

QuickSwitch® Pulsed Laser Diode QS-905-Series

Description

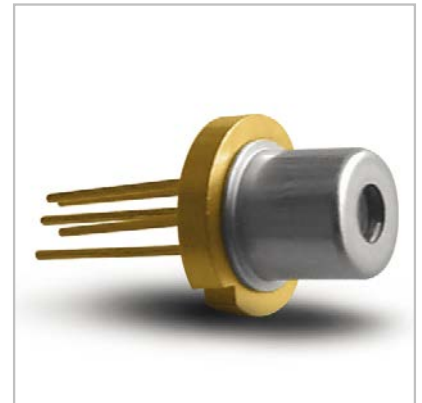
Ultra compact module containing a high current switch, charge storage capacitor and pulsed laser diode inside a small package. The high current loop is all internal to the package which provides EMI shielding when the switch is active. The package has an independent ground pin from the signal and supply returns.

Features

- TO-56 package (5 pins)
- 905 nm triple junction laser diode, 3 mil or 9 mil stripe
- FWHM 3 ns typical
- Low voltage charge storage: 50 V
- Rep. rates: Single shot to 200 KHz
- 5 V switch control
- Monitor: pin for timing
- Evaluation board available

Applications

- Range finding
- Laser radar / LIDAR
- Ceilometer
- Medical
- Optical trigger



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

	Min	Typ	Max	Units
Wavelength of peak radiant intensity λ 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

Typical Product Characteristics:

Conditions are $t_{RT} = 21^{\circ}\text{C}$, p_w (trig)= 40 ns, $P_{rr} = 200$ kHz, $HV = 50$ V

Parameter	QS 905D1S3J03U	QS 905D1S3J09U	Units
PO at HV (Typ.)	20	20	W
Pulse energy (Typ.)	60	60	nJ
Pulse width (Typ.)	3	3	ns
Emitting area	85 x 10	235 x 10	μm



Figure 1: Performance Plot

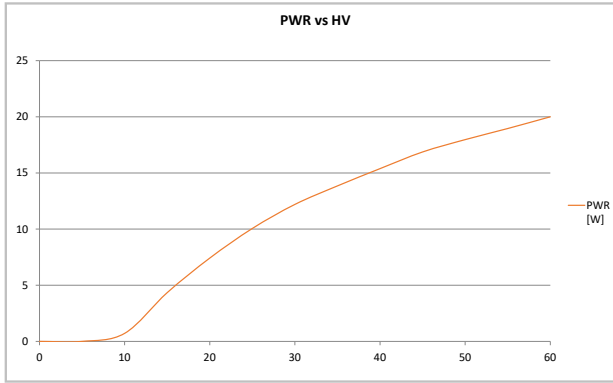


Figure 2:
Optical output power (PWR) vs. charge voltage (HV) plot

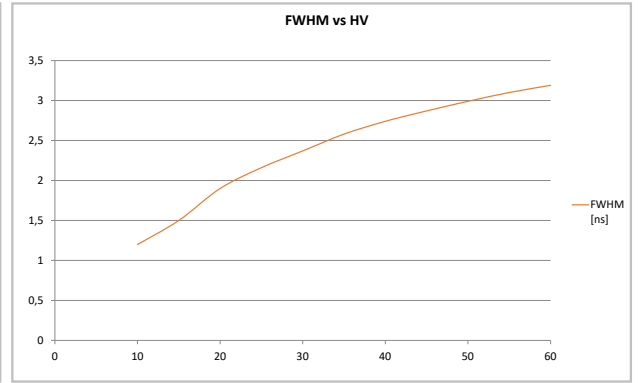
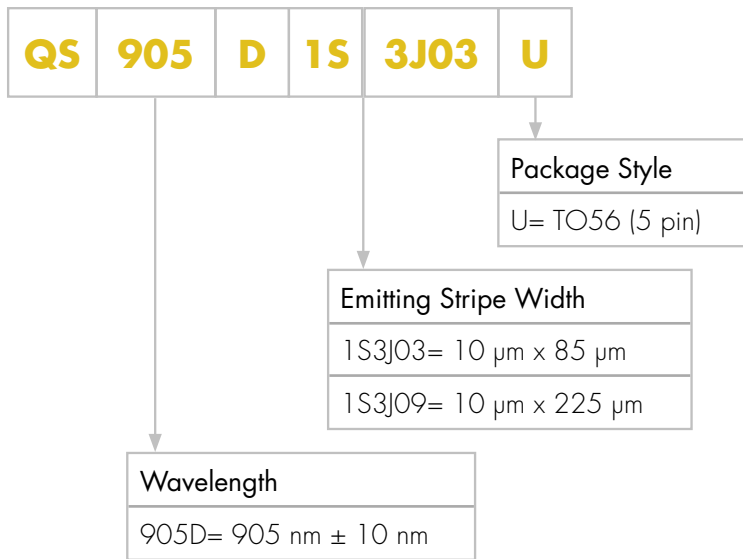
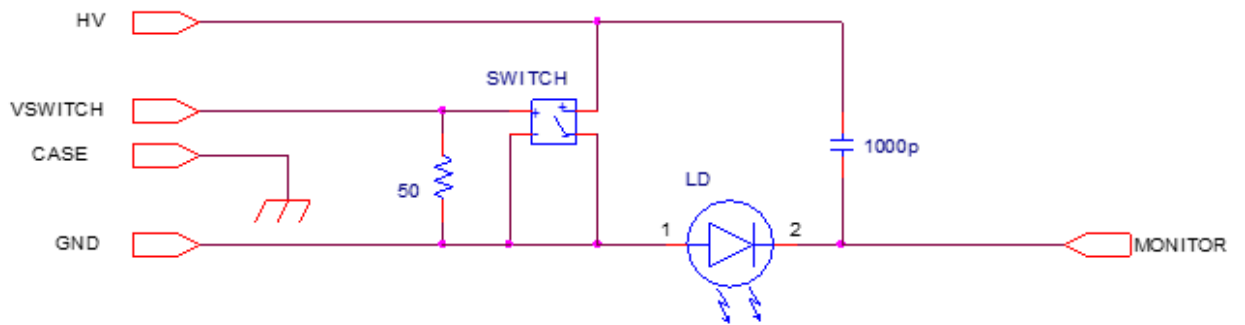


Figure 3:
Pulse width (FWHM) vs. charge voltage (HV) plot

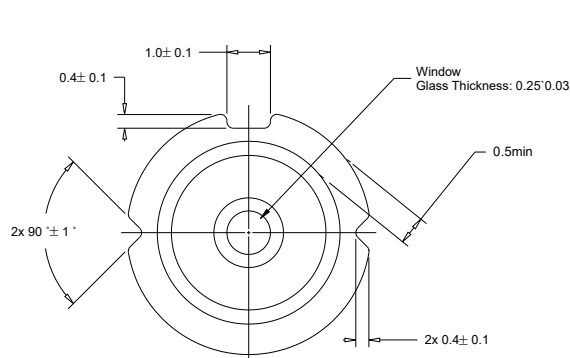
Product Number Designation



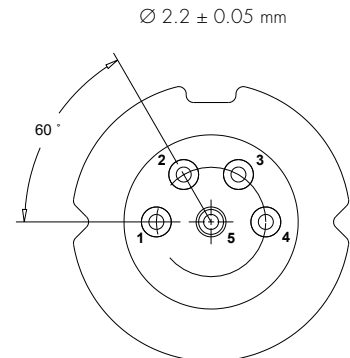
Electrical Schematic



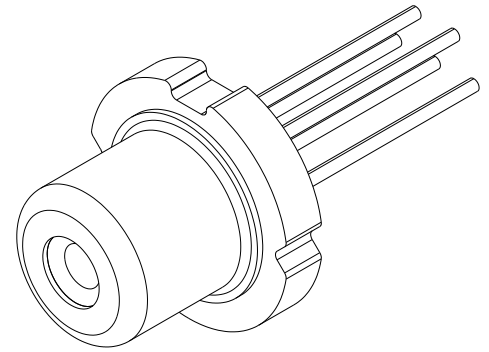
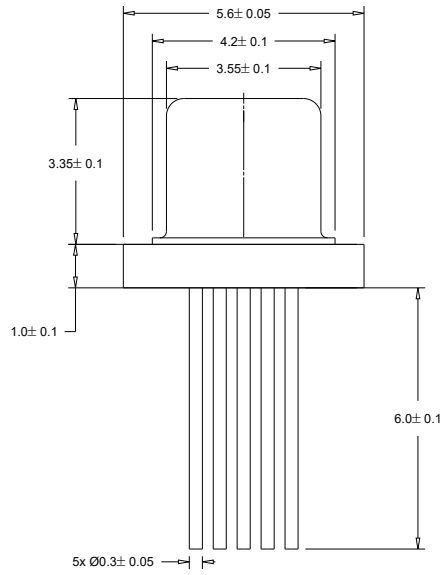
Technical Drawing



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Bottom View



PIN Configuration

Pin	Function	Comment
1	MON	Negative going pulse, $\approx 1,5 \times V_f$ (Laser)
2	HV	50 V
3	GND	Ground, GND
4	TRIG	0 V OFF, 5 V Full ON, Tr to be <3 ns to meet FWHM.
5	CASE	Connect to GND for case to acts as a shield.

Evaluation Board & Driver:

A 25mm x 51 mm evaluation board and QuickSwitch® driver is available upon request.

Product Changes

LASER COMPONENTS reserves the right to make change to the product 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