

## High Power Pulsed Laser Diodes 905D3J09-Series

### Features

- Multi-Junction devices up to 200 Watts
- Proven InGaAs / GaAs high reliability structure
- High power large-optical-cavity (LOC) structure for a narrow far-field
- Excellent temperature stability
- Hermetic and custom designed package

### Applications

- Range finding
- Surveying equipment
- Weapons simulation
- Laser radar
- Ceilometer
- Optical trigger
- Medical



### Optical Characteristics at $t_{RT} = 21^{\circ}\text{C}$ , $I_{FM}$

	Min	Typ	Max	Units
Wavelength of peak radiant intensity $\lambda_m$	895	905	915	nm
Spectral bandwidth $\Delta\lambda$ at 50% intensity points		8		nm
Wavelength temperature coefficient		0.27		nm/ $^{\circ}\text{C}$
Beam spread (50% peak intensity)				
Parallel to junction plane $\parallel$		12		Degrees
Perpendicular to junction plane $\perp$		20		Degrees

**Optical Characteristics at  $t_{RT} = 21\text{ °C}$ ,  $t_w = 100\text{ ns}$ ,  $P_{rr} = 3.33\text{ kHz}$ ,  $I_F = 30\text{ A}$** 

Parameter	905D1S3J09X	905D2S3J09X	905D3S3J09X
Number of element	1 x 3	2 x 3	3 x 3
$P_O$ at $I_F$ (min)	70 W	140 W	210 W
Emitting area	235 x 10 $\mu\text{m}$	235 x 200 $\mu\text{m}$	235 x 400 $\mu\text{m}$
$I_{TH}$ typ	800 mA	800 mA	800 mA

**Absolute Maximum Ratings**

Maximum ratings	Limiting values
Peak reverse voltage	6 V
Max. peak forward current $I_{FM}$	35 A
Pulse duration	
- Single element	150 ns
- Stacks	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

Figure 1:  
Optical output power vs. forward current

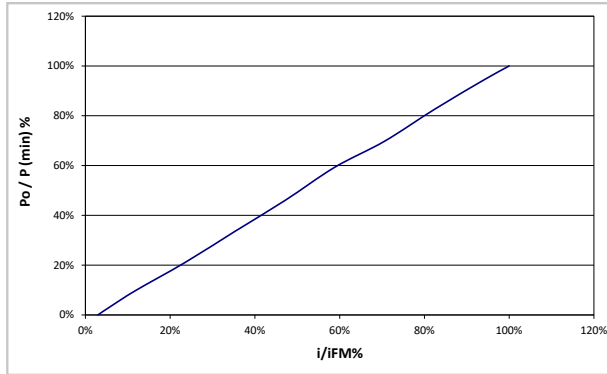


Figure 2:  
Optical output power vs. temperature

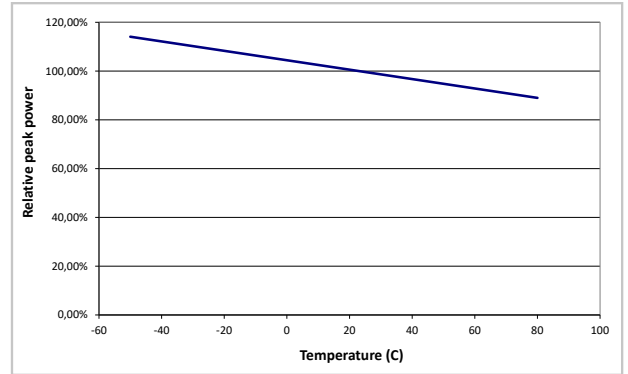


Figure 3:  
Wavelength vs. temperature

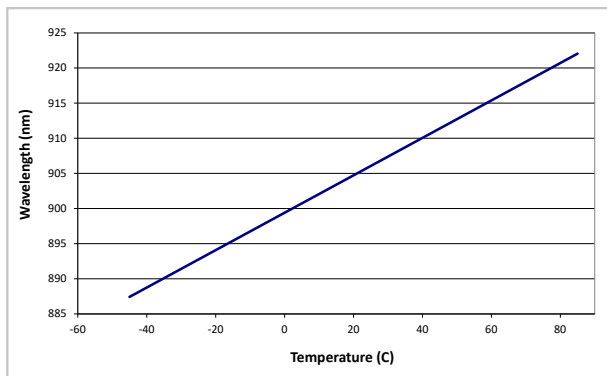


Figure 4:  
Spectral intensity distribution

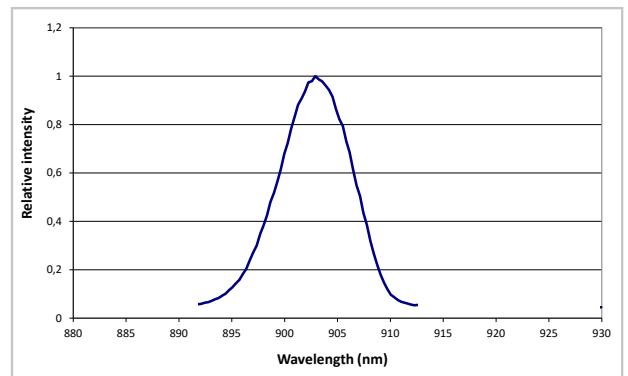
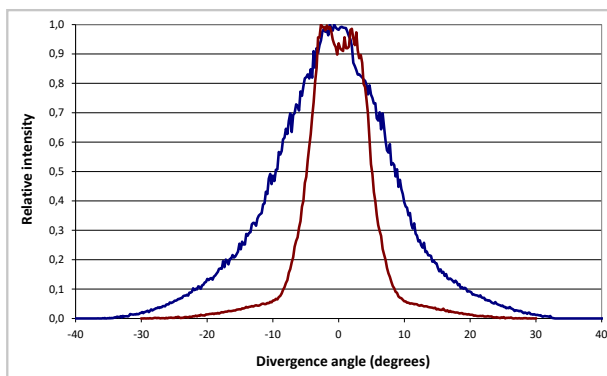
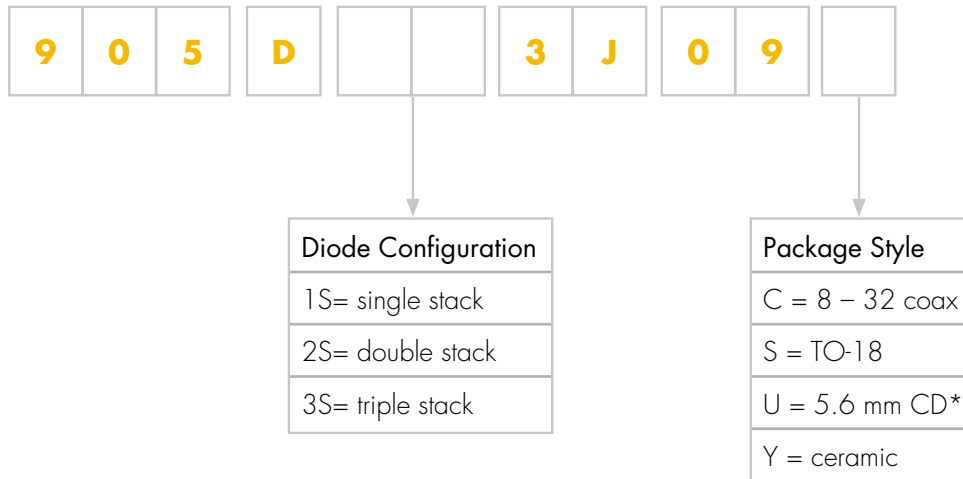


Figure 5:  
Far field emission parallel and perpendicular to junction plane



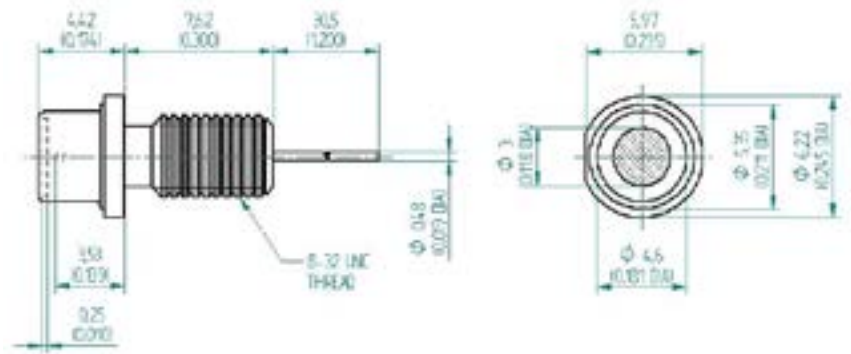
## Product Number Designations



\* "U package" is only available for 905D1S3J09 and 905D2S3J09

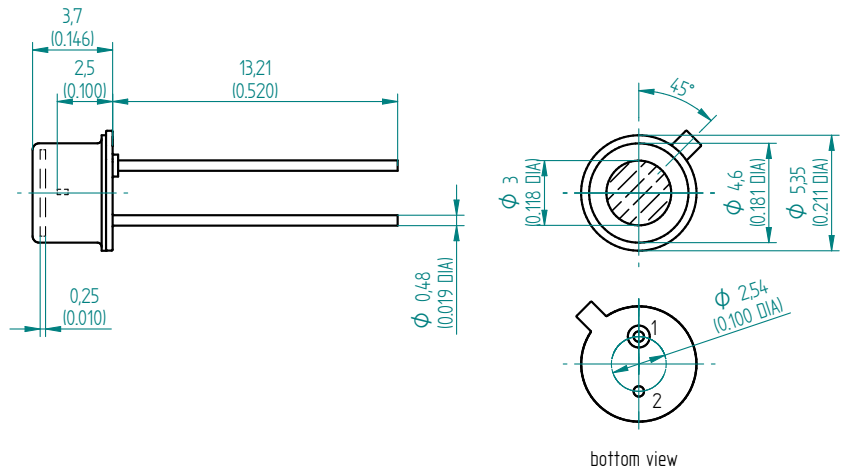
## Package Drawings

### Package C 8 - 32 coax



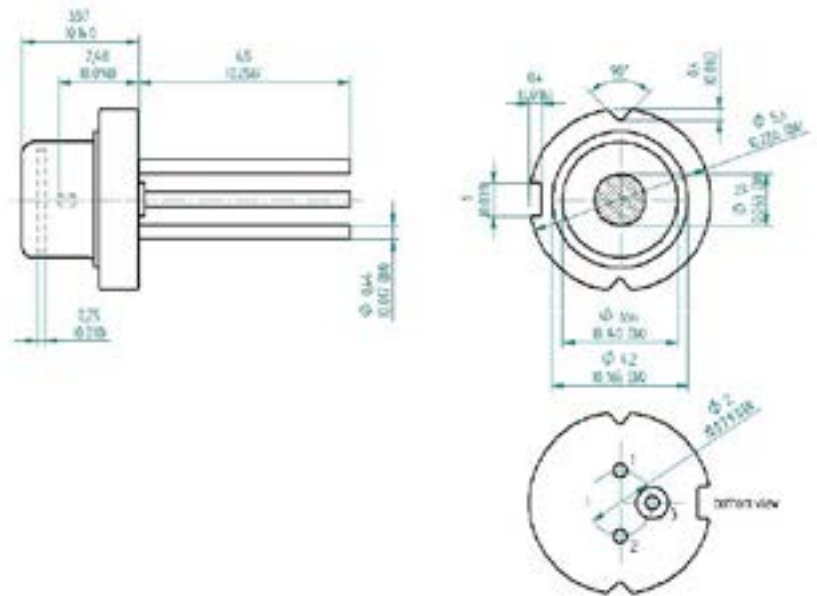
Package C: Pin Out: Case (-), Pin (+), Inductance 12 nH

### Package S TO-18



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

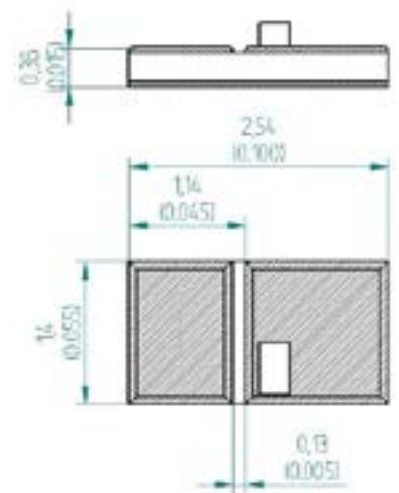
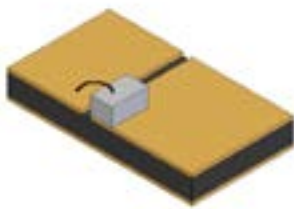
Package U 5.6 mm CD \*



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

\* only available for 905D1S3J09U and 905D2S3J09U

Package Y ceramic carrier



Package Y: 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](http://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 Germany GmbH  
Tel: +49 8142 2864 - 0  
Fax: +49 8142 2864 - 11  
[info@lasercomponents.com](mailto:info@lasercomponents.com)  
[www.lasercomponents.com](http://www.lasercomponents.com)

### France

Laser Components S.A.S.  
Tel: +33 1 39 59 52 25  
Fax: +33 1 39 59 53 50  
[info@lasercomponents.fr](mailto:info@lasercomponents.fr)  
[www.lasercomponents.fr](http://www.lasercomponents.fr)

### United Kingdom

Laser Components (UK) Ltd.  
Tel: +44 1245 491 499  
Fax: +44 1245 491 801  
[info@lasercomponents.co.uk](mailto:info@lasercomponents.co.uk)  
[www.lasercomponents.co.uk](http://www.lasercomponents.co.uk)

### Nordic Countries

Laser Components Nordic AB  
Tel: +46 31 703 71 73  
Fax: +46 31 703 71 01  
[info@lasercomponents.se](mailto:info@lasercomponents.se)  
[www.lasercomponents.se](http://www.lasercomponents.se)

### USA

Laser Components USA, Inc.  
Tel: +1 603 821 - 7040  
Fax: +1 603 821 - 7041  
[info@laser-components.com](mailto:info@laser-components.com)  
[www.laser-components.com](http://www.laser-components.com)