

High Power Pulsed Laser Diodes 1550-Series

Features

- High intensity output
- Low divergence
- Excellent temperature stability
- Hermetic and custom designed package
- 25 degree beam divergence

Applications

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



Generic Characteristics at $t_{RT} = 21\text{ °C}$

	Min	Typ	Max	Units
Wavelength of peak radiant intensity λ	1535	1550	1565	nm
Spectral bandwidth $\Delta\lambda$ at 50% intensity pints		22		nm
Wavelength temperature coefficient		0.45		nm/°C
Beam spread (50% peak intensity)				
Parallel to junction plane \parallel		10		Degrees
Perpendicular to junction plane \perp				
Single element		25		Degrees

Single Chips

Single chip characteristics at $t_{RT} = 21\text{ °C}$, $t_W = 150\text{ ns}$, Duty Factor (DF) = 0.1%

Parameter	155G1S02X	155G1S04X	155G1S07X
P_O at i_{FM} (typ.)	6 W	9.5 W	15.5 W
Emitting area	50 x 1 μm	100 x 1 μm	180 x 1 μm
Peak forward current i_{FM}^*	20 A	30 A	46 A
I_{th} (typical)	0.35 A	0.55 A	0.95 A
V_F at i_F	5.5 V	6.8 V	8.2 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 MTF 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 Single element	150 ns
Duty factor	0.1%
Temperature	
- Storage	-55 °C to + 100 °C
- Operating	-45 °C to + 85 °C
Lead soldering 5 seconds max at	200 °C

Note:

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

Curves

Figure 1: Wavelength vs. Temperature

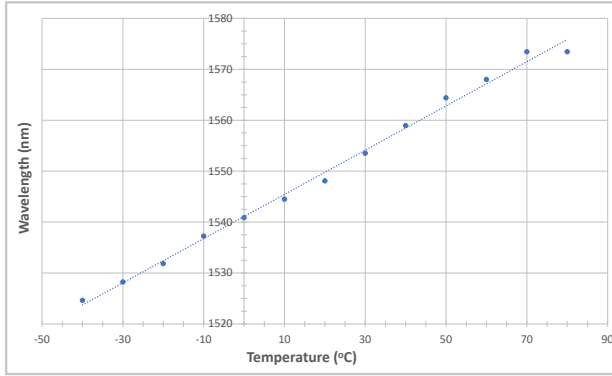


Figure 2: Optical Output Power vs. Forward Current

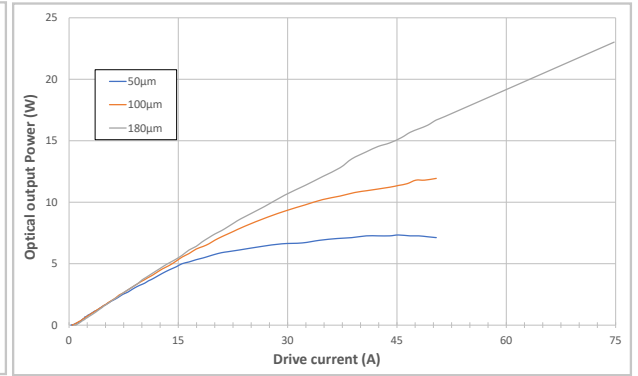


Figure 3: Static forward Voltage vs. Peak Current

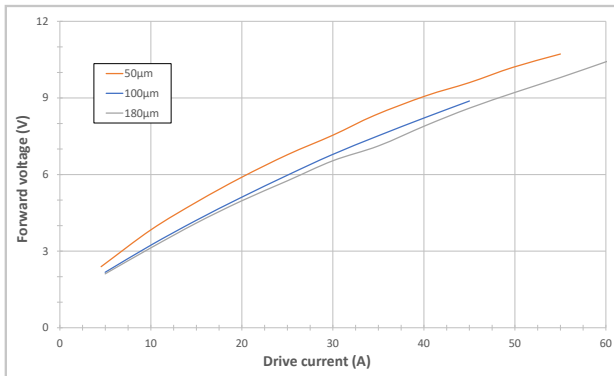


Figure 4: Peak Optical Output Power vs. Temperature

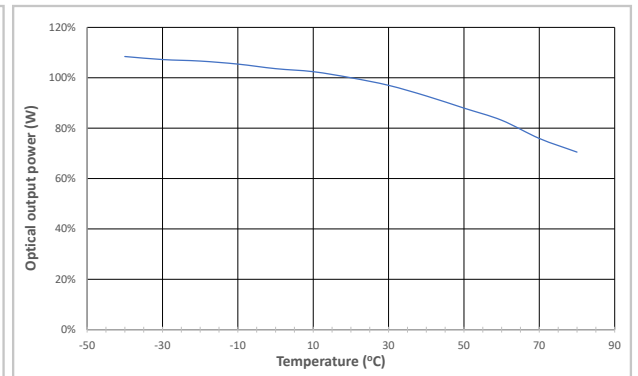


Figure 5: Beam divergence parallel and perpendicular to the junction plane

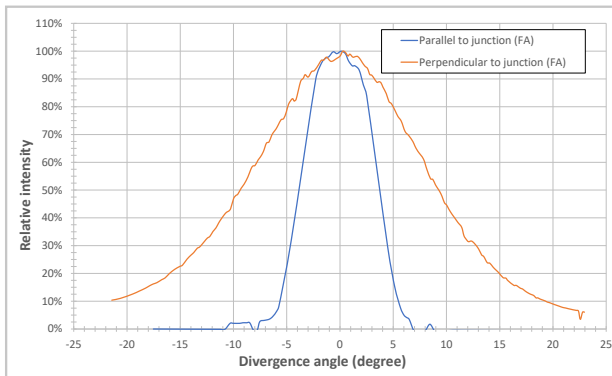
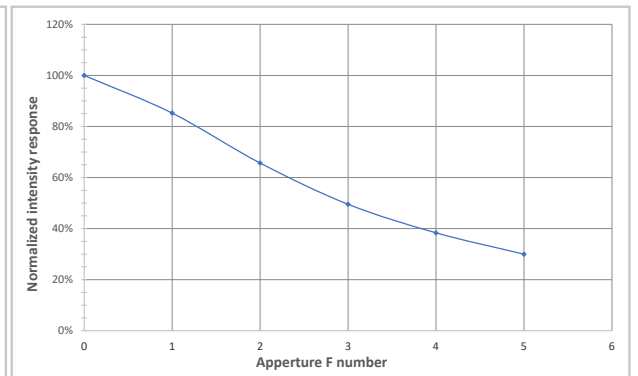
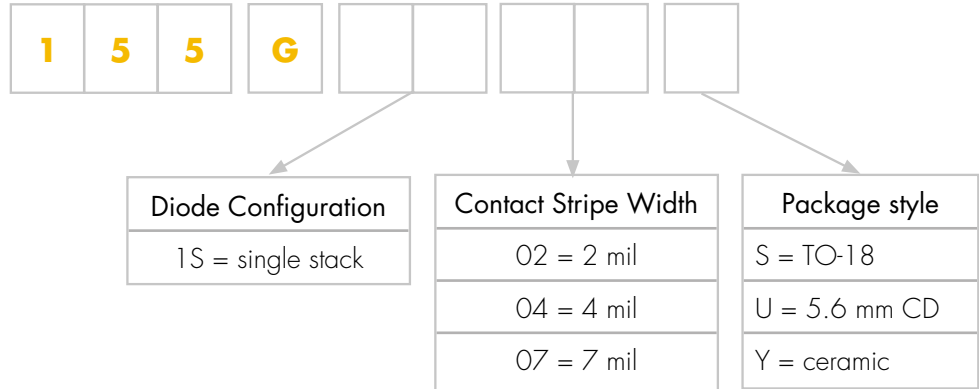


Figure 6: Variation in total Peak Power vs. Aperture Size

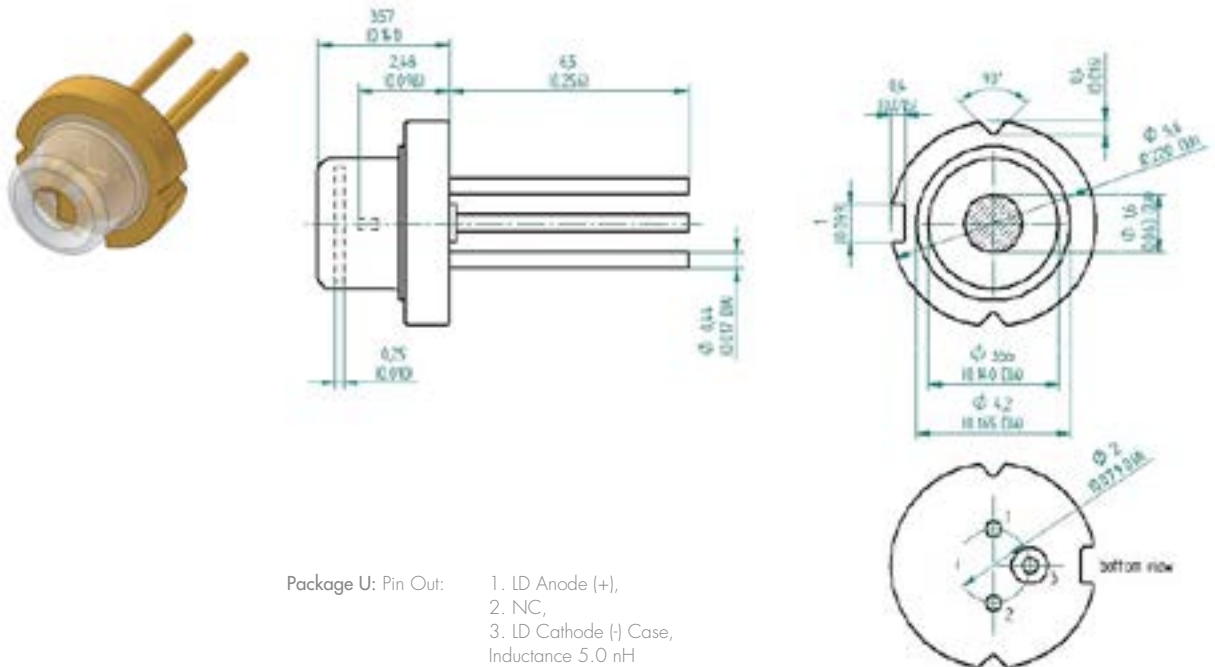


Product Number Designations

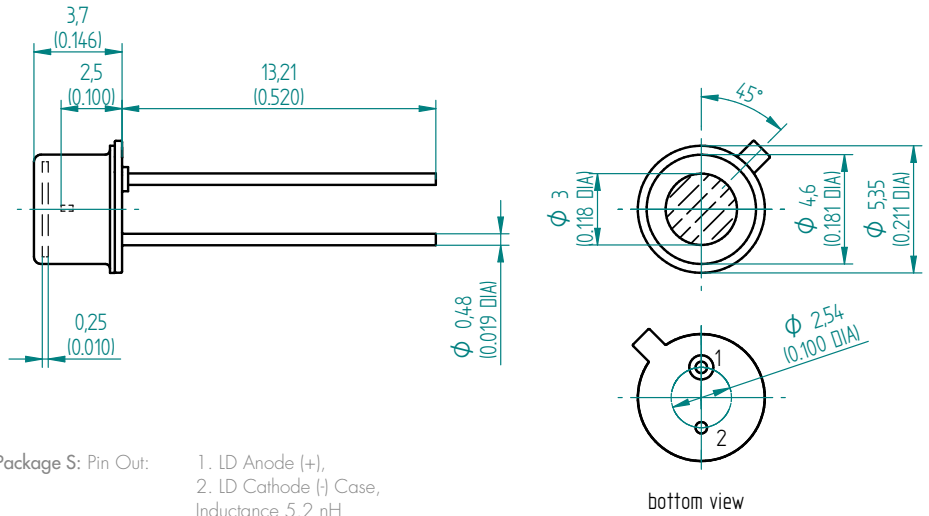


Package Drawings

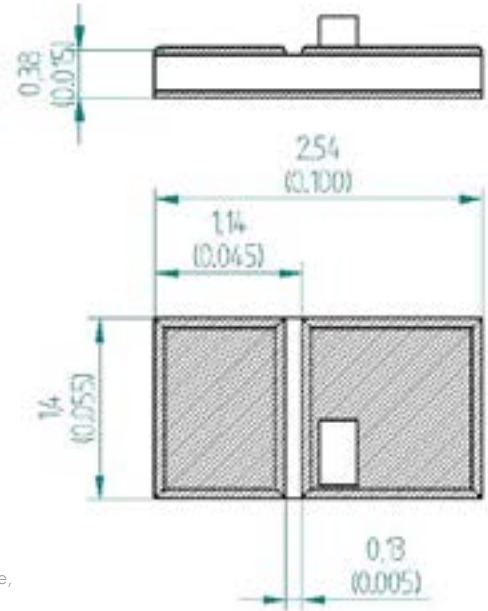
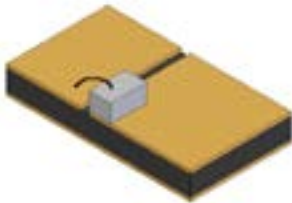
Package U 5.6 mm CD



Package S TO-18



Package Y ceramic carrier



Package U: Pin Out:

1. LD Anode (+),
2. LD Cathode (-) Case,

Inductance 1.6 nH

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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