

# Classic-HiQ Series, Low ESR

## RF & Microwave Capacitors, RoHS Compliant

### DESCRIPTION

Low ESR, Ultra High-Q  
 Highest working voltage in class - 1'500V  
 Porcelain Capacitors  
 Laser Marked (optional)  
 High Self-Resonance Frequencies



### APPLICATIONS

- Cellular Base Station Amplifiers
- Industrial
- Medical (MRI)
- Scientific

### CIRCUIT APPLICATIONS

- DC to RF Conversion
- Matching Networks
- Tuning, Coupling and DC Blocking

## I. ELECTRICAL SPECIFICATIONS

Parameter	Value
Capacitance	0.1 to 1'000 pF
Tolerances	A, B, C, D below 10 pF F, G, J, K, M above 10 pF
Working Voltage (WVDC)	see Capacitance Value chart
Temperature Coefficient	100 +/-30ppm/°C, -55°C to +125°C
Insulation Resistance	10 <sup>6</sup> MΩ min
Dielectric Withstanding (test voltage applied for 5 seconds)	2.5 x WVDC for WVDC ≤ 500V 1.5 x WVDC for 500V < WVDC
Aging	none
Piezo Effects	none

NB: the temperature range for the CHB below 10pF is upgraded from +125°C to +175°C.

## II. MECHANICAL SPECIFICATIONS

Parameter	Value	Comment
Case Size	A B	0505 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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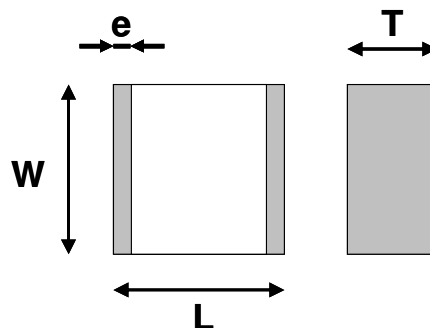
Termination Type	Code	CHA	CHB
Standard (tin-plated nickel)	S	AVAILABLE	AVAILABLE
Non-magnetic (tin-plated copper)	C	AVAILABLE	AVAILABLE

### III. ENVIRONMENTAL SPECIFICATIONS

Parameter	Value
Life Test	2'000 hours, +125 °C at 2.0 x WVDC (standard WVDC range)
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

### IV. OUTLINE DIMENSIONS

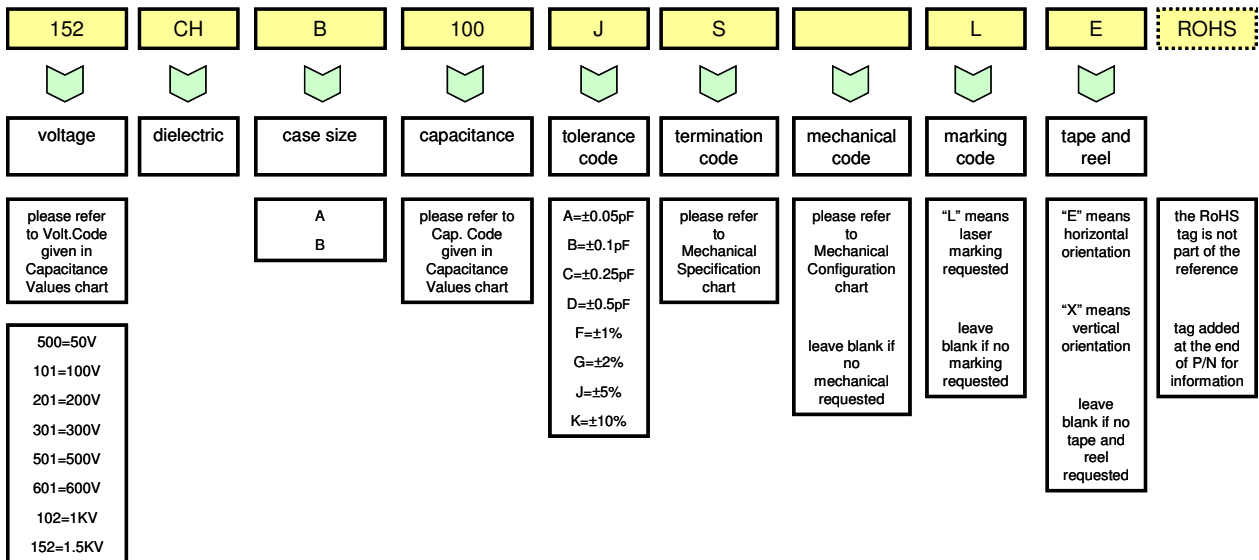
Parameter	A (0505)	B (1111)
Length (L)	1.40 ±0.25mm	2.80 ±0.40mm
Width (W)	1.40 ±0.25mm	2.80 ±0.40mm
Thickness (T)	1.40 mm (max.)	2.60 mm (max.)
End-Band (e)	0.25 ±0.15mm	0.40 ±0.25mm



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### V. HOW TO ORDER



NB: for capacitance values lower than 10pF, tolerances A, B, C and D apply. For capacitance values equal to or higher than 10pF, tolerances F, G, J and K apply;

### VI. TAPE AND REEL

The following chart gives the number of components per reel.

	CHA	CHB
Parts per Reel	3'000	1'000

NB: the vertical orientation of product (letter code X) is only available on CHB.

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### VII. CAPACITANCE VALUES

Value (pF)	Cap. Code	A (0505)	B (1111)		Value (pF)	Cap. Code	A (0505)	B (1111)	
			Standard	Extended				Standard	Extended
0.1	0R1	200V	500V	1500V	18	180	200V	500V	1500V
0.2	0R2				20	200			
0.3	0R3				22	220			
0.4	0R4				24	240			
0.5	0R5				27	270			
0.6	0R6				30	300			
0.7	0R7				33	330			
0.8	0R8				36	360			
0.9	0R9				39	390			
1.0	1R0				43	430			
1.1	1R1				47	470			
1.2	1R2				51	510			
1.3	1R3				56	560			
1.4	1R4				62	620			
1.5	1R5				68	680			
1.6	1R6				75	750			
1.7	1R7	82	820						
1.8	1R8	91	910						
1.9	1R9	100	101	200V	101	200V	300V	1000V	
2.0	2R0	110	111						
2.1	2R1	120	121						
2.2	2R2	130	131						
2.4	2R4	150	151						
2.7	2R7	160	161						
3.0	3R0	180	181						
3.3	3R3	200	201						
3.6	3R6	220	221						
3.9	3R9	240	241						
4.3	4R3	270	271						
4.7	4R7	300	301						
5.1	5R1	330	331						
5.6	5R6	360	361						
6.2	6R2	390	391						
6.8	6R8	430	431						
7.5	7R5	470	471						
8.2	8R2	510	511						
9.1	9R1	560	561						
10	100	620	621						
11	110	680	681						
12	120	750	751						
13	130	820	821						
15	150	910	911						
16	160	1 000	102						

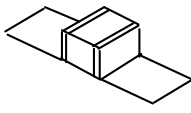
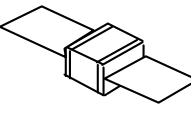
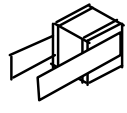
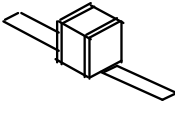
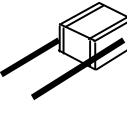
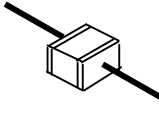
NB: special values, tolerances, higher WVDC and matching available, please consult factory. Dielectric withstanding test is done at 1.8 x WVDC for Extended Range values  $\geq 820\text{pF}$ .

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### VIII. MECHANICAL CONFIGURATIONS

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

Configuration Type	Code	Description
	1	Micro-strip Ribbon
	2	Axial Ribbon
	3	Radial Ribbon
	5	Narrow Micro-strip Ribbon
	6	Radial Wire
	7	Axial Wire

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

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

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

<i>Termination Type</i>	<i>Code</i>	<i>CHA</i>	<i>CHB</i>
Micro-strip Ribbon	1		AVAILABLE
Axial Ribbon	2		AVAILABLE
Radial Ribbon	3		AVAILABLE
Narrow Micro-strip Ribbon	5		AVAILABLE
Radial Wire	6		AVAILABLE
Axial Wire	7		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.

<i>Termination Type</i>	<i>Code</i>	<i>CHA</i>	<i>CHB</i>
Micro-strip Ribbon	1		8.00 2.40
Axial Ribbon	2		8.00 2.40
Radial Ribbon	3		8.00 2.40
Narrow Micro-strip Ribbon	5		8.00 1.27
Radial Wire	6		20.00 0.60
Axial Wire	7		20.00 0.60

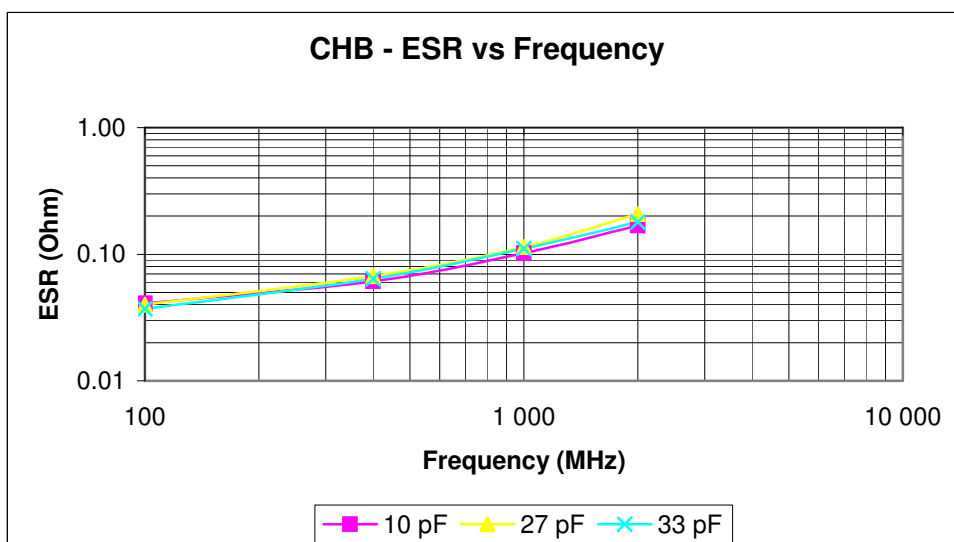
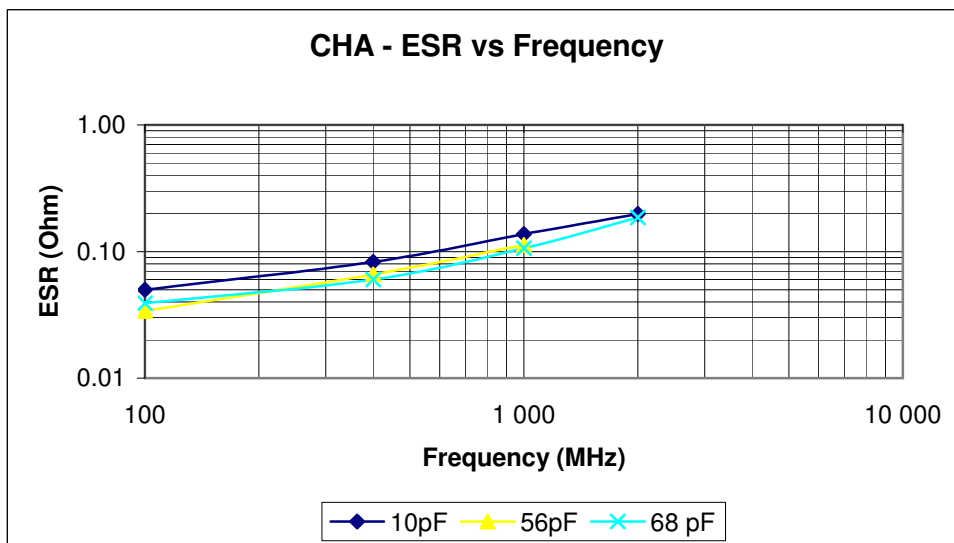
NB: dimensions are in mm, length is the minimum value.

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### IX. PERFORMANCE DATA

#### IX.1. ESR

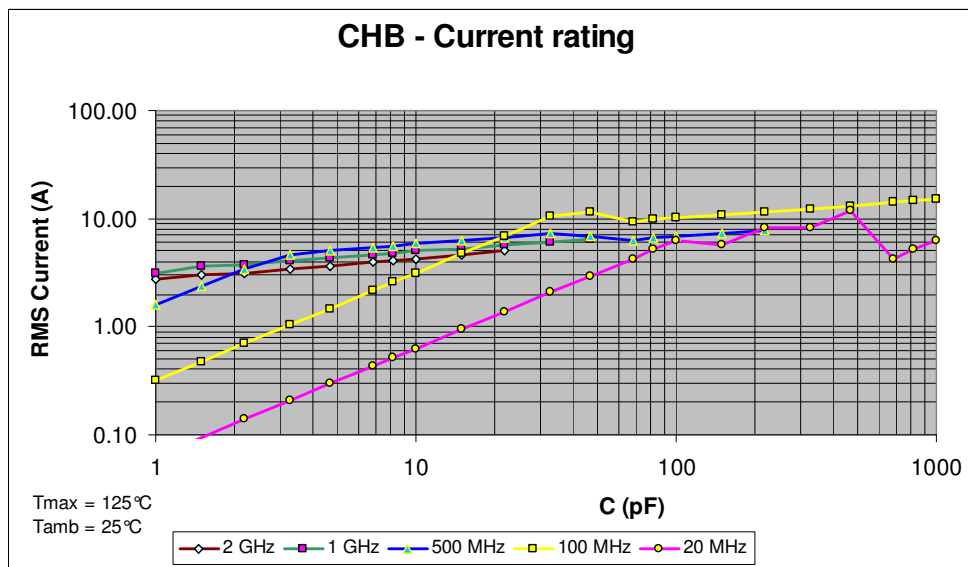
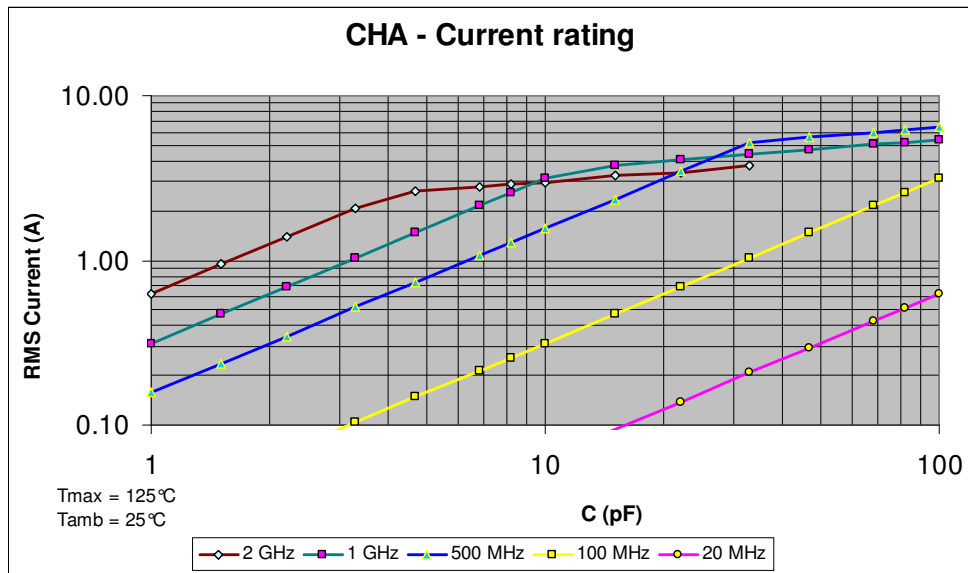


TEMEX CERAMICS reserves the right to modify herein specifications and information at any time when necessary to provide optimum performance and cost.

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### IX.2. Current Rating



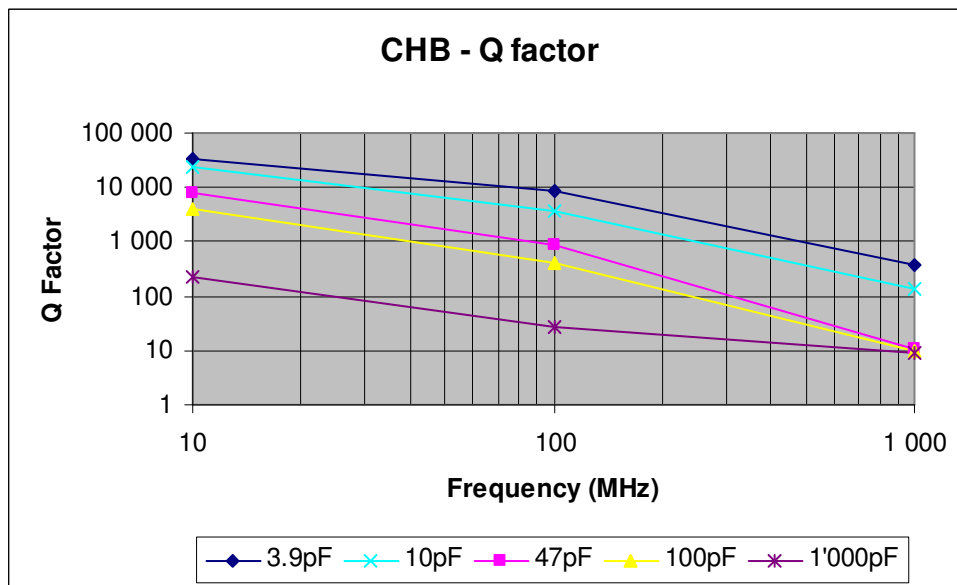
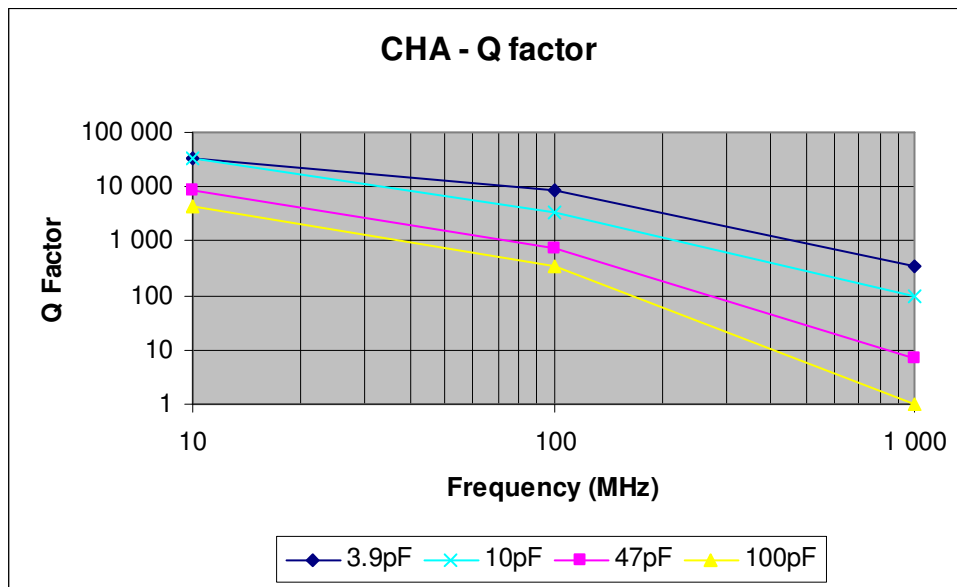
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### IX.3. Q Factor



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### IX.4. Series Resonance Frequency

