CH Series

Classic HiQ

According to

FEATURES

- Low ESR, Ultra High-Q, High Self-Resonant Frequencies
- RF & Microwave capacitors
- Voltage range: 50V - 1,500V
- Capacitance range: 0.1pF - 1,000pF
- Operating temperature up to 125°C*
- Porcelain Capacitors P100
- Laser Marked (optional)
- RoHS compliant

APPLICATIONS

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

CIRCUIT APPLICATIONS

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

PHYSICAL CHARACTERISTICS

- Chip capacitors for surface mounting with copper (non magnetic) or nickel barrier and tinning
- Ribbon leads for surface mounting

ELECTRICAL AND ENVIRONMENTAL SPECIFICATIONS

Electrical specifications	
Parameter	**Value**
Capacitance	0.1pF - 1,000pF
Tolerances	A, B, C, D below 10pF F, G, J, K above 10pF
Working voltage (WVDC)	See capacitance range chart
Temperature coefficient	(100 ± 30) ppm/°C, –55°C to +125°C
Insulation Resistance	10^6 MΩ min.
Dielectric Withstanding (test voltage applied for 5 seconds)	2.5 x WVDC for WVDC ≤ 500V 1.8 x WVDC for extended range values ≥ 820pF 1.5 x WVDC for WVDC > 500V
Aging	none
Piezo Effect	none

Environmental specifications	
Parameter	**Value**
Life Test	2,000 hours, +125°C @ 2 x WVDC (standard WVDC range) And CHB up to 100pF: 1,000 hours, 175°C @ 500V
Moisture Resistance Test 1	240 hours, 85% relative humidity @ 85°C (ESA/SCC n°3009)
Moisture Resistance Test 2	56 days, 93% relative humidity @ 40°C 0V, 5V, WVDC

NB: The temperature range for the CHB up to 100pF is upgrated from +125°C to +175°C.
The temperature withstanding for SHF and SHS is 150°C for the whole capacitance range.

HOW TO ORDER

152	CH	B	100	J	S	1	L	E	-RoHS
Voltage code	Dielectric	Size code	Capacitance code	Tolerance code	Termination code	Ribbon code	Marking code	Tape and reel	
500 = 50V **101** = 100V **201** = 200V **251** = 250V **301** = 300V **501** = 500V **601** = 600V **102** = 1,000V **152** = 1,500V Please refer to voltage given in capacitance range chart	**CH** = (100±30) ppm/°C	**A** = 0505 **B** = 1111	Please refer to capacitance code given in capacitance range chart	**A** = ±0.05pF **B** = ±0.1pF **C** = ±0.25pF **D** = ±0.5pF **F** = ±1% **G** = ±2% **J** = ±5% **K** = ±10% See note 1	S = Standard: tin-plated nickel C = Non-magnetic: tin-plated copper See note 2	**-**: no lead or ribbon Available on size 1111: **1** = Micro-strip ribbons. 0.1pF (0R1) non available with this terminations. See note 3	**-**: no marking **L** = laser marking	**-**: no tape and reel **E** = horizontal orientation **X** = verticale orientation CHA: 3,000 components per reel CHB: 1,000 components per reel	The RoHS tag is not part of the reference Tag added at the end of P/N for information

Note 1: For capacitance values less than 10pF, tolerances B, C and D available. Tolerance code A available for: A case for capacitance values of 0.1pF - 4.7pF. B case for capacitance values of 0.1pF - 3.3pF. For capacitance values of 10pF or higher, tolerances F, G, J and K available.
Note 2: All terminations are backward compatible and lead-free. The non-magnetic terminations are all Magnetism-free Rated.
Note 3: when coding ribbons for the description of the part, the termination has to be mentioned for MR certified 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.
Please consult us for specific requirements.

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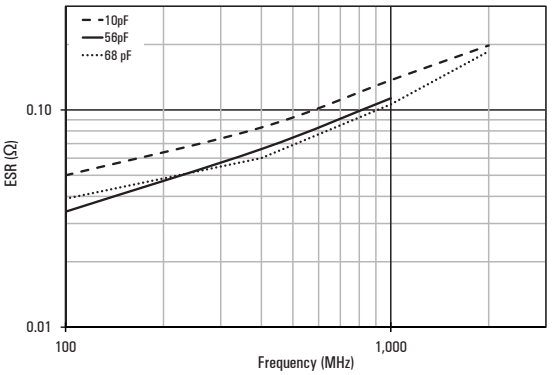
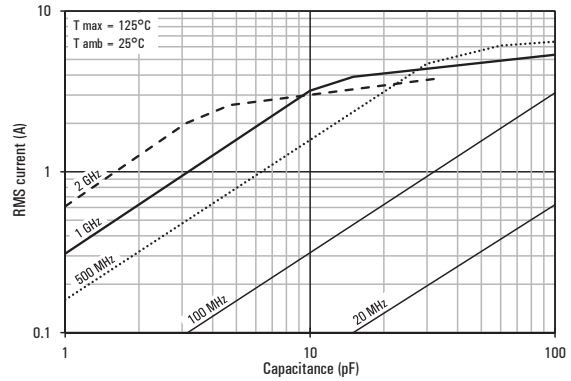
TYPICAL PERFORMANCE DATA CHA (0505 SIZE):

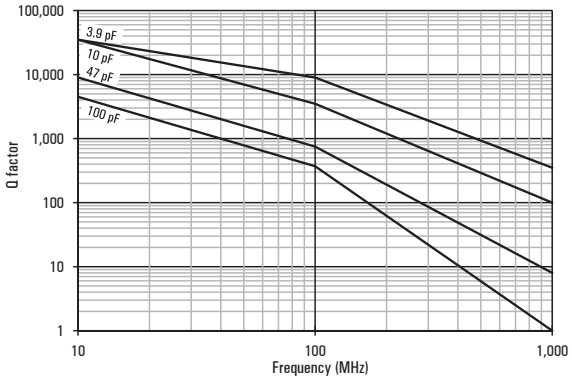
ESR VERSUS FREQUENCY



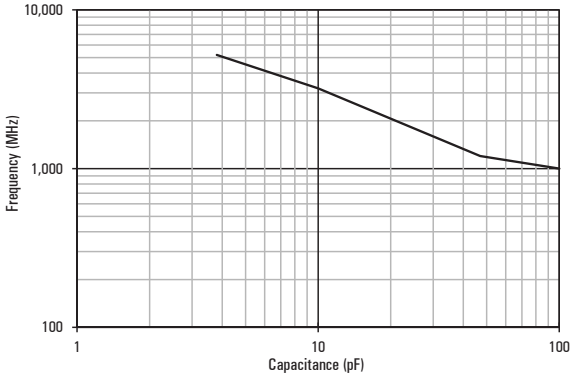
CURRENT RATING VERSUS CAPACITANCE



Q FACTOR VERSUS FREQUENCY

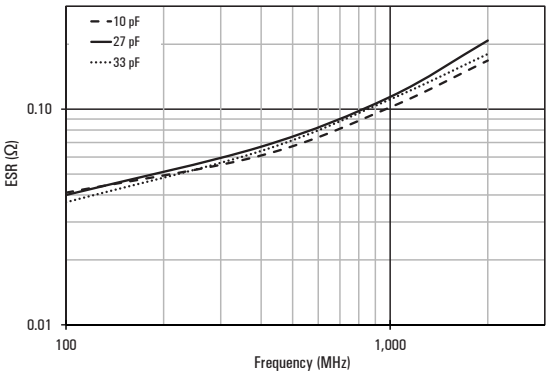


SERIES RESONANCE FREQUENCY VERSUS CAPACITANCE

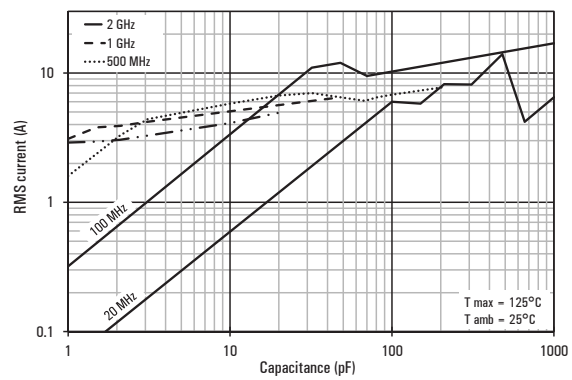


TYPICAL PERFORMANCE DATA CHB (SIZE 1111):

ESR VERSUS FREQUENCY



CURRENT RATING VERSUS CAPACITANCE



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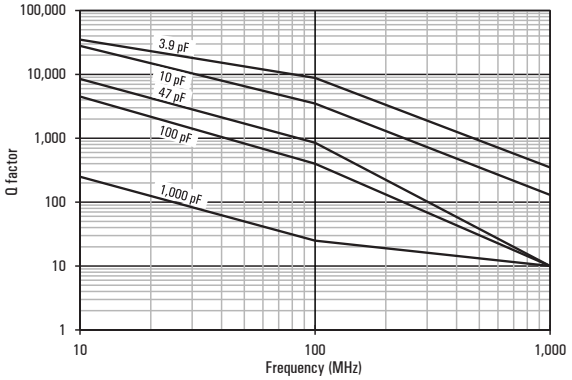

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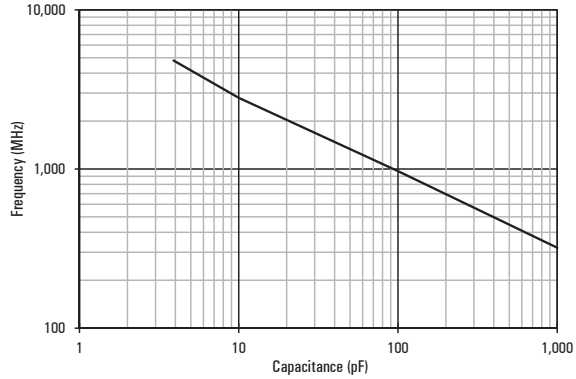

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STANDARD RATINGS

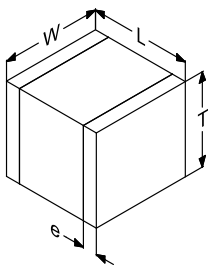
Size		0505	1111	
Size code		A	B	
Dimensions inches (mm)	L	0.055 ± 0.01 (1.4 ± 0.25)	0.11 ± 0.016 (2.8 ± 0.4)	
	W	0.055 ± 0.01 (1.4 ± 0.25)	0.11 ± 0.016 (2.8 ± 0.4)	
	T	0.056 max (1.4 max)	0.103 max (2.6 max)	
	e	0.01 ± 0.006 (0.25 ± 0.15)	0.016 ± 0.01 (0.4 ± 0.25)	
Value (pF)	Cap. Code	Standard	Standard	Extended
0.1	0R1	250V	500V	1,500V
0.2	0R2			
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			
13	130			
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			

Size		0505	1111	
Size code		A	B	
Dimensions inches (mm)	L	0.055 ± 0.01 (1.4 ± 0.25)	0.11 ± 0.016 (2.8 ± 0.4)	
	W	0.055 ± 0.01 (1.4 ± 0.25)	0.11 ± 0.016 (2.8 ± 0.4)	
	T	0.056 max (1.4 max)	0.103 max (2.6 max)	
	e	0.01 ± 0.006 (0.25 ± 0.15)	0.016 ± 0.01 (0.4 ± 0.25)	
Value (pF)	Cap. Code	Standard	Standard	Extended
51	510	200V	500V	1,500V
56	560			
62	620			
68	680			
75	750			
82	820			
91	910			
100	101			
110	111			
120	121		300V	1,000V
130	131			
150	151			
160	161			
180	181			
200	201			
220	221			
240	241		200V	600V
270	271			
300	301			
330	331			
360	361			
390	391			
430	431			
470	471			
510	511		100V	300V
560	561			
620	621			
680	681		50V	
750	751			
820	821			
910	911			
1,000	102			

Special values, tolerances, higher WVDC and matching available, please consult factory.

DIMENSIONS in inches (mm)

Chips



Micro-strip ribbon leads (Type 1)