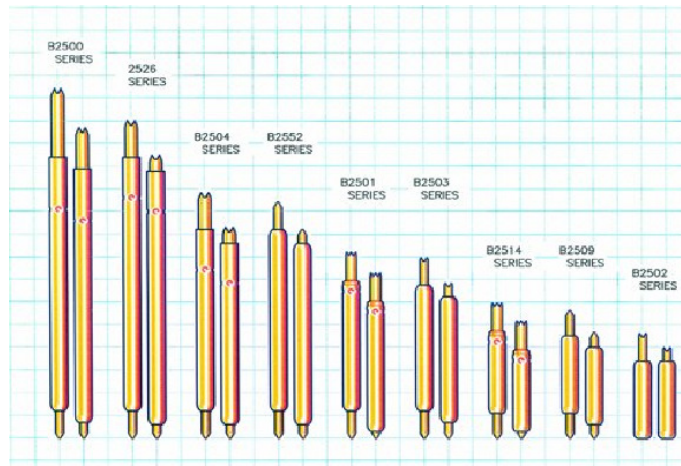


## FEATURES

- <-1db insertion loss to 13GHz
- <2:1VSWR to 12GHz
- 26-32g operating spring force
- $Z_0 = 39\Omega$
- <55ps risetime
- 60mOhms contact resistance
- 1.7 Amps max drive current



## GENERAL DESCRIPTION

The B2503 series dual plunger spring probes from Signal Integrity Inc. are designed to meet the rigorous test requirements driven by the faster risetimes and increased need for RF and wireless bandwidth in the high volume, very fine pitch test socket market. Along with speed and accuracy, these probes are designed to operate at pitches down to 0.5mm, specifically tailored to the ultra fine packaging these markets demand.

The high bandwidth of these probes provides very low insertion loss up to 13GHz. These probes will provide transparent operation on Bluetooth, 802.11b and 3G wireless protocol devices and exceed the test probe requirements for fine pitch SOC devices, ASIC devices, microwave communications devices and system interconnects.

With an impulse risetime of less than 55ps and a propagation delay of 20ps, the B2503 Series is designed for building transparent test channels or interconnect solutions that must address the signal performance needed in data communications and source synchronous memory busses up to 5Gb/s. These include Infiniband, Serial ATA, Source Synchronous DDR, Rambus<sup>tm</sup>, HyperTransport, OC-192 and Gigabit Ethernet.

<b>B Series 0.5mm (.0197 inch) Pitch</b>					
<b>Model</b>	<b>Length Operating /Initial Inches [mm]</b>	<b>DUT Plunger</b>	<b>Interface Plunger</b>	<b>Spring</b>	<b>Operating Spring Force</b>
B2503-B2	.142 [3.61] / .157 [3.99]	Conical - Gold	Conic	Stainless Steel	26 Grams
B2503-C3		Crown - Gold	Conic	Stainless Steel	26 Grams
B2503-D4		Crown - Gold	Spherical	Stainless Steel	27 Grams
B2503-H8		Spherical - Gold	Conic	Stainless Steel	26 Grams
B2503-K2	.135 [3.43] / .157 [3.99]	Conical - Gold	Conic	Music Wire	28 Grams
B2503-L3		Crown - Gold	Conic	Music Wire	28 Grams
B2503-M4	.142 [3.61] / .157 [3.99]	Crown - Gold	Conic	Music Wire	32 Grams
B2503-W5		Crown - Palladium	Spherical	Stainless Steel	26 Grams
B2503-N5		Crown - Gold	Spherical		
B2503-Q7		Ogive - Palladium	Conic		
B2503-V4			Spherical		
B2503-Y7		Crown - Palladium	Conic	Music Wire	32 Grams
B2503-Z8			Conic		
B2503-G7		.152 [3.86] / .167 [4.24]	Crown - Gold	Conic	Music Wire
B2503-J1	Crown - Palladium		Conic		

**B2503 FUNCTIONAL SPECIFICATIONS**

<b>Model</b>	<b>B2503-D4</b>			
<b>Time Domain</b>	<b>Min.</b>	<b>Typ.</b>	<b>Max.</b>	<b>Units</b>
TDT Risettime into 50Ω			55.0	ps
TDR Risettime open circuit			65.0	ps
TDR Risettime short circuit			60.0	ps
Signal Delay into 50Ω		20.0		ps
<b>Frequency Domain</b>				
Insertion Loss <-0.5db	13.0	10.0		GHz
<-1.0db		14.0		GHz
<-2.0db				GHz
VSWR <1.6:1	10.0			GHz
<2:1	12.0			GHz
<b>Equivalent Circuit Parameters</b>				
Pin Inductance		0.71		nH
Pin Capacitance to ground		0.6		pF
Transmission Line Zo		39.0		Ohm
Tl		20.0		ps
<b>DC Parameters</b>				
Contact Resistance		60		Milliohm
Drive Current			1.7	Amps

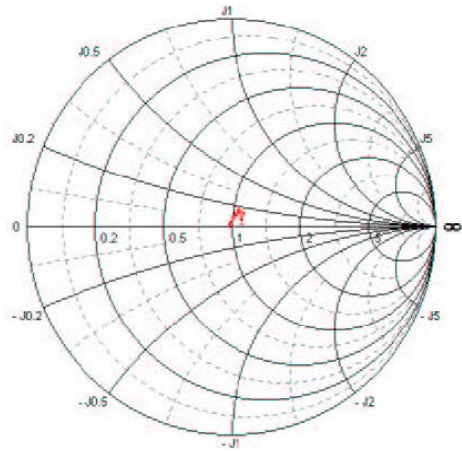


Figure 1: B2503-D4 through into 50Ω

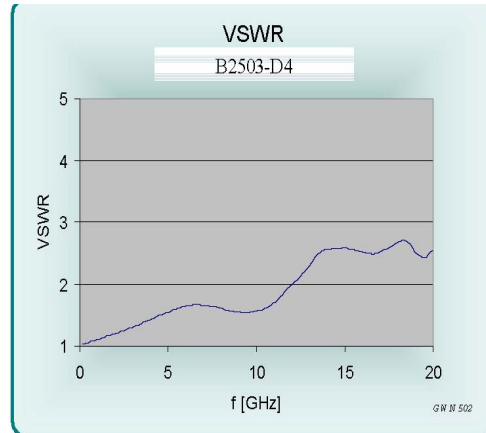


Figure 2: VSWR B2503-D4

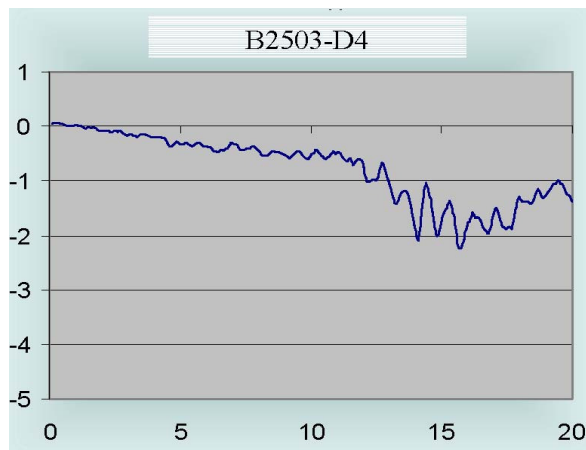
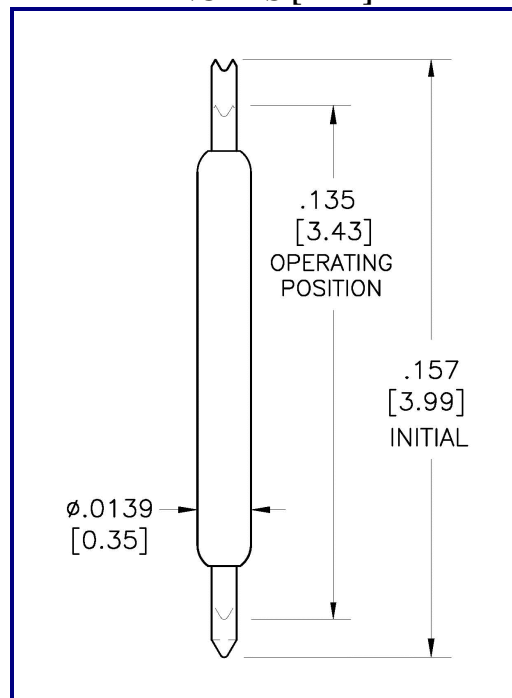


Figure 3: Insertion Loss B2503-D4

**B SERIES MODELS**

B Series 0.5mm (.0187 inch) Pitch									
Probe Series	Initial Length inch / mm		Operating Position inch / mm		Spring Force	Self Inductance	Insertion Loss Less Than -1db to	Typical Contact Resistance	Maximum Current
<a href="#">B2500</a>	.304"	7.72	.275"	6.99	28 g	1.99 nH	6.4 GHz	80 mOhms	2.6 A
<a href="#">B2501</a>	.162"	4.11	.150"	3.81	20-35 g	0.97 nH	11.2 GHz	50 mOhms	2.8 A
<a href="#">B2502</a>	.091"	2.31	.085"	2.16	32 g	0.54 nH	17.0 GHz	30 mOhms	1.5 A
<a href="#">B2503</a>	.157"	3.99	.142"	3.61	26-32 g	0.71 nH	13.0 GHz	60 mOhms	1.7 A
<a href="#">B2504</a>	.214"	5.42	.190"	4.82	24-34 g	1.12 nH	8.8 GHz	60 mOhms	2.9 A
<a href="#">B2509</a>	.108"	2.74	.094"	2.39	26 g	0.62 nH	16.1 GHz	60 mOhms	2.0 A
<a href="#">B2514</a>	.116"	2.95	.104"	2.64	26 g	0.63 nH	12.2 GHz	90 mOhms	2.0 A
B2526	.276"	7.01	.252"	6.40	20 g				

**MECHANICAL DIMENSIONS  
INCHES [MM]**


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