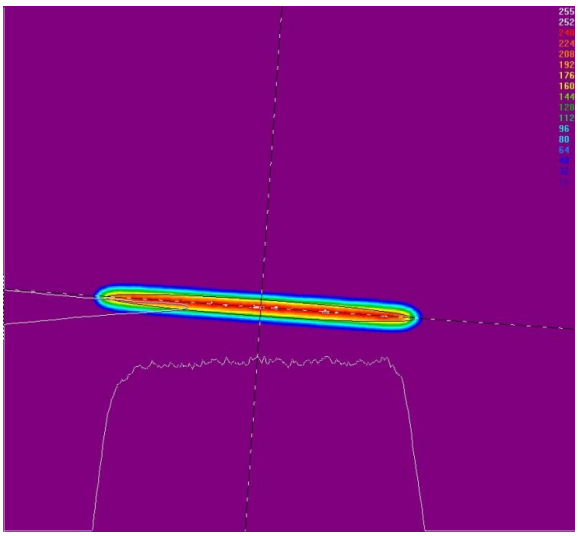


Figure 8:
Typical Near Field Emission



Product Number Designations

H	I	1	5	5	G	X	S			

Diode Configuration	Emitting Source Size	Package Style
1S = single stack	04 = 100 x 1 µm	S = TO-18
2S = double stack*	07 = 180 x 1 µm	U = 5.6 mm CD
3S = triple stack*		Y = ceramic
4S = quad stack*		

* Available upon demand

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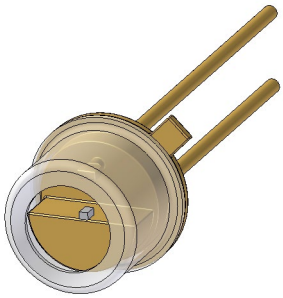
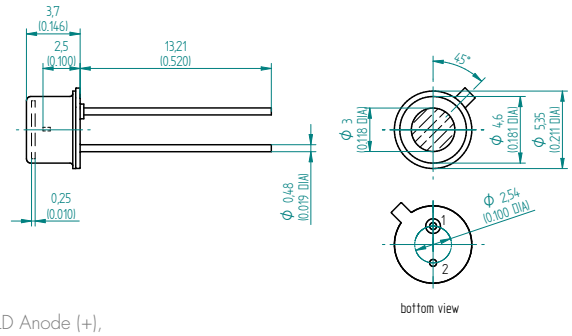
Package Drawings

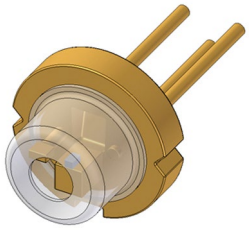
Package S TO-18

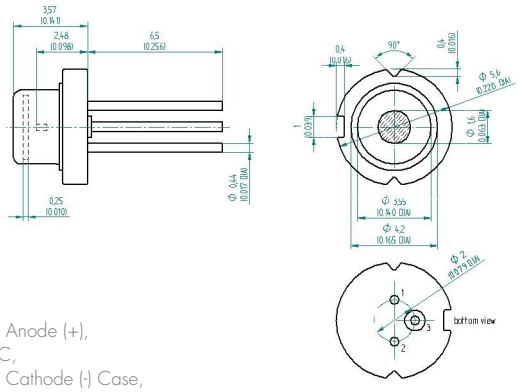




Package S: Pin Out:
1. LD Anode (+),
2. LD Cathode (-) Case,
Inductance 5.2 nH

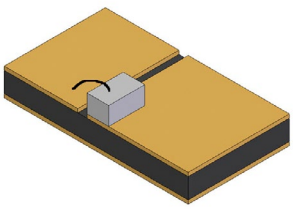
Package U 5.6 mm CD



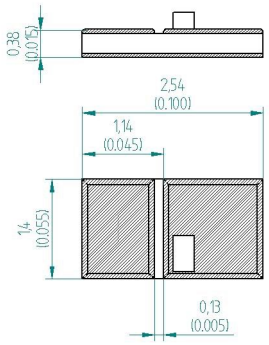


Package U: Pin Out:
1. LD Anode (+),
2. NC,
3. LD Cathode (-) Case,
Inductance 5.0 nH

Package Y ceramic carrier



1. Anode left
2. Cathode right



Package Y: Pin Out:
1. LD Anode (+),
2. LD Cathode (-) Case,
Inductance 1.6 nH

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Product Changes

LASER COMPONENTS reserves the right to make changes to the product(s) or information contained herein without notice. No liability is assumed as a result of their use or application.

Ordering Information

Products can be ordered directly from LASER COMPONENTS or its representatives. For a complete listing of representatives, visit our website at www.lasercomponents.com

Custom designed products are available on request.

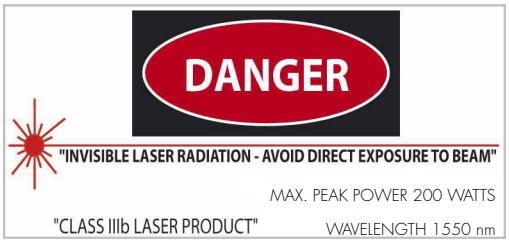
Laser Safety

Personal Hazard:

Depending on the mode of operation, these devices emit highly concentrated non visible infrared light which can be hazardous to the human eye. Products which incorporate these devices have to follow the safety precautions given in IEC 60825-1 "Safety of laser products".

Handling Precautions:

Products are subject to the risks normally associated with sensitive electronic devices including static discharge, transients, and overload.



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