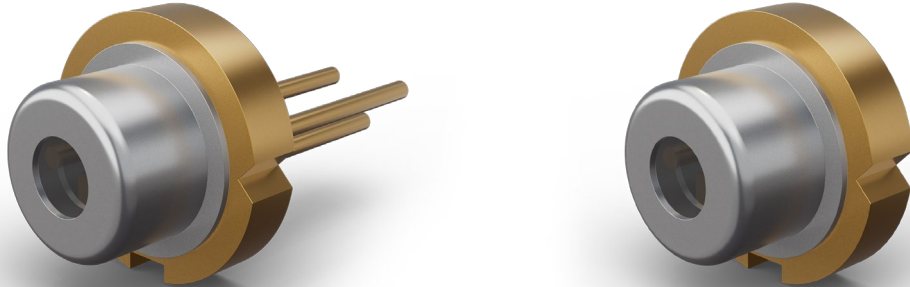


HIGH-POWER/LOW-COST PULSED LASER DIODES

155G1SXXUA-SERIES

LASER DIODES



DESCRIPTION

The 1550UA Series (Product Number: 155G1SxxUA) is engineered to provide an exceptionally high-quality and affordable high-volume 1550 nm Pulsed Laser Diode (PLD). Featuring a robust TO-56 metal housing with hermetic sealing, these PLDs are designed for durability.

Produced in large volumes, the 1550UA Series is cost-competitive with other models while delivering high-durability, excelling in overdrive capabilities, optimal thermal stability, and precise chip alignment.

FEATURES

- / High intensity output
- / Low divergence
- / Excellent temperature stability
- / Hermetic and custom designed package
- / 25 degree beam divergence
- / Hermetic 5.6mm 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

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SPECIFICATIONS

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

	Min	Typ	Max
Wavelength of peak radiant intensity λ [nm]	1535	1550	1565
Spectral bandwidth $\Delta\lambda$ at 50 % intensity pints [nm]		22	
Wavelength temperature coefficient [nm/ $^{\circ}\text{C}$]		0.45	
Beam spread (50 % peak intensity) [$^{\circ}$]			
Parallel to junction plane \parallel		10	
Perpendicular to junction plane \perp single element		25	27

Single Chips

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

Parameter	155G1S02UA	155G1S04UA	155G1S07UA
P_o at i_{FM} (typ.) [W]	6	9.5	15.5
Emitting area [μm]	50 x 1	100 x 1	180 x 1
Peak forward current i_{FM}^* [A]	20	30	46
I_{th} (typical) [A]	0.35	0.55	0.95
Forward voltage V_F at I_{FM} [V]	6.2	7.5	8.2

* 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 [V]	6
Pulse duration single element [ns]	150
Duty factor [%]	0.1
Storage temperature [$^{\circ}\text{C}$]	-55 to +100
Operating temperature [$^{\circ}\text{C}$]	-45 to +85
Lead soldering 5 seconds max. at [$^{\circ}\text{C}$]	200

Note

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

LASER DIODES

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

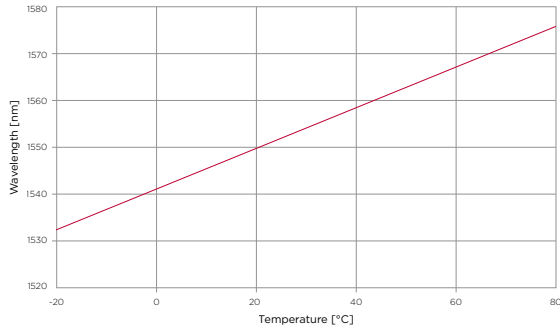


Figure 1: Typical Wavelength vs. Temperature

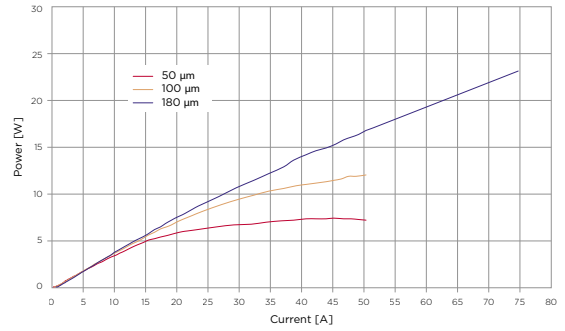


Figure 2: Typical Optical Output Power vs. Forward Current

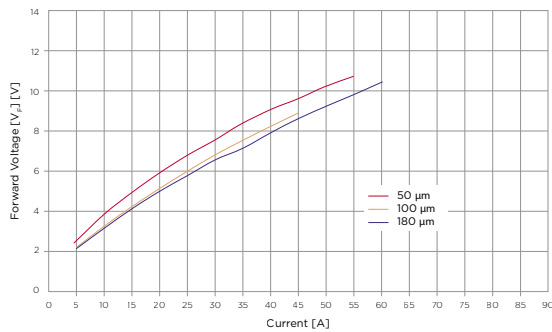


Figure 3: Typical Static Forward Voltage (V_F) vs. Peak Current

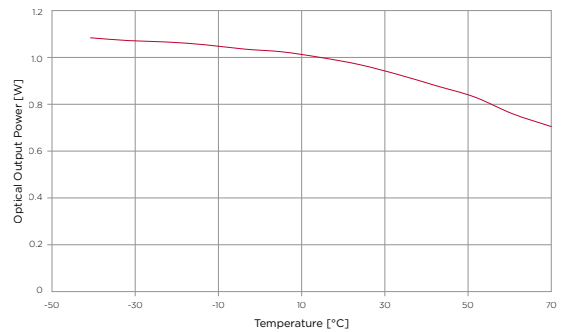


Figure 4: Typical Peak Optical Output Power vs. Temperature

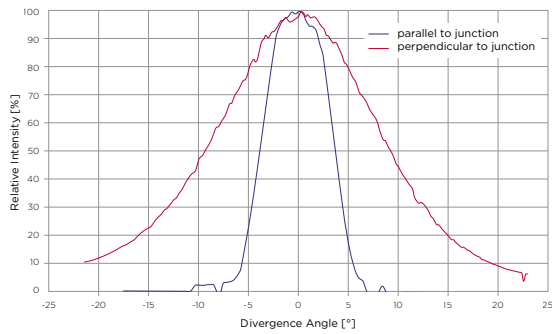


Figure 5: Typical Beam Divergence Parallel and Perpendicular to the Junction Plane

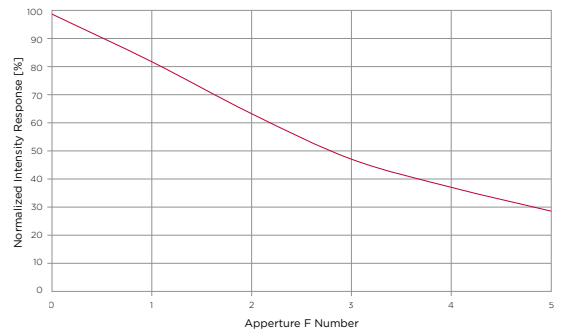


Figure 6: Relative Radiant Intensity (%) vs. F-Number

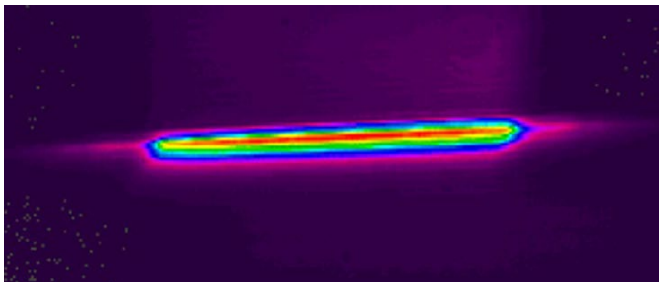


Figure 7: Near Field

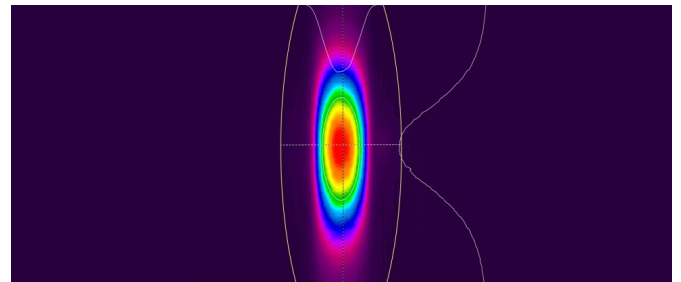


Figure 8: Far Field

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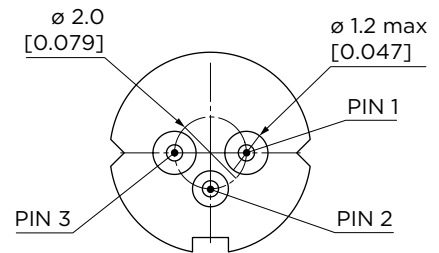
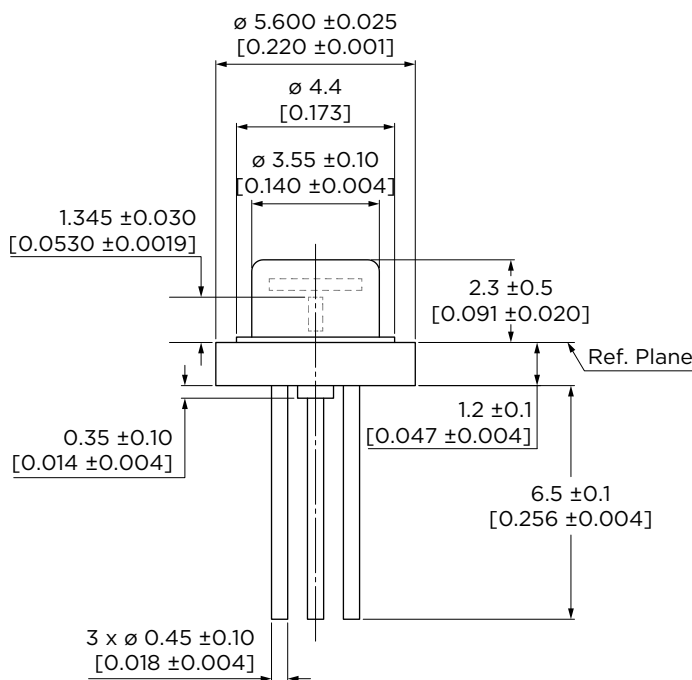
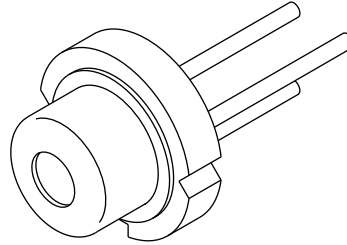
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High-Power/Low-Cost Pulsed Laser Diodes 155G1SxxUA-Series

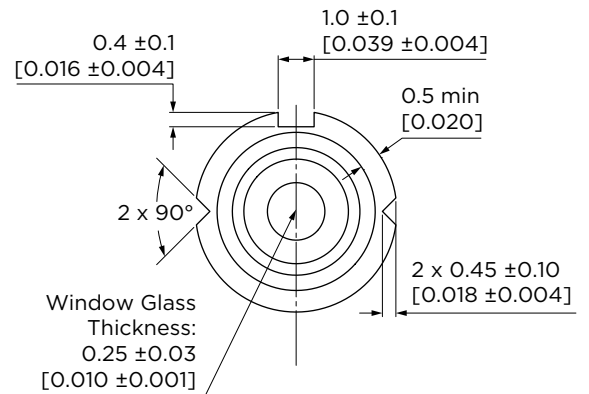


TECHNICAL DRAWING

Package UA 5.6 mm CD



REAR VIEW



Package UA 5.6 mm CD

Pin out:

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

Case Inductance 5.0 nH

Units: mm [inch]

Dimensions are in millimeters - [inches] and are for reference only.

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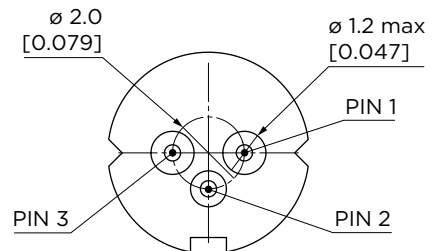
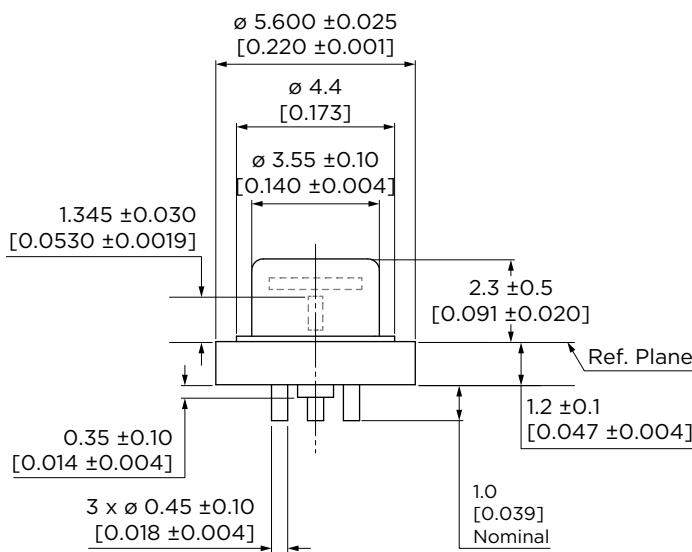
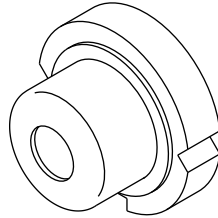
LASER DIODES

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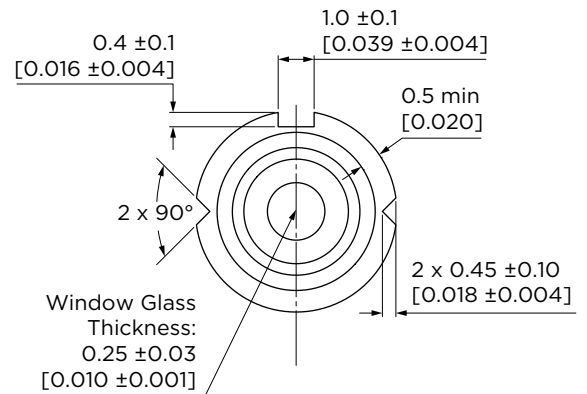


TECHNICAL DRAWING

Package UAS 5.6 mm CD with shortened leads



REAR VIEW



Package UAS 5.6 mm CD

Pin out:

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

Case Inductance 5.0 nH

Units: mm [inch]

Dimensions are in millimeters - [inches] and are for reference only.

LASER DIODES

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



ORDERING CODE

	Emitting Source Size [μm]	Package Style
155G1S	X	X
	02 04 07	UA 5.6 mm CD package UAS 5.6 mm CD package with short leads

Example: 155G1S02UA

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.



DANGER

**INVISIBLE LASER RADIATION -
AVOID DIRECT EXPOSURE TO BEAM**

Class IIIb LASER PRODUCT
Max. Peak Power: 200 Watts
Wavelength: 1550 nm

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