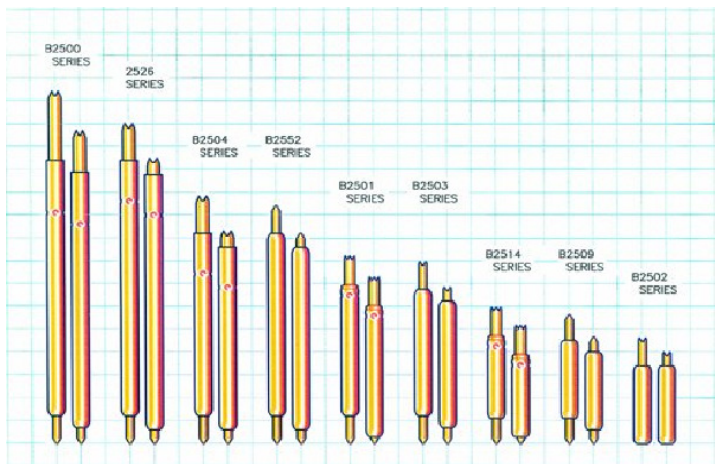


**FEATURES**

- <-1db insertion loss to 17GHz
- <2:1VSWR to 18.4GHz
- 28-32g operating spring force
- $Z_0 = 42\Omega$
- <30ps risetime
- 30milliOhms contact resistance
- 1.5 Amps max. drive current



**GENERAL DESCRIPTION**

The B2502 series spring probes from Signal Integrity Inc. are designed to meet the rigorous test requirements driven by the ultra fast risetimes in the digital domain, and high bandwidth, high frequency RF / microwave specifications for the wireless market. Along with speed and accuracy, these probes are designed to operate at pitches to 0.5mm, specifically for the ultra fine pitch packaging these markets demand.

The ultra high bandwidth of these probes provides very low insertion loss up to 17GHz. These probes will provide transparent operation on Bluetooth, 802.11b and 3G wireless protocol devices as well as exceed the test probe demands of proprietary microwave communications devices and systems.

With an impulse risetime of less than 30ps and a propagation delay of 13ps, the B2502 has more than enough performance for probe applications and interconnection solutions in broadband digital. These probes are ideal for building transparent test channels or interconnection solutions that must address datacom and source synchronous memory busses. Among others, these include Infiniband, PCI-Express, Source Synchronous DDR, Rambus<sup>™</sup>, HyperTransport and 10Gb Ethernet.

**SERIES B2502 MODELS: ORDERING INFORMATION**

B Series 0.5mm (.0197inch) Pitch				
Model	Length Operating / Initial inches [mm]	DUT Plunger	Spring	Operating Spring Force
B2502-G7	.085 [2.16] / .091 [2.31]	4 point Crown	Music Wire	32 Grams
B2502-H8	.085 [2.16] / .091 [2.31]	Conical	Music Wire	32 Grams
B2502-K2	.085 [2.16] / .091 [2.31]	Sharp Ogive	Music Wire	32 Grams
B2502-P6	.085 [2.16] / .091 [2.31]	Conical	Music Wire	28 Grams

**FUNCTIONAL SPECIFICATIONS**

Model	B2502-H8			B2502-M4			
Time Domain	Min.	Typ.	Max.	Min.	Typ.	Max.	Units
TDT Risettime into 50Ω			52.0			30.0	ps
TDR Risettime open circuit			60.0			34.5	ps
TDR Risettime short circuit			53.0			25.5	ps
Signal Delay into 50Ω		13.0			13.5		ps
<b>Frequency Domain</b>							
Insertion Loss <-0.5db		8.0		11.0			GHz
<-1.0db	17.0			15.5			GHz
<-3.0db				22.5			GHz
Return Loss <-10db				12.8			GHz
VSWR <1.5:1	11.0						GHz
<2:1	18.4			12.8			GHz
<b>Equivalent Circuit Parameters</b>							
Pin Inductance		0.48			0.54		nH
Pin Capacitance to ground		0.36			0.35		pF
Transmission Line Zo		42.0			38.6		Ohm
Tl		13.0			13.5		ps
<b>DC Parameters</b>							
Contact Resistance		30			35		milliOhm
<b>Maximum Ratings</b>							
Drive Current		1.5			1.5		A



Figure 1: Insertion Loss, S21, B2502-H8

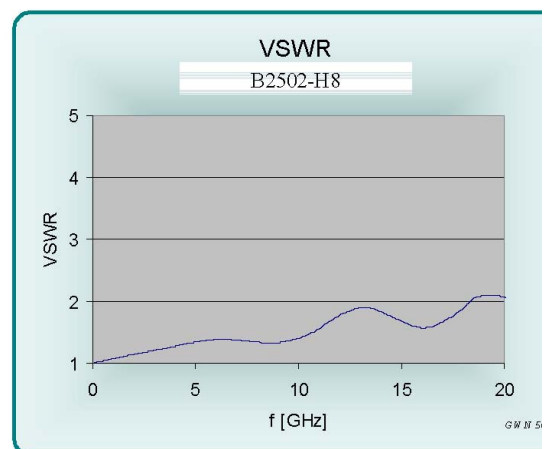


Figure 2: VSWR, B2502-H8

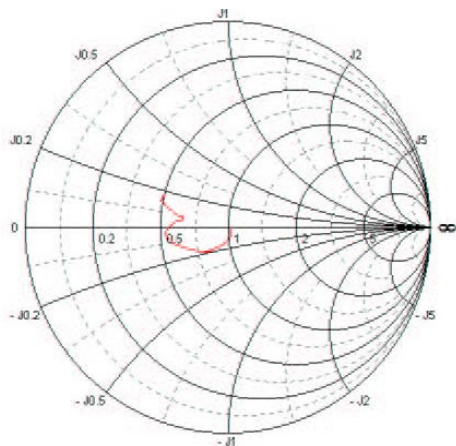


Figure 3: B2502-H8, Into 50Ω

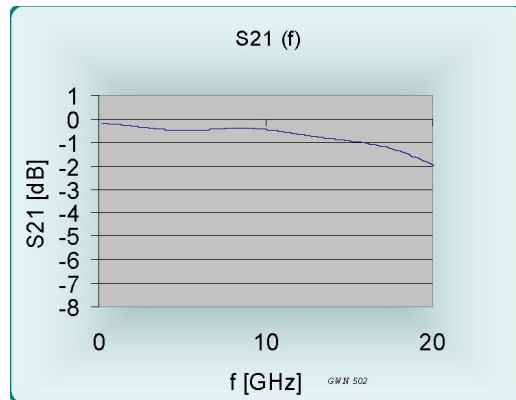


Figure 4: Insertion Loss, S21, B2502-M4

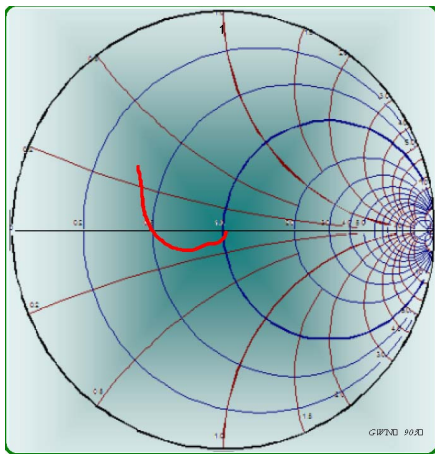


Figure 5: B2502-M4, Into 50Ω

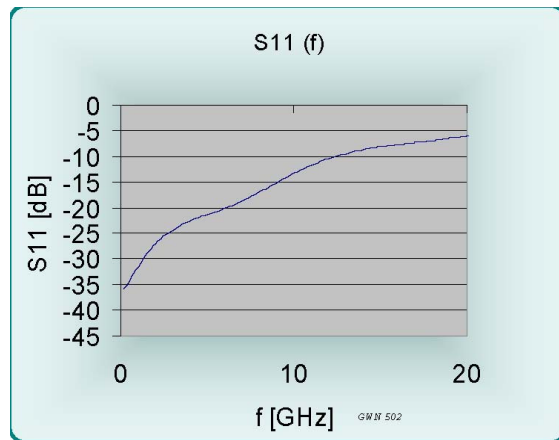


Figure 6: Return Loss, S11, B2502-M4

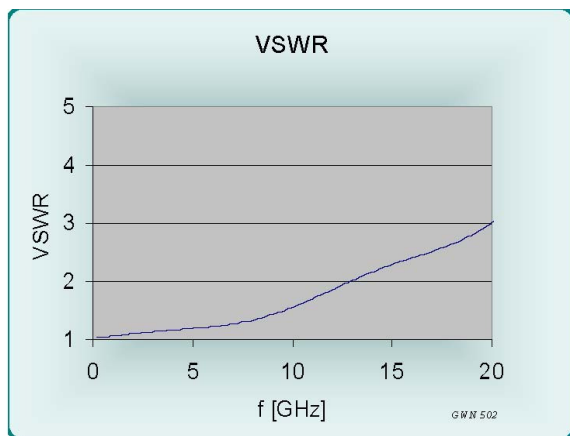
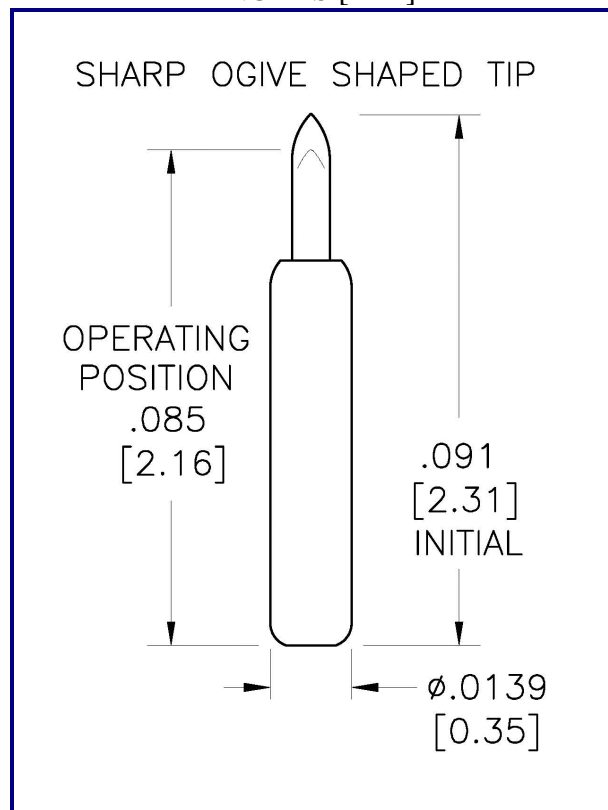


Figure 7: VSWR, B2502-M4

**B SERIES MODELS**
**B Series 0.5mm (.0197 inch) Pitch**

Probe Series	Initial Length inch / mm		Operating Position inch / mm		Spring Force	Self Inductance	Insertion Loss <-1db to	Typical Contact Resistance	Maximum Current
<a href="#">B2500</a>	.304"	7.72	.275"	6.99	28 g	1.73 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	0.60 nH	13.2 GHz	90 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
<a href="#">B2535</a>	.217"	5.50	.199"	5.05	26-31 g	~	~	55 mOhms	2.3 A

**MECHANICAL DIMENSIONS  
INCHES [MM]**


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