

RF/Microwave C0G (NP0) Capacitors (RoHS)

Ultra Low ESR, “U” Series, C0G (NP0) Chip Capacitors

GENERAL INFORMATION

“U” Series capacitors are C0G (NP0) chip capacitors specially designed for “Ultra” low ESR for applications in the communications market. Max ESR and effective capacitance

are met on each value producing lot to lot uniformity. Sizes available are EIA chip sizes 0402, 0603, 0805, and 1210.

DIMENSIONS: inches (millimeters)

	0402	0603	0805	1210	
					inches (mm)
Size	A	B	C	D	E
0402	0.039±0.004 (1.00±0.1)	0.020±0.004 (0.50±0.1)	0.022 (0.55mm) max	N/A	N/A
0603	0.060±0.010 (1.52±0.25)	0.030±0.010 (0.76±0.25)	0.036 (0.91mm) max	0.010±0.005 (0.25±0.13)	0.030 (0.76) min
0805	0.079±0.008 (2.01±0.2)	0.049±0.008 (1.25±0.2)	0.040±0.005 (1.02±0.127)	0.020±0.010 (0.51±0.255)	0.020 (0.51) min
1210	0.126±0.008 (3.2±0.2)	0.098±0.008 (2.49±0.2)	0.050±0.005 (1.27±0.127)	0.025±0.015 (0.635±0.381)	0.040 (1.02) min

HOW TO ORDER

0805	1	U	100	J	A	T	2	A
Case Size 0402 0603 0805 1210	Voltage Code 3 = 25V 5 = 50V 1 = 100V 2 = 200V	Dielectric = Ultra Low ESR	Capacitance EIA Capacitance Code in pF. First two digits = significant figures or “R” for decimal place. Third digit = number of zeros or after “R” significant figures.	Capacitance Tolerance Code B = ±0.1pF C = ±0.25pF D = ±0.5pF F = ±1% G = ±2% J = ±5% K = ±10% M = ±20%	Failure Rate Code A = Not Applicable	Termination T = Plated Ni and Sn	Packaging Code 2 = 7" Reel 4 = 13" Reel	Special Code A = Standard



NOTE: Contact factory for availability of Termination and Tolerance Options for Specific Part Numbers.

ELECTRICAL CHARACTERISTICS

Capacitance Values and Tolerances:

Size 0402 - 0.2 pF to 30 pF @ 1 MHz
Size 0603 - 1.0 pF to 100 pF @ 1 MHz
Size 0805 - 1.6 pF to 160 pF @ 1 MHz
Size 1210 - 2.4 pF to 1000 pF @ 1 MHz

Temperature Coefficient of Capacitance (TC):

0±30 ppm/°C (-55° to +125°C)

Insulation Resistance (IR):

10¹² Ω min. @ 25°C and rated WVDC
10¹¹ Ω min. @ 125°C and rated WVDC

Working Voltage (WVDC):

Size Working Voltage
0402 - 100, 50, 25 WVDC
0603 - 200, 100, 50 WVDC
0805 - 200, 100 WVDC
1210 - 200, 100 WVDC

Dielectric Working Voltage (DWV):

250% of rated WVDC

Equivalent Series Resistance Typical (ESR):

0402 - See Performance Curve, page 9
0603 - See Performance Curve, page 9
0805 - See Performance Curve, page 9
1210 - See Performance Curve, page 9

Marking: Laser marking EIA J marking standard (except 0603) (capacitance code and tolerance upon request).

MILITARY SPECIFICATIONS

Meets or exceeds the requirements of MIL-C-55681

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CAPACITANCE RANGE

Cap (pF)	Available	Size			
	Tolerance	0402	0603	0805	1210
0.2	B, C	100V	N/A	N/A	N/A
0.3					
0.4					
0.5	B, C				
0.6	B, C, D				
0.7					
0.8					
0.9	B, C, D				

Cap (pF)	Available	Size			
	Tolerance	0402	0603	0805	1210
1.0	B, C, D	100V	200V	200V	200V
1.1					
1.2					
1.3					
1.4					
1.5					
1.6					
1.7					
1.8					
1.9					
2.0					
2.1					
2.2					
2.4					
2.7					
3.0					
3.3					
3.6					
3.9					
4.3					
4.7					
5.1					
5.6					
6.2	B, C, D				
6.8	B, C, J, K, M				

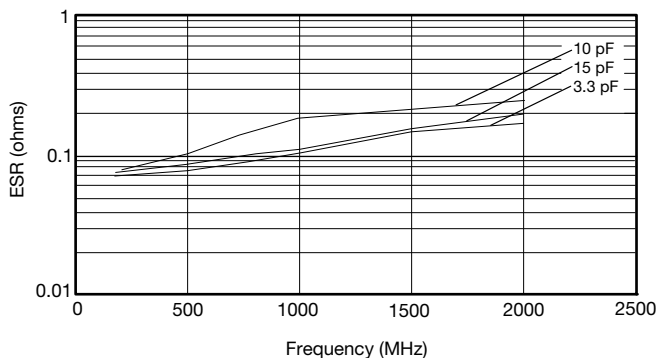
Cap (pF)	Available	Size			
	Tolerance	0402	0603	0805	1210
7.5	B, C, J, K, M	100V	200V	200V	200V
8.2					
9.1	B, C, J, K, M				
10	F, G, J, K, M	100V			
11		50V			
12					
13					
15					
18					
20			200V		
22			100V		
24					
27					
30			50V		
33			N/A		
36					
39					
43					
47					
51					
56					
68					
75					
82					
91					

Cap (pF)	Available	Size			
	Tolerance	0402	0603	0805	1210
100	F, G, J, K, M	N/A	100V	200V	200V
110			50V		
120			50V		
130			N/A		
140				200V	100V
150				100V	
160				N/A	
180					
200					
220					
270					
300					
330					
360					
390					
430					
470					
510					
560					
620					
680					
750					
820					
910					
1000	F, G, J, K, M				

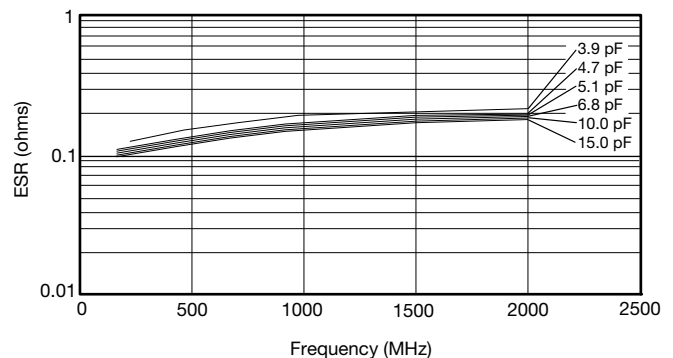


ULTRA LOW ESR, "U" SERIES

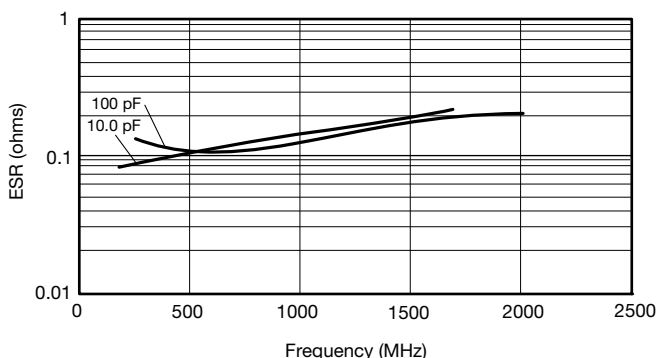
TYPICAL ESR vs. FREQUENCY
0402 "U" SERIES



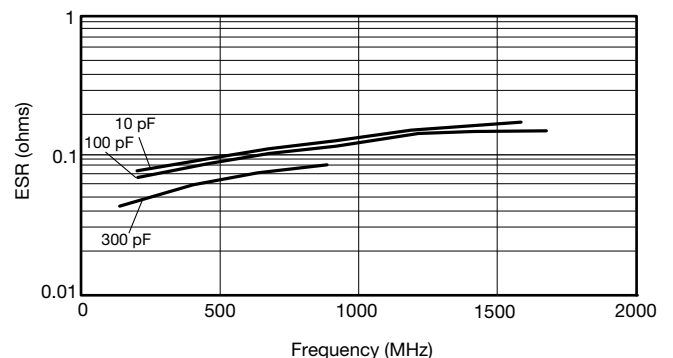
TYPICAL ESR vs. FREQUENCY
0603 "U" SERIES



TYPICAL ESR vs. FREQUENCY
0805 "U" SERIES



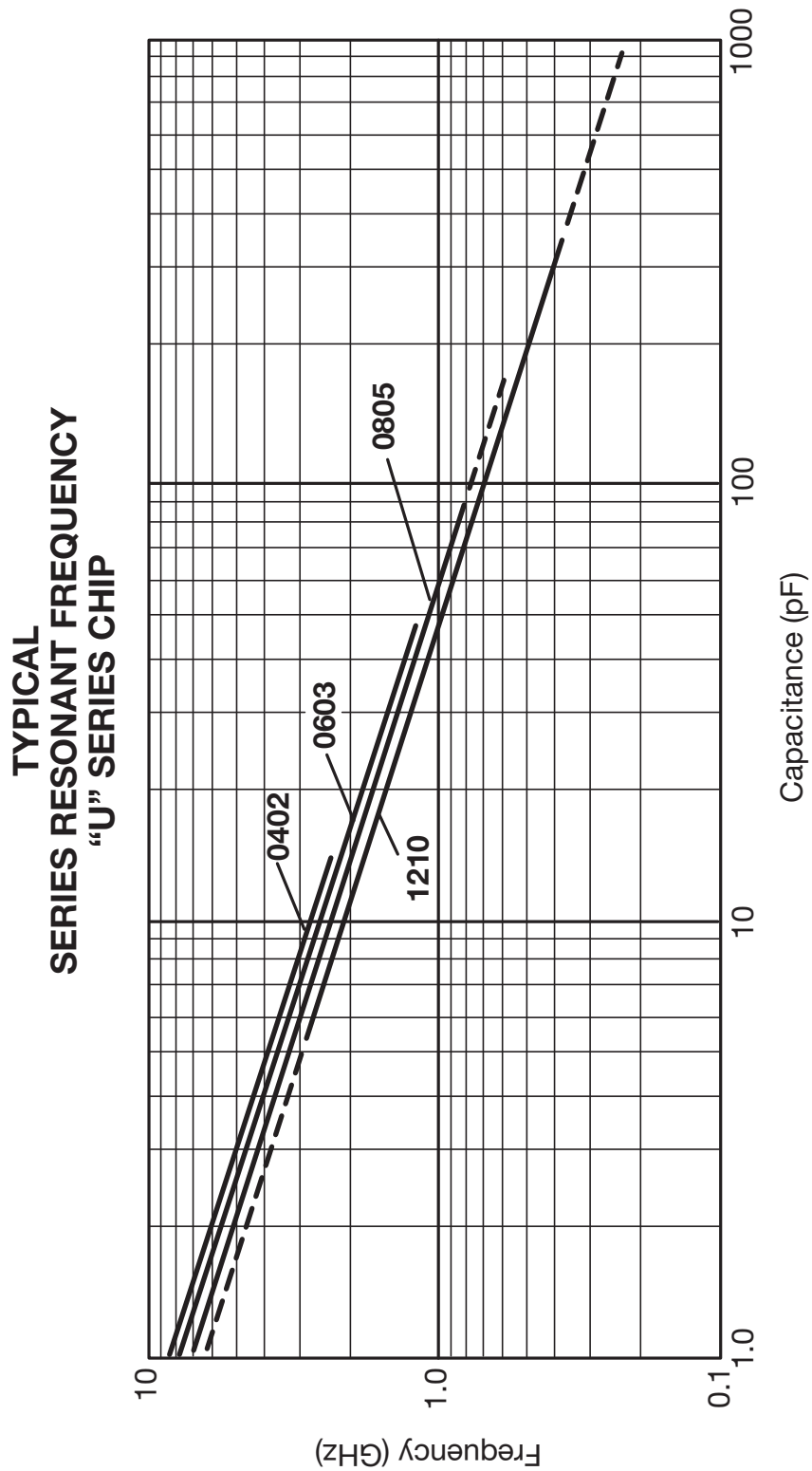
TYPICAL ESR vs. FREQUENCY
1210 "U" SERIES



ESR Measured on the Boonton 34A

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Mouser Electronics

Authorized Distributor

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AVX:

[12101U2R0CAT2A](#) [12101U3R3CAT2A](#) [12101U5R6BAT2A](#) [12101U8R2CAT2A](#) [06032U5R6CAT2A](#)
[06032U6R8BAT2A](#) [06032U8R2BAT2A](#) [06032U8R2CAT2A](#) [06035U200GAT2A](#) [06035U3R3BAT2A](#)
[08051U100CAT2A](#) [08051U100JAT2A](#) [08051U1R0BAT2A](#) [08051U1R2BAT2A](#) [08051U1R5CAT2A](#) [08051U270JAT2A](#)
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[04023U200JAT2A](#) [06031U470FAT2A](#) [06031U220FAT2A](#) [08052U270GAT2A](#) [08052U4R7BAT2A](#) [08051U1R2CAT2A](#)
[04023U4R7BAT2A](#) [08052U150JAT2A](#) [08051U1R8CAT2A](#) [08052U680GAT2A](#) [06032U1R5BAT2A](#)
[06035U390JAT2A](#) [08051U100FAT2A](#) [08051U101JAT2A](#) [08051U101FAT2A](#) [08051U101GAT2A](#) [08051U101KAT2A](#)
[08052U510GAT2A](#) [08051U151KAT2A](#) [04025U1R8BAT2A](#) [08051U150JAT2A](#) [08052U820GAT2A](#) [04023U5R6BAT2A](#)
[06032U3R3CAT2A](#) [08051U2R7BAT2A](#) [08052U180GAT2A](#) [06035U100FAT2A](#) [06035U2R0BAT2A](#)
[06032U4R7CAT2A](#) [06035U100JAT2A](#) [08051U151GAT2A](#) [08055U130GAT2A](#) [06031U3R6DAT9A](#) [08051U620FAT2A](#)
[08051U150FAT2A](#) [08051U120FAT2A](#) [08051U820FAT2A](#) [12102U560JAT2A](#) [08051U470FAT2A](#) [08051U510FAT2A](#)
[08051U9R1BAT2A](#) [04023U2R0BAT2A](#) [06035U820JAT2A](#) [04025U3R9BAT2A](#) [08052U390GAT2A](#)
[08051U151FAT2A](#) [06031U360GAT9A](#) [06031U300GAT9A](#) [06031U270GAT9A](#) [06031U220GAT9A](#) [06031U470GAT9A](#)
[08052U750GAT2A](#) [04023U0R3BAT2A](#) [04023U0R4BAT2A](#) [04023U0R7BAT2A](#) [04023U100FAT2A](#)
[04023U110FAT2A](#) [04023U1R1BAT2A](#) [04023U1R1CAT2A](#) [04023U1R3BAT2A](#) [04023U1R3CAT2A](#)
[04023U1R4BAT2A](#) [04023U1R7BAT2A](#) [04023U1R8CAT2A](#) [04023U1R9BAT2A](#) [04023U2R1BAT2A](#)
[04023U2R4BAT2A](#) [04023U3R6CAT2A](#) [04025U0R6BAT2A](#) [04025U0R8BAT2A](#) [04025U0R9BAT2A](#)
[04025U100JAT2A](#) [04025U110FAT2A](#) [04025U110JAT2A](#) [04025U120JAT2A](#) [04025U150GAT2A](#) [04025U150JAT2A](#)
[04025U180GAT2A](#) [04025U1R0CAT2A](#)