

# Super-HiQ Series, Ultra Low ESR, NP0

## RF & Microwave Capacitors, RoHS Compliant

### DESCRIPTION

Lowest ESR in class  
 Highest working voltage in class - 500V  
 Standard EIA sizes  
 Laser Marked (optional)  
 High Self Resonance Frequencies



### APPLICATIONS

- Cellular Base Station Equipment
- Broadband Wireless Service
- Point to Point/Multipoint Radios
- RF Generators (NMR...)

### CIRCUIT APPLICATIONS

- Filter Networks
- Matching Networks
- Tuning, Coupling and DC Blocking

## I. ELECTRICAL SPECIFICATIONS

Parameter	Value
Capacitance	0.2 to 1'000 pF
Tolerances	A, B, C, D below 10 pF F, G, J, K above 10 pF
Working Voltage (WVDC)	see Capacitance Value chart
Temperature Coefficient	0 +/-30ppm/°C, -55°C to +125°C
Insulation Resistance	10 <sup>5</sup> MΩ min
Dielectric Withstanding (test voltage applied for 5 seconds)	2.5 x WVDC for WVDC ≤ 500V
Aging	none
Piezo Effects	none

## II. MECHANICAL SPECIFICATIONS

Parameter	Value	Comment
Case Size	L	0402
	A	0505
	S	0603
	F	0805
	N	1206
	T	1210
	B	1111

For each case size, the recommended terminations are listed below.

NB:

- all the terminations are backward compatible and lead-free.
- the non-magnetic terminations are all Magnetism-free Rated.

**MR** certified®

**ITAR** Free®

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Termination Type	Code	SHL	SHS	SHA-SHF SHN-SHT	SHB
Standard (tin-plated nickel)	S	AVAILABLE	AVAILABLE	AVAILABLE	AVAILABLE
Non-magnetic (silver-palladium)	A			AVAILABLE <sup>(3)</sup>	
Non-magnetic (tin-plated copper)	C		AVAILABLE <sup>(1)</sup>		AVAILABLE <sup>(2)</sup>

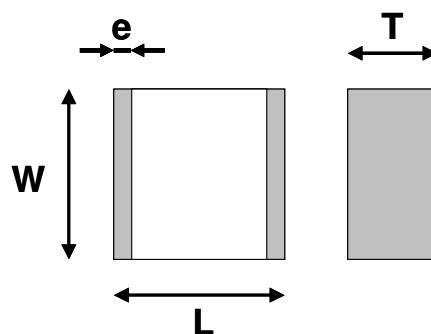
(1): a separate data-sheet is available regarding 0603 size with copper terminations (non-magnetic), please consult factory.

(2): range up to 330pF only. For higher capacitance values, please consult factory.

(3): range up to 150pF only. For higher capacitance values, please consult factory.

### III. OUTLINE DIMENSIONS

Parameter	L (0402)	A (0505)	S (0603)	F (0805)	N (1206)	T (1210)	B (1111)
Length (L)	1.00 ±0.15mm	1.40 ±0.25mm	1.60 ±0.25mm	2.03 ±0.25mm	3.18 ±0.25mm	3.18 ±0.25mm	2.80 ±0.40mm
Width (W)	0.50 ±0.15mm	1.40 ±0.25mm	0.80 ±0.25mm	1.27 ±0.25mm	1.58 ±0.25mm	2.41 ±0.25mm	2.80 ±0.40mm
Thickness (T)	0.50 mm (max.)	1.40 mm (max.)	0.90 mm (max.)	1.27 mm (max.)	1.27 mm (max.)	1.52 mm (max.)	2.60 mm (max.)
End-Band (e)	0.25 ±0.15mm	0.25 ±0.15mm	0.35 ±0.20mm	0.50 ±0.30mm	0.50 ±0.25mm	0.50 ±0.25mm	0.40 ±0.25mm



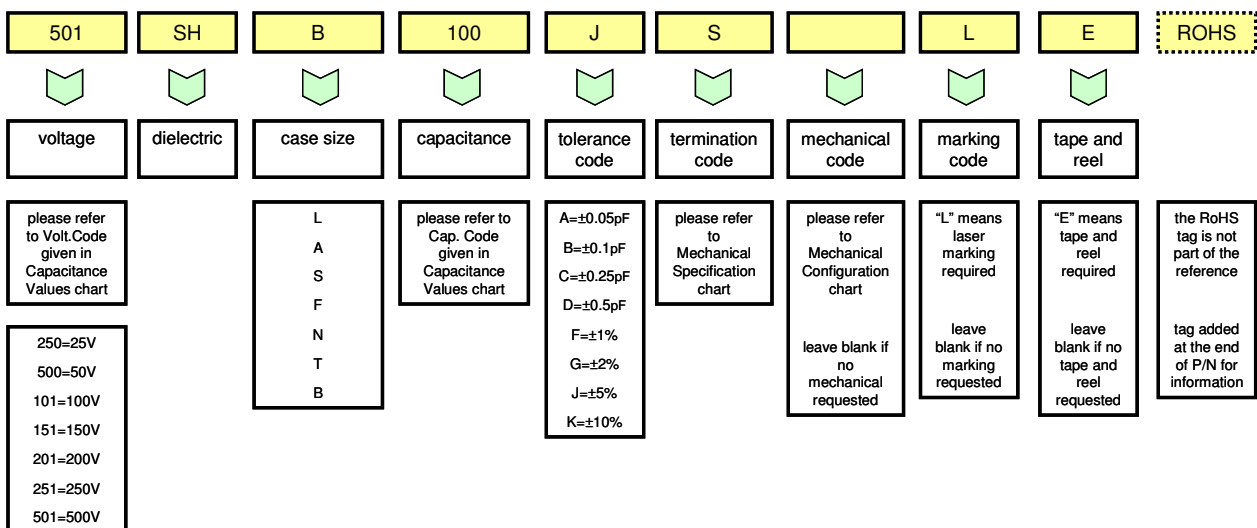
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### IV. ENVIRONMENTAL SPECIFICATIONS

Parameter	Value
Life Test	1'000 hours, +125°C at 2.0 x WVDC
Moisture Resistance Test 1	240 hours, 85% relative humidity at +85°C (ESA/SCC n°3009)
Moisture Resistance Test 2	56 days, 93% relative humidity at +40°C 0V, 5V, WVDC

### V. HOW TO ORDER



NB:

- for capacitance values lower than 10pF, tolerances B, C and D apply. For capacitance values equal to or higher than 10pF, tolerances F, G, J and K apply. Also, the A tolerance is only available up to 2pF inclusive (please consult us for specific requirements).
- marking is only available on A and B case sizes.

### VI. TAPE AND REEL

The following chart gives the number of components per reel.

	SHL	SHA	SHS	SHF	SHN	SHT	SHB
Parts per Reel	10'000	3'000	4'000	4'000	3'000	3'000	1'000

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### VII. CAPACITANCE VALUES

Value (pF)	Cap. Code	L (0402)	A (0505)	S (0603)	F (0805)	N (1206)	T (1210)	B (1111)
0.2	0R2	50V	250V	250V	250V	500V	500V	500V
0.3	0R3							
0.4	0R4							
0.5	0R5							
0.6	0R6							
0.7	0R7							
0.8	0R8							
0.9	0R9							
1.0	1R0							
1.1	1R1							
1.2	1R2							
1.3	1R3							
1.4	1R4							
1.5	1R5							
1.6	1R6							
1.7	1R7							
1.8	1R8							
1.9	1R9							
2.0	2R0							
2.1	2R1							
2.2	2R2							
2.4	2R4							
2.7	2R7							
3.0	3R0							
3.3	3R3							
3.6	3R6							
3.9	3R9							
4.3	4R3							
4.7	4R7							
5.1	5R1							
5.6	5R6							
6.2	6R2							
6.8	6R8							
7.5	7R5							
8.2	8R2							
9.1	9R1							
10	100							
11	110							
12	120							
15	150							
16	160							
18	180							
20	200							
22	220							
24	240							
27	270							
30	300							
33	330							
36	360							
39	390							
43	430							
47	470							
51	510							
56	560							
62	620							
68	680							
75	750							
82	820							
91	910							
100	101							
110	111							
120	121							
130	131							
150	151							
160	161							
180	181							
200	201							
220	221							
240	241							
270	271							
300	301							
330	331							
360	361							
390	391							
430	431							
470	471							
510	511							
560	561							
620	621							
680	681							
750	751							
820	821							
910	911							
1 000	102							

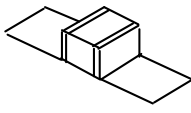
NB: special values, tolerances, higher WVDC and matching available, please consult factory.

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### VIII. MECHANICAL CONFIGURATIONS

#### VIII.1. Lead/Ribbon and Wire Types

Termination Type	Code	Description
	1	Micro-strip Ribbon

NB: when coding ribbons or wires, for the designation of the part, the termination has to be mentioned for MR<sub>certified</sub> types to make sure only non-magnetic materials are used.

Examples :    501 SHB 470 J1L                      any termination material could be used  
                   501 SHB 470 JC1L                    only non-magnetic termination materials could be used

#### VIII.2. Lead/Ribbon and Wire Matrix

Termination Type	Code	SHL/SHA/SHS SHF/SHN/SHT	SHB
Micro-strip Ribbon	1		AVAILABLE

#### VIII.3. Lead/Ribbon and Wire Dimensions

Within each cell, first the length and then the width/diameter of any single ribbon or wire are given.

Termination Type	Code	SHL/SHA/SHS SHF/SHN/SHT	SHB
Micro-strip Ribbon	1		8.00 2.40

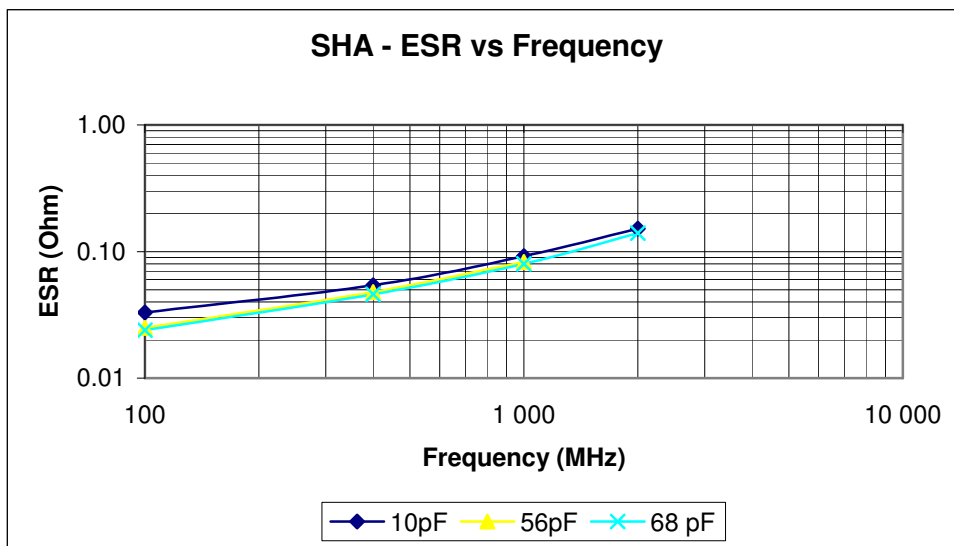
NB: dimensions are in mm, length is the minimum value.

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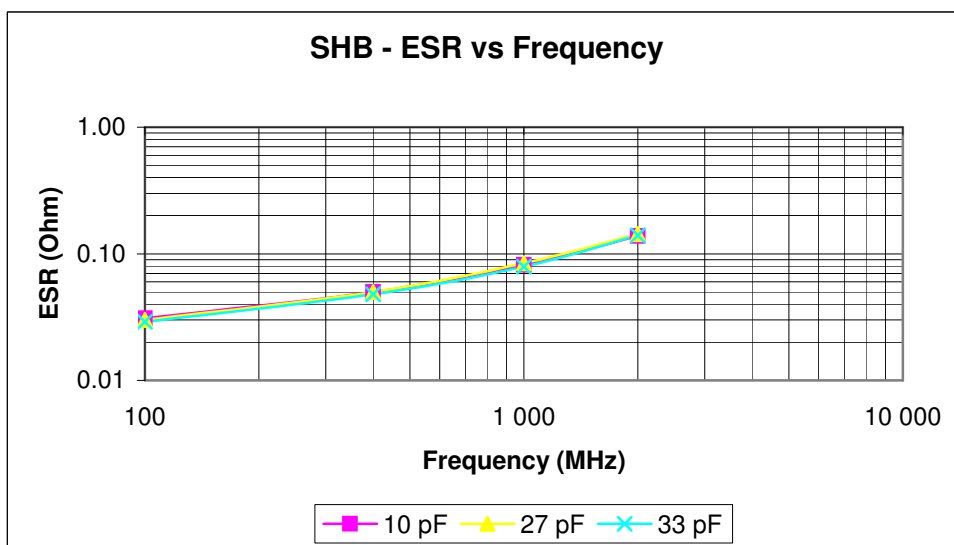
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### IX. TYPICAL PERFORMANCE DATA

#### IX.1. CAPACITANCE IN A SIZE (0505): SUPER-HIQ SERIES



#### IX.2. CAPACITANCE IN B SIZE (1111): SUPER-HIQ SERIES

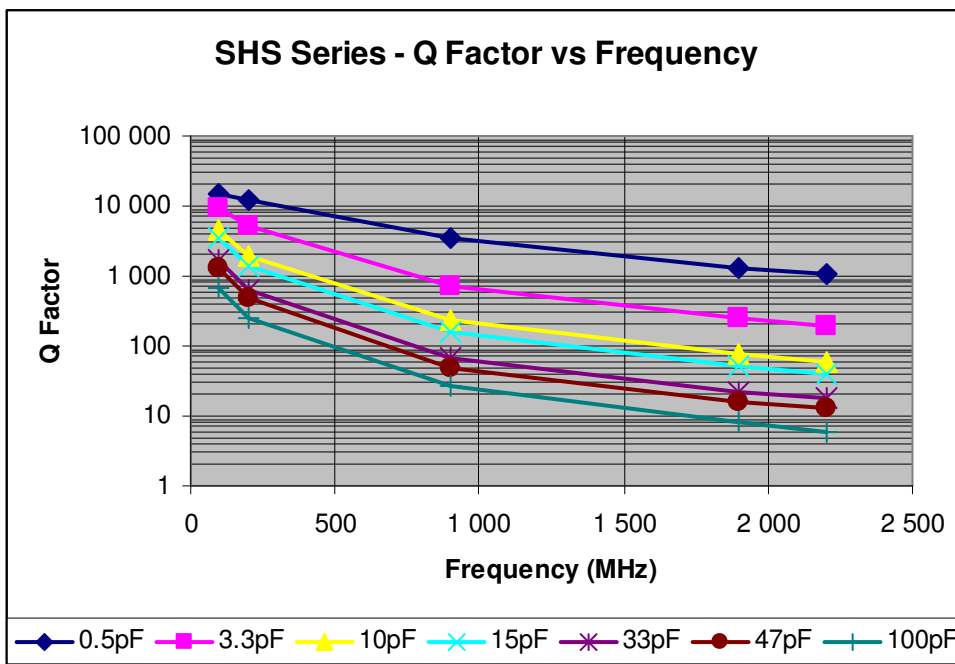
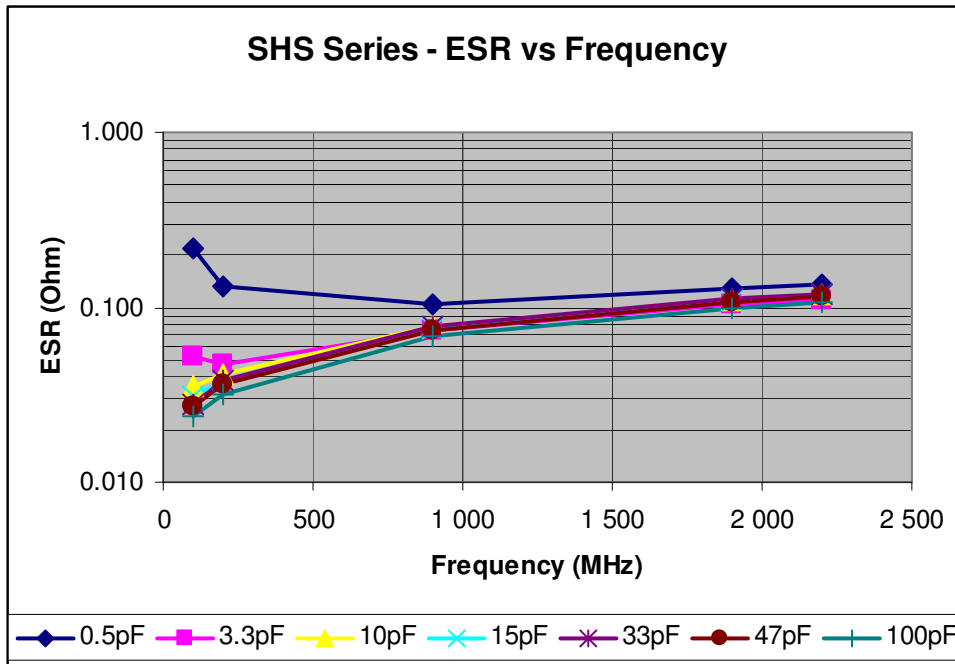


TEMEX CERAMICS reserves the right to modify herein specifications and information at any time when necessary to provide optimum performance and cost.

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### IX.3. CAPACITANCE IN S SIZE (0603): SUPER-HIQ SERIES



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