

CL - High Power, High Q, NP0, RoHS

RF Power Capacitors, Ultra Stability

DESCRIPTION

Low ESR/ESL
 NP0 Porcelain Capacitors
 Excellent characteristics in current, voltage and power with high Q factor
 Highest working voltage in class – 7'000V



APPLICATIONS

- RF Power Amplifiers
- Industrial (Plasma Chamber)
- Medical (MRI Coils)

CIRCUIT APPLICATIONS

- DC Blocking
- Matching Networks
- Tuning and Coupling

I. ELECTRICAL SPECIFICATIONS

Parameter	Value
Capacitance	1 to 10'000 pF
Tolerances	B, C, D below 10 pF F, G, J, K, M above 10 pF
Working Voltage (WVDC)	see Capacitance Value chart
Temperature Coefficient	0 +/-30ppm/°C, -55°C to +12 5°C
Insulation Resistance	10 ⁵ MΩ min @ 25°C at rated WVDC 10 ⁴ MΩ min @ 125°C at rated WVDC
Dielectric Withstanding (test voltage applied for 5 seconds)	2.0 x WVDC for WVDC ≤ 500V 1.5 x WVDC for 500V < WVDC ≤ 2'500V 1.3 x WVDC for WVDC > 2'500V
Aging	none
Piezo Effects	none

II. MECHANICAL SPECIFICATIONS

Parameter	Value	Comment
Case Size	X E	2225 4040

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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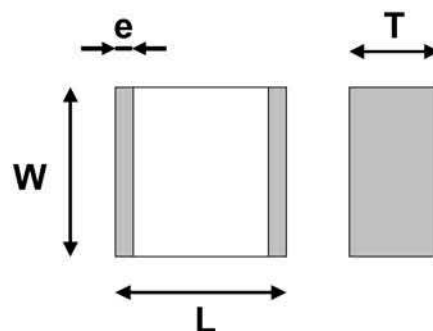
Termination Type	Code	CLX	CLE
Standard (tin-plated nickel)	S	AVAILABLE	AVAILABLE
Non-magnetic (silver-palladium)	A		
Non-magnetic (tin-plated copper)	C	AVAILABLE	AVAILABLE

III. ENVIRONMENTAL SPECIFICATIONS

Parameter	Value
Life Test	2'000 hours, +125°C at 1.5 x WVDC (WVDC≤500V) at 1.3 x WVDC (500V<WVDC<1'250V) at 1.0 x WVDC (1'250V≤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

IV. OUTLINE DIMENSIONS

Parameter	X (2225)	E (4040)
Length (L)	6.20 ±0.50 mm	10.50 ±0.50 mm
Width (W)	6.60 ±0.50 mm	9.50 ±0.50 mm
Thickness (T)	3.80 mm (max.)	4.50 mm (max.)
End-Band (e)	0.80 ±0.60mm	0.80 ±0.60mm



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V. HOW TO ORDER

362	CL	X	100	G	C	1		L		ROHS
voltage	dielectric	case size	capacitance	tolerance code	termination code	mechanical code	coating code	marking code	tape and reel	
please refer to Volt. Code given in Capacitance Values chart		X E	please refer to Cap. Code given in Capacitance Values chart	A=±0.05pF B=±0.1pF C=±0.25pF D=±0.5pF F=±1% G=±2% J=±5% K=±10%	please refer to Mechanical Termination chart	please refer to Mechanical Configuration chart	"H" means coating requested leave blank if no coating requested	"L" means marking requested leave blank if no marking requested	"E" means horizontal orientation "X" means vertical orientation leave blank if no tape and reel requested	the RoHS tag is not part of the reference tag added at the end of P/N for information
201=200V 301=300V 501=500V 102=1KV 122=1.2KV 152=1.5KV 162=1.6KV 252=2.5KV 362=3.6KV 502=5KV 702=7KV										

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.
- only CLX and CLE case size capacitor chips could be supply with tape and reel.

VI. TAPE AND REEL

The following chart gives the number of components per reel.

	CLX	CLE
Parts per Reel	500	700

NB: the vertical orientation of product (letter code X) is only available on CLE. In this case, the quantity per reel is 350 pieces.

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VII. CAPACITANCE VALUES

Value (pF)	Cap. Code	X (2225)		E (4040)		Value (pF)	Cap. Code	X (2225)		E (4040)			
		Standard	Extended	Standard	Extended			Standard	Extended	Standard	Extended		
1.0	1R0	2500V	3600V	3600V	7000V	56	560	2500V	3600V	7000V	7000V		
1.1	1R1					62	620					68	680
1.2	1R2					75	750					82	820
1.3	1R3					91	910					100	101
1.4	1R4					110	111					120	121
1.5	1R5					130	131					150	151
1.6	1R6					160	161					180	181
1.7	17R					200	201					220	221
1.8	1R8					240	241					270	271
1.9	1R9					300	301					330	331
2.0	2R0					360	361					390	391
2.1	2R1					430	431					470	471
2.2	2R2					510	511					560	561
2.4	2R4					620	621					680	681
2.7	2R7					750	751					820	821
3.0	3R0					910	911	1 000	102				
3.3	3R3					1 100	112	1 200	122				
3.6	3R6					1 500	152	1 800	182				
3.9	3R9					2 200	222	2 700	272				
4.3	4R3					3 000	302	3 300	332				
4.7	4R7					3 900	392	4 700	472				
5.1	5R1					5 100	512	5 600	562				
5.6	5R6					6 800	682	8 200	822				
6.2	6R2					10 000	103						
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												
51	510												

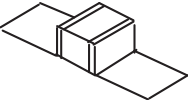
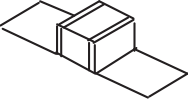
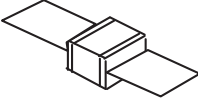
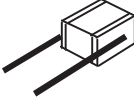
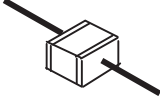
NB: special values, tolerances, higher WVDC and matching available, please consult factory.

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VIII. MECHANICAL CONFIGURATIONS

VIII.1. Lead/Ribbon and Wire Types

Configuration Type	Code	Description
	1	Micro-strip Ribbon
	1S	Short-strip Ribbon
	2	Axial 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_{certified} types to ensure that only non-magnetic materials are used.

Examples : 362 CLE 470 J1L
362 CLE 470 JC1L

any termination material could be used
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>CLX</i>	<i>CLE</i>
Micro-strip Ribbon	1	AVAILABLE	AVAILABLE
Short Micro-strip Ribbon	1S		AVAILABLE
Axial Ribbon	2		AVAILABLE
Radial Wire	6	AVAILABLE ⁽¹⁾	AVAILABLE ⁽¹⁾
Axial Wire	7	AVAILABLE ⁽¹⁾	AVAILABLE ⁽¹⁾

(1): these termination types are non ROHS.

VIII.3. Leads/Ribbons and Wires 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>CLX</i>	<i>CLE</i>
Micro-strip Ribbon	1	12.00 5.40	16.00 8.90
Short Micro-strip Ribbon	1S		8.50 8.90
Axial Ribbon	2		16.00 8.90
Radial Wire	6	30.00 0.60	30.00 0.90
Axial Wire	7	30.00 0.60	30.00 0.90

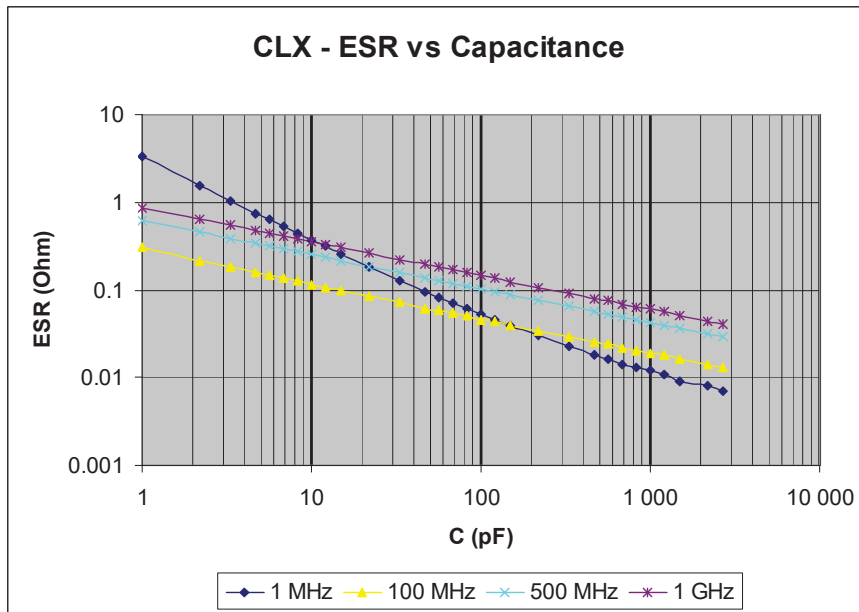
NB: dimensions are in mm.

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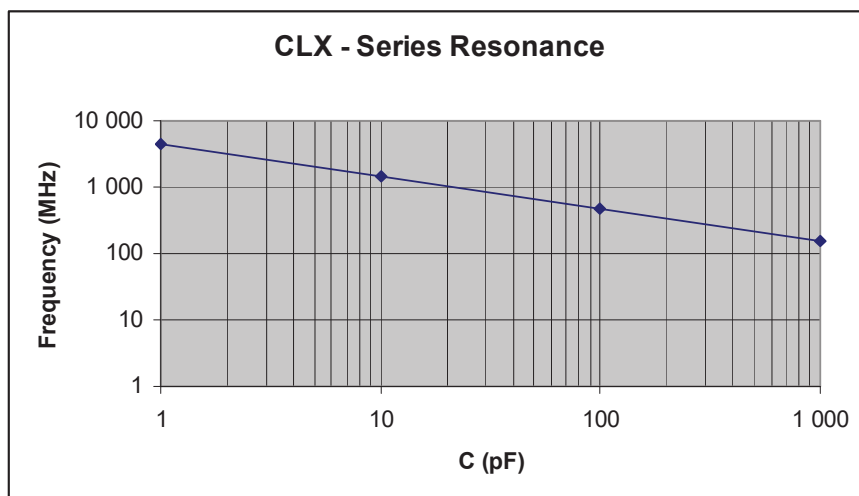
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IX. PERFORMANCE DATA

IX.1. ESR



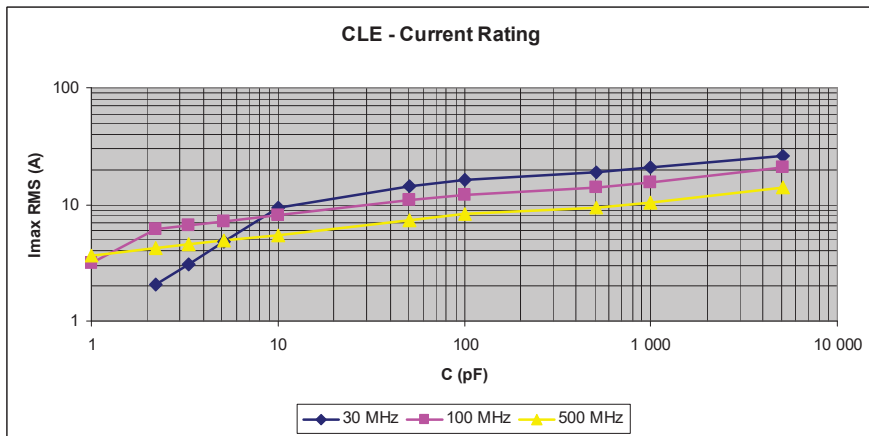
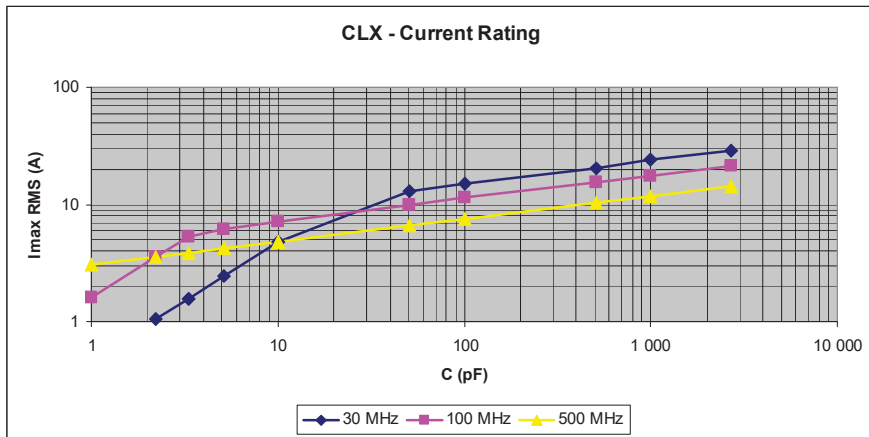
IX.2. Series Resonance Frequency



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IX.3. Current Rating



IX.4. Q Factor

