

CL - HIGH POWER, HIGH Q, NP0

RF POWER CAPACITORS, ULTRA STABILITY, RoHS COMPLIANT

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 +125°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	2225
	E	4040
	F	7065

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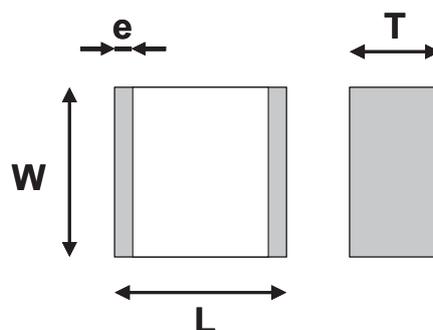
Termination Type	Code	CLX	CLE	CLF
Standard (tin-plated nickel)	S	AVAILABLE	AVAILABLE	AVAILABLE
Non-magnetic (silver-palladium)	A			AVAILABLE
Non-magnetic (tin-plated copper)	C	AVAILABLE	AVAILABLE	

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, 500V max.

IV. Outline dimensions

Parameter	X (2225)	E (4040)	F (7065)
Length (L)	6.20 mm + 0.30 / - 0.70 mm	10.50 mm + 0.30 / - 0.70 mm	17.80 ± 0.50 mm
Width (W)	6.60 ± 0.50 mm	9.50 ± 0.50 mm	16.00 ± 0.50 mm
Thickness (T)	3.80 mm (max.)	4.50 mm (max.)	4.00 mm (max.)
End-Band (e)	0.80 ± 0.60mm	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 F	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 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	500 or 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)		F (7065)		
		Standard	Extended	Standard	Extended			Standard	Extended	Standard	Extended			
1.0	1R0	2500V	3600V	3600V	7000V	56	560	2500V	3600V	3600V	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	1000	102					
3.3	3R3					1100	112	1200	122					
3.6	3R6					1500	152	1800	182					
3.9	3R9					2200	222	2700	272					
4.3	4R3					3000	302	3300	332					
4.7	4R7	3900	392	4700	472									
5.1	5R1	5100	512	5600	562									
5.6	5R6	6800	682	8200	822									
6.2	6R2	10000	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.

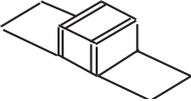
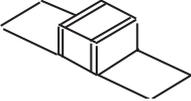
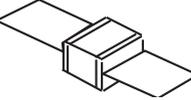
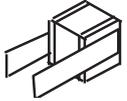
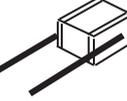
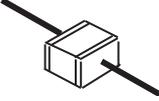
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VIII. Mechanical Configurations

VIII.1. Lead/Ribbon and Wire Types

Configuration Type	Code	Description
	1	Micro-strip Ribbon
	1S	Short-strip Ribbon
	2	Axial Ribbon
	3	Radial 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 any termination material could be used
 362 CLE 470 JC1L only non-magnetic termination materials could be used

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VIII.2. Lead/Ribbon and Wire Matrix

Termination Type	Code	CLX	CLE	CLF
Micro-strip Ribbon	1	AVAILABLE	AVAILABLE	AVAILABLE
Short Micro-strip Ribbon	1S		AVAILABLE	
Axial Ribbon	2		AVAILABLE	
Radial Ribbon	3		AVAILABLE	
Radial Wire	6	AVAILABLE ⁽¹⁾	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.

Termination Type	Code	CLX	CLE	CLF
Micro-strip Ribbon	1	12.00 5.40	16.00 8.90	6.00 15.00
Short Micro-strip Ribbon	1S		8.50 8.90	
Axial Ribbon	2		16.00 8.90	
Radial Ribbon	3		19.00 8.90	
Radial Wire	6	30.00 0.60	30.00 0.90	30.00 0.90
Axial Wire	7	30.00 0.60	30.00 0.90	

NB: dimensions are in mm.

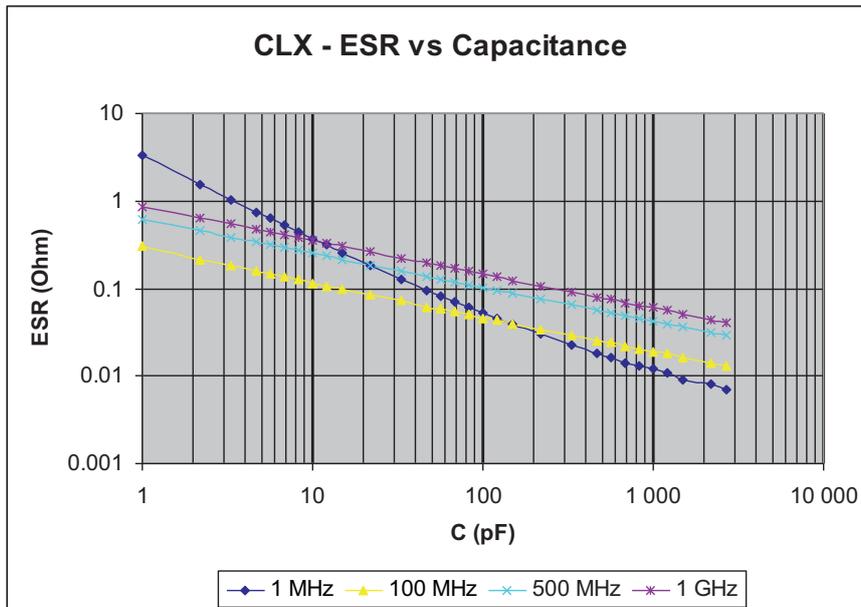
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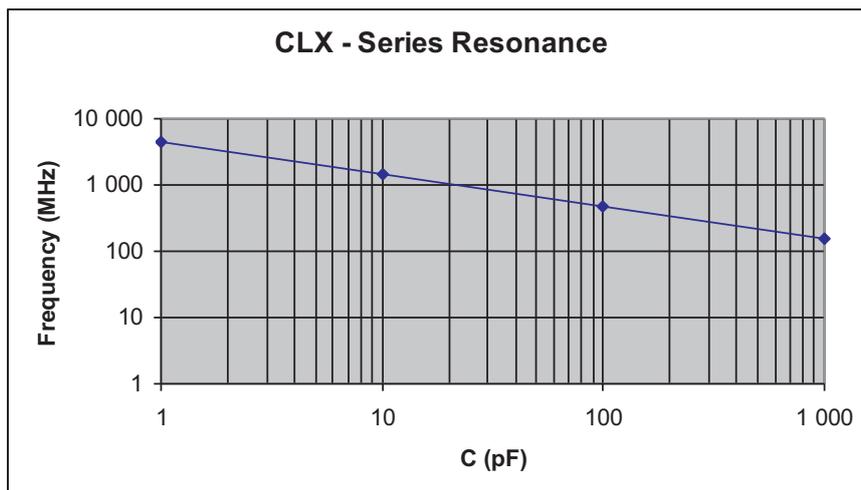
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IX. Performance Data

IX.1. ESR



IX.2. Series Resonance Frequency

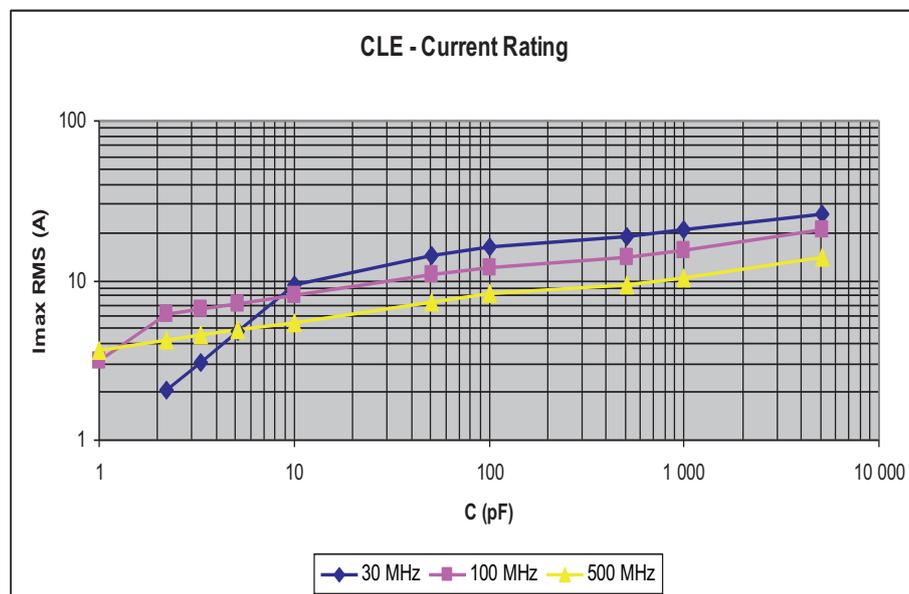
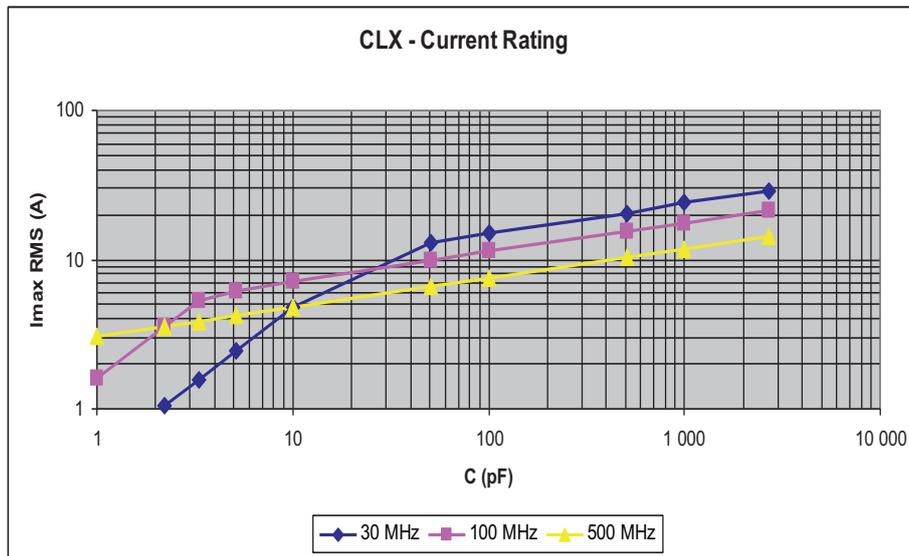


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IX.3. Current Rating

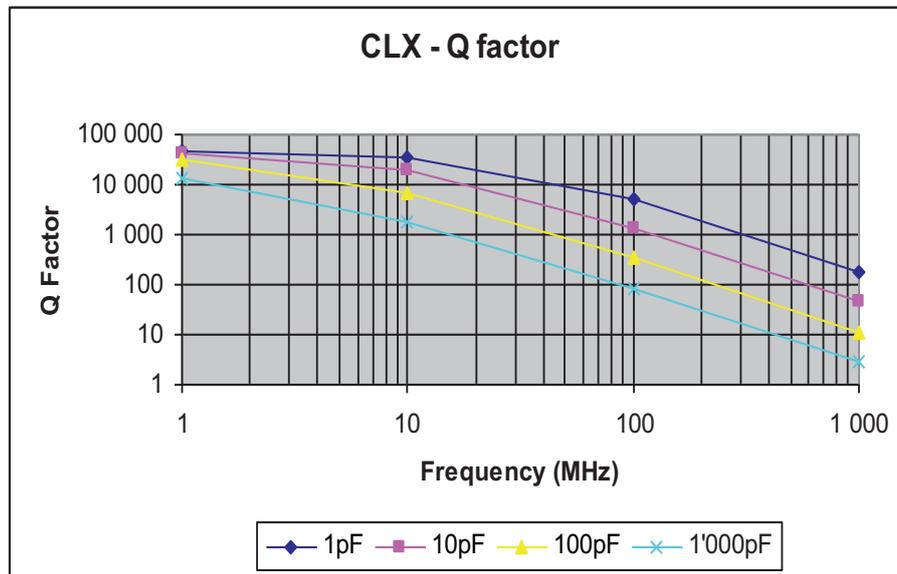


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IX.4. Q Factor



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