

03/10/17	solenoid's characteristics					Self Inductance (calculated)
	l average, mm	h, average, mm	N	Inv. Step (mm <sup>-1</sup> ) (N/L)	l*h= area (mm <sup>2</sup> )	L (theoretical) micro Henry
Sol 4	62	40.5	47	0.25	2511.00	37.057338
Sol 8	62	40.5	24	0.125	2511.00	9.461448

Measurements FROM PICTURES– Self inductance

V are rms	V_L	V_R	freq.(MHz)	R (ohm)	10 <sup>6</sup> R VL/VR /omega (naive L in micro H)	L (micro H) after probe impedance correction	probe capacitance (pF)	omega
Sol 4	4mm coil							
	9.68	0.181	2.012	10	42.33 check possible	38.41	1.50E-11	1.26E+07
	9.89	0.408	1.01	10	38.22 from picture	37.34	1.50E-11	6.35E+06
	9.02	0.765	0.499	10	37.63	37.40	1.50E-11	3.14E+06
Sol 8	8mm coil							
	5.08	1.37	0.497	10	11.88	11.85	1.50E-11	3.12E+06
	7.22	0.981	1.006	10	11.65	11.56	1.50E-11	6.32E+06
	7.96	0.572	2.008	10	11.04 from picture	10.75	1.50E-11	1.26E+07

Probe coil	N'=20	D= 14.2mm	E'/V freq (MHz) calculated
Sol 4			0.62
Sol 8			0.31

Measurements – FROM PICTURES Probe coil				
	E'	V	freq.(MHz)	E'/V freq (MHz)
Sol 4	0.246	0.761	0.503	0.64
	0.269	0.418	1.009	0.64
	0.264	0.215	2.008	0.61
Sol 8	0.219	1.36	0.503	0.32
	0.313	0.991	1.009	0.31
	0.361	0.583	2.004	0.31

Other calculations

Coil 2	diam (mm)	area (m <sup>2</sup> )	N'	L' (mm)
	14.2	0.0001584	20	9.9
	(in Henry) sol. 4mm sol. 8mm			
L11		3.71E-05	9.46E-06	
M12		9.95E-07	4.98E-07	
L22		8.04E-06		