Laser Diodes

High End / Low Cost Pulsed Laser Diodes 905D1SxxUA-Series

Features

- Single and Multi-junction devices up to 75 W
- Hermetic 5.6 mm CD package
- Excellent temperature stability
- Ultra precise mechanical tolerances
- Fully RoHS compliant

Applications

- Range finding
- Surveying equipment
- Weapons simulation
- Laser radar
- Obstacle detection
- Medical
- Automotive

Optical Characteristics at t_{RT}= 21°C

	Min	Typ	Max	Units
Wavelength of peak radiant intensity λ	895	905	915	nm
Spectral bandwidth Δλ at 50% intensity points		8		nm
Wavelength temperature coefficient		0.27		nm/°C
Beam spread (50% peak intensity)				
Parallel to junction plane ∥		12		Degrees
Perpendicular to junction plane ⊥		20		Degrees

Germany & Other Countries
Laser Components GmbH
Tel: +49 8142 2864 – 0
Fax: +49 8142 2864 – 11
info@lasercomponents.com
www.lasercomponents.com

USA
Laser Components USA, Inc.
Tel: +1 603 821 – 7040
Fax: +1 603 821 – 7041
info@laser-components.com
www.laser-components.com

United Kingdom
Laser Components (UK) Ltd.
Tel: +44 1245 491 499
Fax: +44 1245 491 801
info@lasercomponents.co.uk
www.lasercomponents.co.uk

France
Laser Components S.A.S.
Tel: +33 1 39 59 52 25
Fax: +33 1 39 59 53 50
info@lasercomponents.fr
www.lasercomponents.fr

High End / Low Cost Pulsed Laser Diodes
905D1SxxUA-Series

Optical Characteristics at t_{RT}= 21°C, t_w= 150 ns, P_{rr}= 6.66 kHz

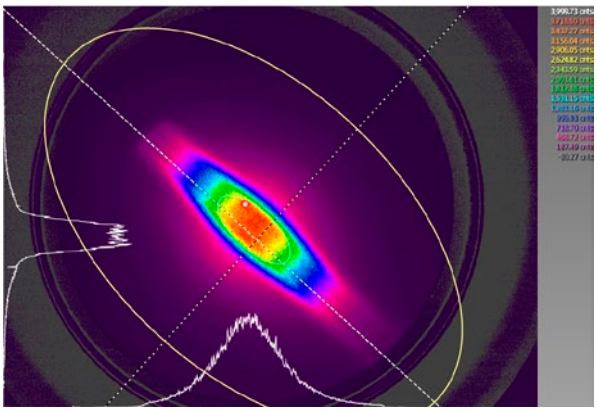
Parameter	905D1S03UA	905D1S09UA	905D1S3J03UA	905D1S3J06UA*	905D1S3J09UA	Units
P_o at I_{FM}, (typ)	6.5	19	25	50	75	W
Emitting area	75 x 1	230 x 1	85 x 10	160 x 10	235 x 10	µm
Max. peak current I_{FM} at 150 ns t_W	7	22	11	22	35	A
Threshold I_{th}	250	750	500	650	800	mA
Forward voltage at I_{FM}	3	4.7	9.5	11.75	12.8	V

* only available on request!

Absolute Maximum Ratings

Maximum ratings	Limiting values
Peak reverse voltage	6 V
Pulse duration	1 µs
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

Typical far field scan of triple junction lasers



Germany & Other Countries
Laser Components GmbH
Tel: +49 8142 2864 – 0
Fax: +49 8142 2864 – 11
info@lasercomponents.com
www.lasercomponents.com

USA
Laser Components USA, Inc.
Tel: +1 603 821 – 7040
Fax: +1 603 821 – 7041
info@laser-components.com
www.laser-components.com

United Kingdom
Laser Components (UK) Ltd.
Tel: +44 1245 491 499
Fax: +44 1245 491 801
info@lasercomponents.co.uk
www.lasercomponents.co.uk

France
Laser Components S.A.S.
Tel: +33 1 39 59 52 25
Fax: +33 1 39 59 53 50
info@lasercomponents.fr
www.lasercomponents.fr

Figure 1a: Optical Output Power vs. Forward Current (single junction units)

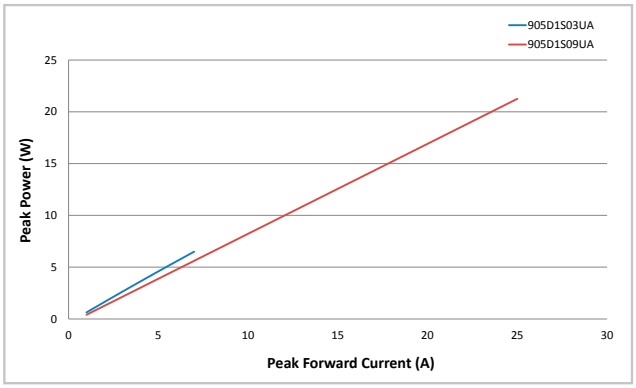


Figure 1b: Optical Output Power vs. Forward Current (triple junction units)

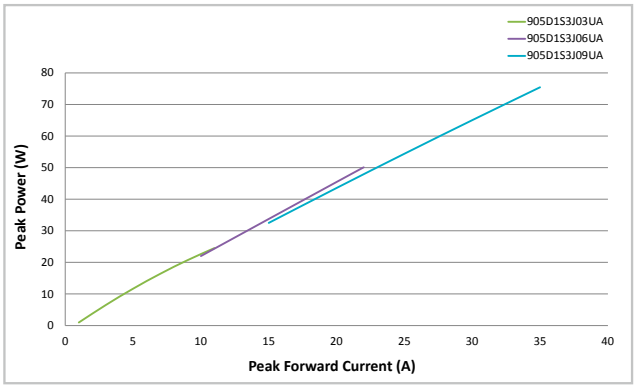


Figure 2: Optical Output Power vs. Temperature

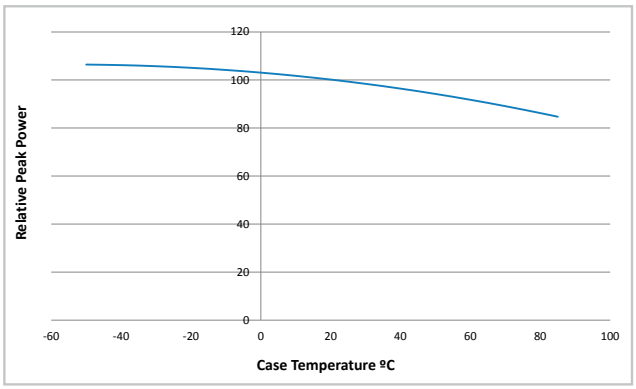


Figure 3: Optical Output Power vs. F#

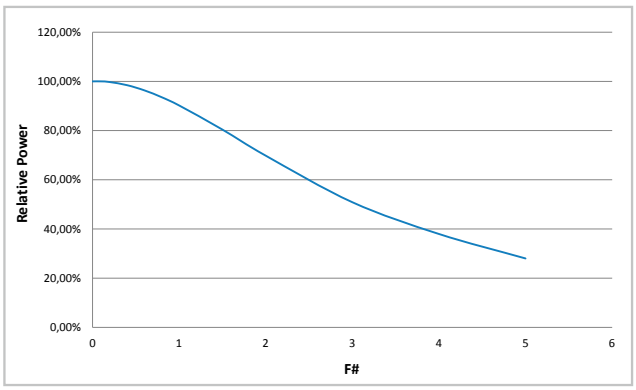


Figure 4: Wavelength vs. Temperature

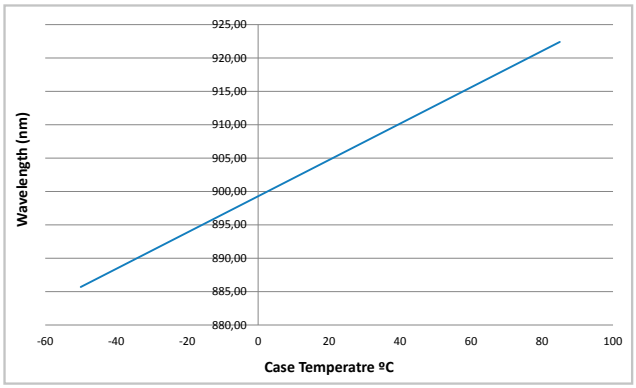
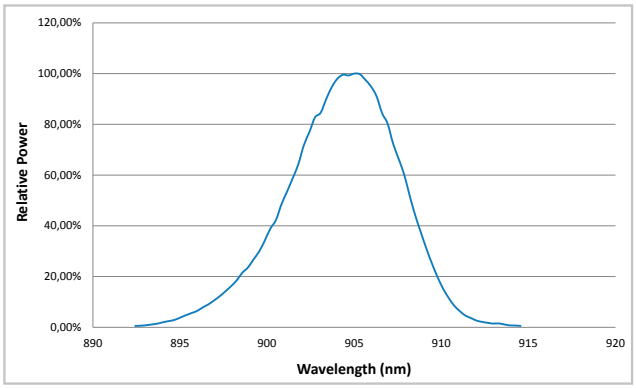


Figure 5: Typical Spectral Plot



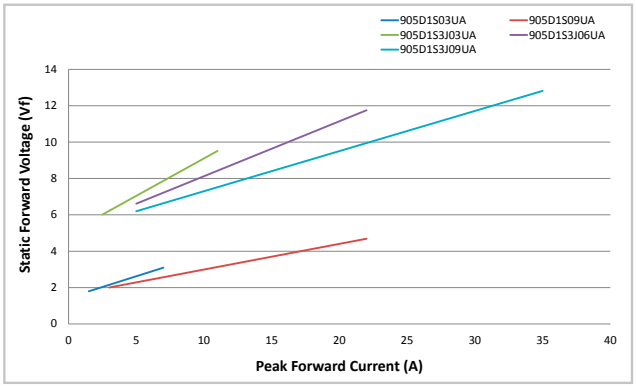
Germany & Other Countries
Laser Components GmbH
Tel: +49 8142 2864 – 0
Fax: +49 8142 2864 – 11
info@lasercomponents.com
www.lasercomponents.com

USA
Laser Components USA, Inc.
Tel: +1 603 821 – 7040
Fax: +1 603 821 – 7041
info@laser-components.com
www.laser-components.com

United Kingdom
Laser Components (UK) Ltd.
Tel: +44 1245 491 499
Fax: +44 1245 491 801
info@lasercomponents.co.uk
www.lasercomponents.co.uk

France
Laser Components S.A.S.
Tel: +33 1 39 59 52 25
Fax: +33 1 39 59 53 50
info@lasercomponents.fr
www.lasercomponents.fr

Figure 6: Static Forward Voltage vs. Current



Product Number Designations (Single element devices)

9	0	5	D	1	S			U	A

Contact Stripe Width
03 = 75 µm
09 = 225 µm

Product Number Designations (Multi junction devices)

9	0	5	D	1	S	3	J	X	X	U	A

Contact Stripe Width
03 = 85 µm
06 = 160 µm
09 = 235 µm

Germany & Other Countries
Laser Components GmbH
Tel: +49 8142 2864 – 0
Fax: +49 8142 2864 – 11
info@lasercomponents.com
www.lasercomponents.com

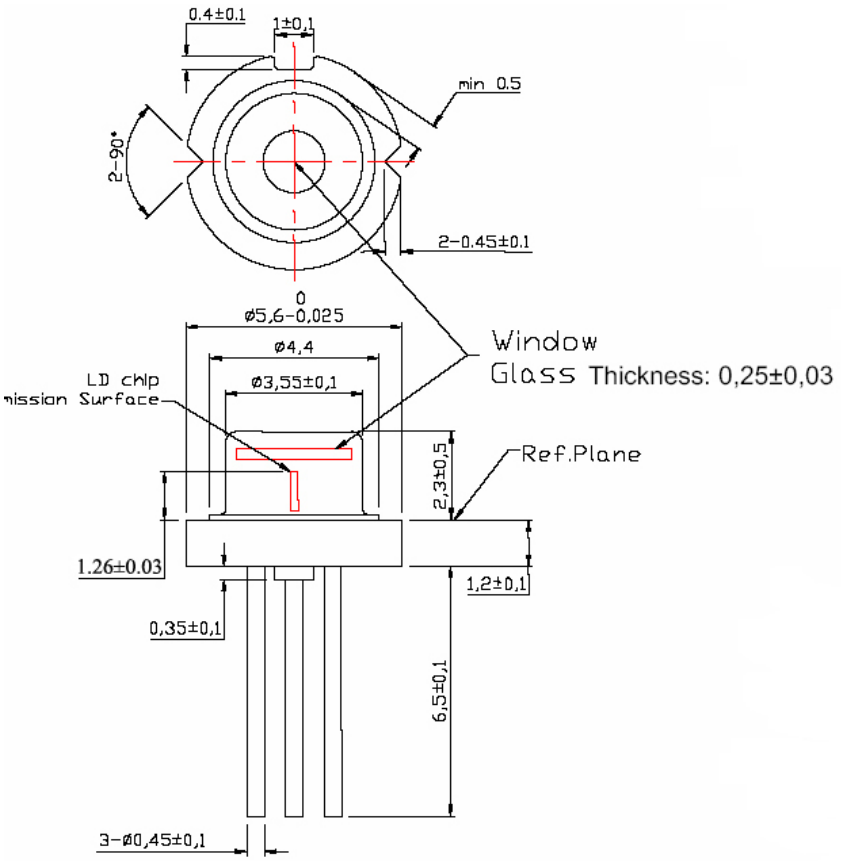
USA
Laser Components USA, Inc.
Tel: +1 603 821 – 7040
Fax: +1 603 821 – 7041
info@laser-components.com
www.laser-components.com

United Kingdom
Laser Components (UK) Ltd.
Tel: +44 1245 491 499
Fax: +44 1245 491 801
info@lasercomponents.co.uk
www.lasercomponents.co.uk

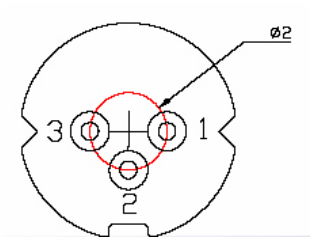
France
Laser Components S.A.S.
Tel: +33 1 39 59 52 25
Fax: +33 1 39 59 53 50
info@lasercomponents.fr
www.lasercomponents.fr

Package Drawings

Package UA 5.6 mm CD



Bottom view:



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

Germany & Other Countries
Laser Components GmbH
Tel: +49 8142 2864 – 0
Fax: +49 8142 2864 – 11
info@lasercomponents.com
www.lasercomponents.com

USA
Laser Components USA, Inc.
Tel: +1 603 821 – 7040
Fax: +1 603 821 – 7041
info@laser-components.com
www.laser-components.com

United Kingdom
Laser Components (UK) Ltd.
Tel: +44 1245 491 499
Fax: +44 1245 491 801
info@lasercomponents.co.uk
www.lasercomponents.co.uk

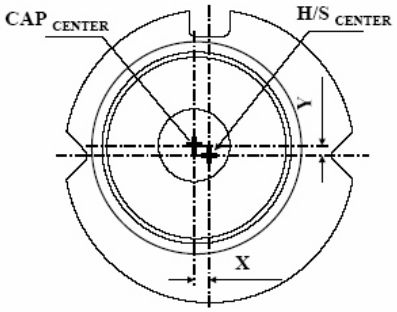
France
Laser Components S.A.S.
Tel: +33 1 39 59 52 25
Fax: +33 1 39 59 53 50
info@lasercomponents.fr
www.lasercomponents.fr

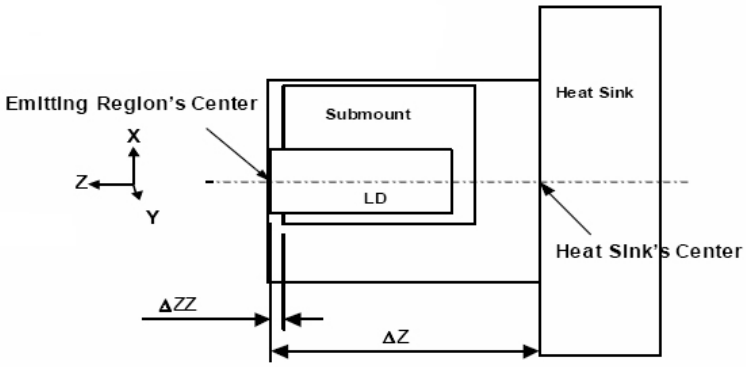
Die Placement Accuracy

Measuring Point		Tolerance
LD	ΔX	0 ± 50 µm
	ΔY	0 ± 50 µm
	ΔZ	1260 ± 30 µm
	Δθ	0 ± 2°

Die Placement Accuracy

Measuring Point		Tolerance
Cap	X	0 ± 100 µm
	Y	0 ± 100 µm





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.

Germany & Other Countries
Laser Components GmbH
Tel: +49 8142 2864 – 0
Fax: +49 8142 2864 – 11
info@lasercomponents.com
www.lasercomponents.com

USA
Laser Components USA, Inc.
Tel: +1 603 821 – 7040
Fax: +1 603 821 – 7041
info@laser-components.com
www.laser-components.com

United Kingdom
Laser Components (UK) Ltd.
Tel: +44 1245 491 499
Fax: +44 1245 491 801
info@lasercomponents.co.uk
www.lasercomponents.co.uk

France
Laser Components S.A.S.
Tel: +33 1 39 59 52 25
Fax: +33 1 39 59 53 50
info@lasercomponents.fr
www.lasercomponents.fr

12/13 / V9 / HW / lcc/905d1sxxua.indd