

High-Power/Low-Cost Pulsed Laser Diodes 155G1SxxUA-Series

Features

- High intensity output
- Low divergence
- Excellent temperature stability
- Hermetic and custom designed package
- 25 degree beam divergence
- Hermetic 5.6 mm CD and custom design package
- Ultra-precise mechanical tolerances
- Fully RoHS compliant



Applications

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

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	27	Degrees

Single Chips

Typical single chip characteristics at $t_{RT} = 21\text{ °C}$, $t_W = 100\text{ ns}$, $P_r = 1\text{ kHz}$

Parameter	155G1S02UA	155G1S04UA	155G1S07UA
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
Forward voltage V_F at I_{FM}	8 V	9 V	13 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 Single element	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.

Curves

Figure 1:
Typical Wavelength vs. Temperature

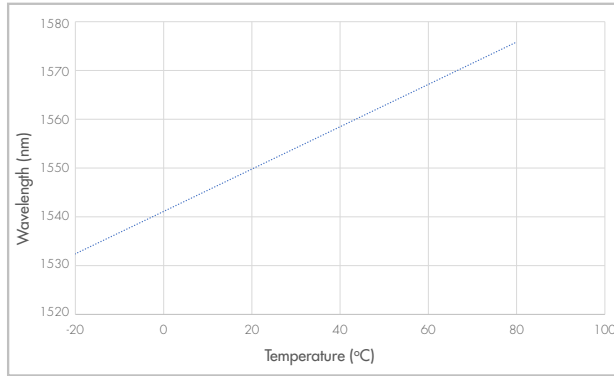


Figure 2:
Typical Optical Output Power vs. Forward Current

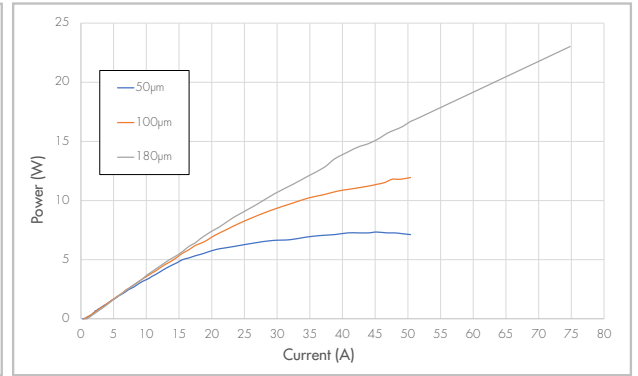


Figure 3:
Typical Peak Optical Output Power vs. Temperature

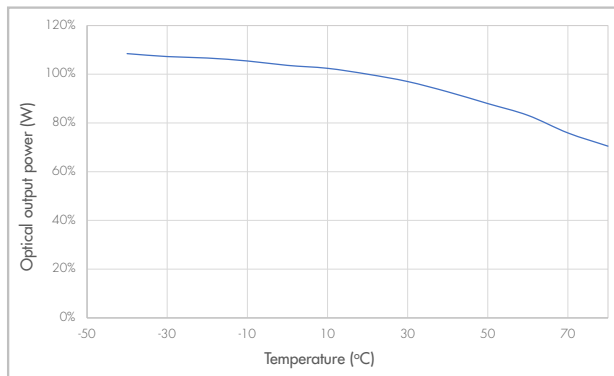


Figure 4:
Typical Beam Divergence Parallel and Perpendicular to the Junction Plane

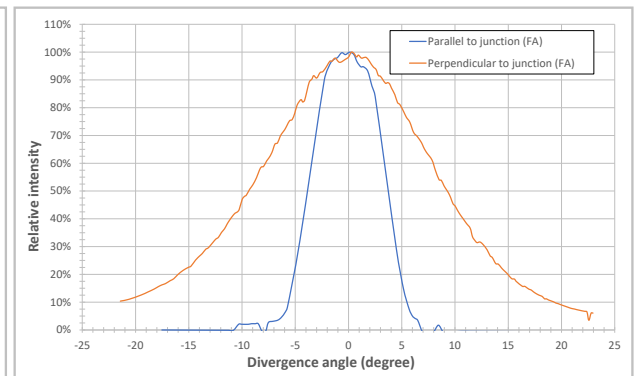


Figure 5:
Relative Radiant Intensity (%) vs. F-Number

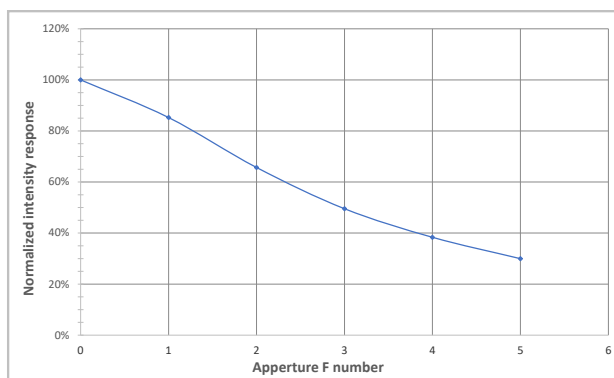
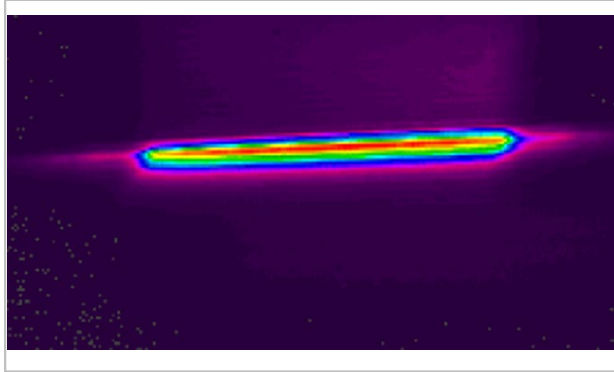
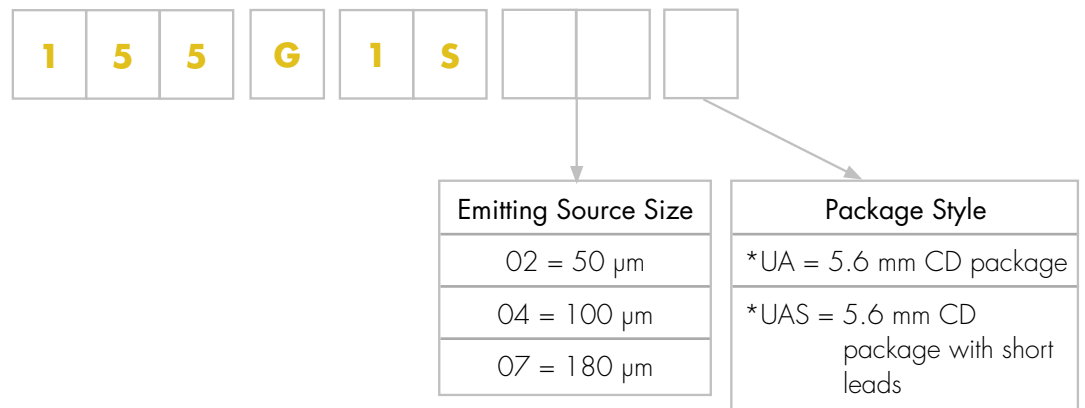


Figure 6:
Near Field

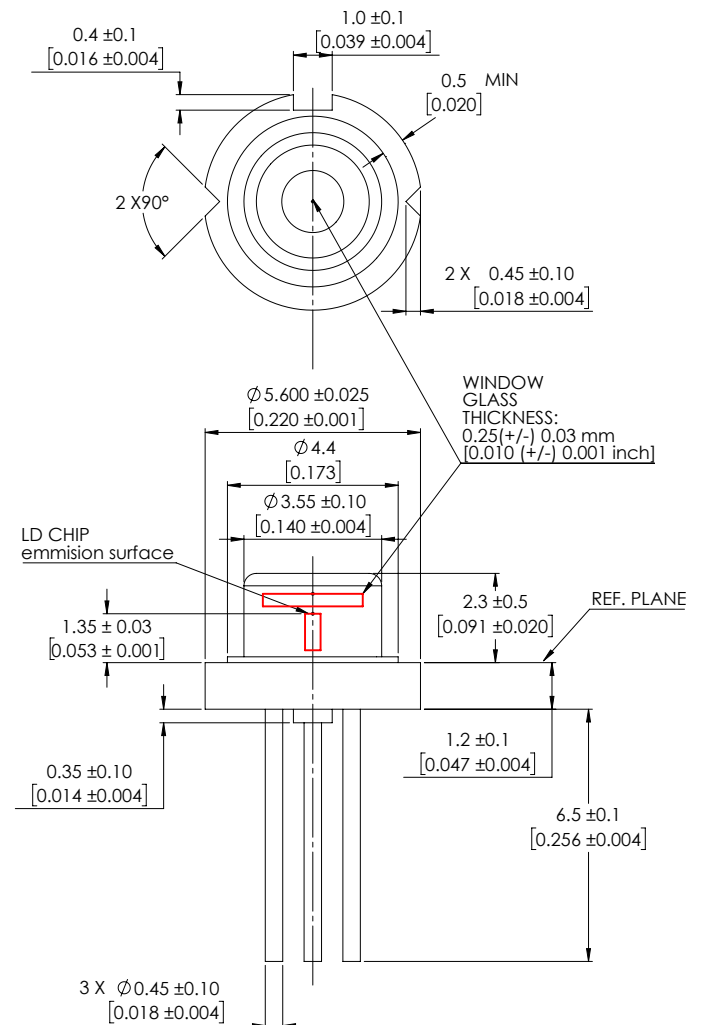
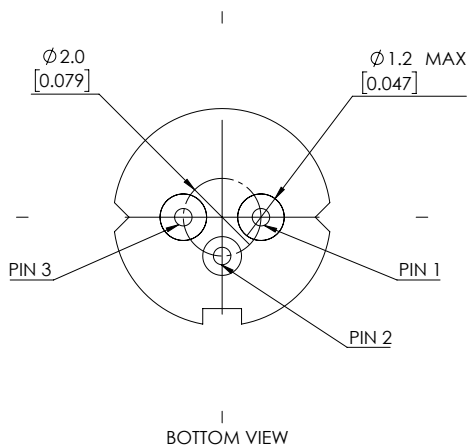
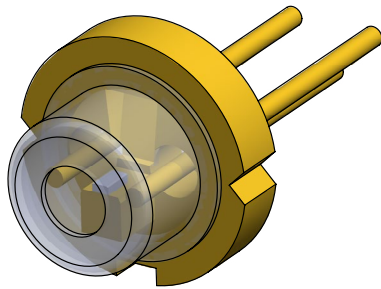


Product Number Designations



Package Drawings

Package UA 5.6 mm CD



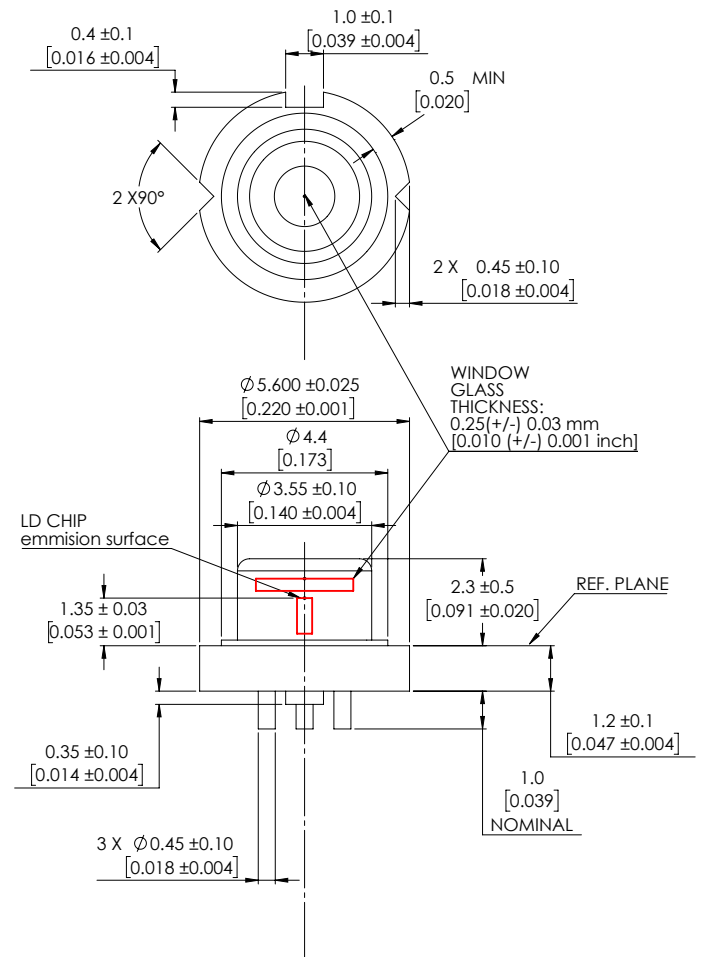
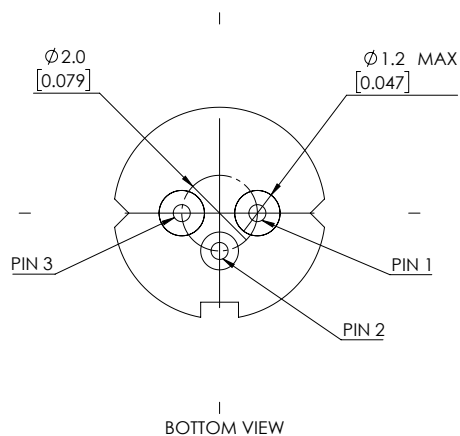
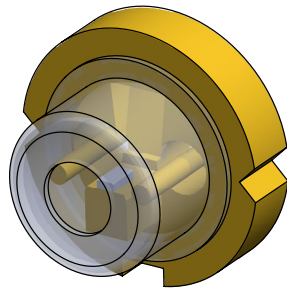
Units: mm [inch]

Package UA: Pin out:

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

Inductance 5.0 nH

Package UAS 5.6 mm CD with shortened leads



Units: mm [inch]

Package UAS: Pin out:

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

Inductance 5.0 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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