

RF/Microwave C0G (NP0) Capacitors **AVX**

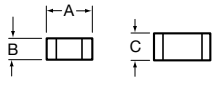
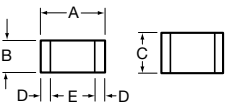
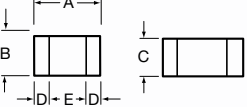
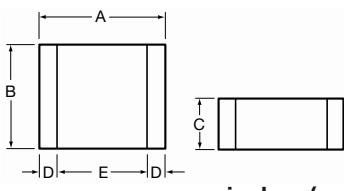
Ultra Low ESR, “U” Series, C0G (NP0) Chip Capacitors

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 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)	0.024 (0.6) max	N/A	N/A
0603	0.060±0.010 (1.52±0.25)	0.030±0.010 (0.76±0.25)	0.036 (0.91) 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±0.254)	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 Tin	Packaging Code 2 = 7" Reel 4 = 13" Reel 9 = Bulk	Special Code A = Standard

ELECTRICAL CHARACTERISTICS

Capacitance Values and Tolerances:

Size 0402 - 0.2 pF to 22 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 - 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 106
0603 - See Performance Curve, page 106
0805 - See Performance Curve, page 106
1210 - See Performance Curve, page 106

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 Tolerance	Size
0.2	B, C	0402
0.3	B, C	0603
0.4	B, C	0805
0.5	B, C	1210
0.6	B, C, D	
0.7	B, C, D	
0.8	B, C, D	
0.9	B, C, D	

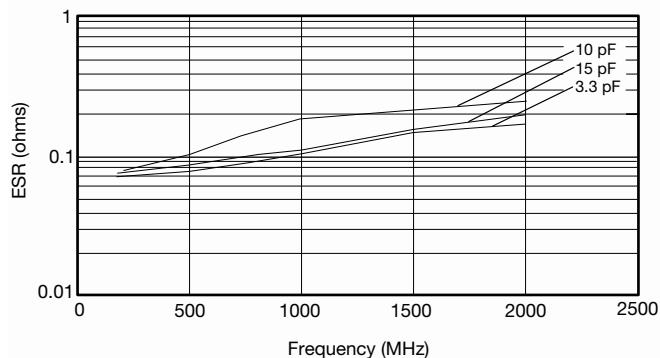
Cap (pF)	Available Tolerance	Size
1.0	B, C, D	0402
1.1	B, C, D	0603
1.2	B, C, D	0805
1.3	B, C, D	1210
1.4	B, C, D	
1.5	B, C, D	
1.6	B, C, D	
1.7	B, C, D	
1.8	B, C, D	
1.9	B, C, D	
2.0	B, C, D	
2.1	B, C, D	
2.2	B, C, D	
2.4	B, C, D	
2.7	B, C, D	
3.0	B, C, D	
3.3	B, C, D	
3.6	B, C, D	
3.9	B, C, D	
4.3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

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

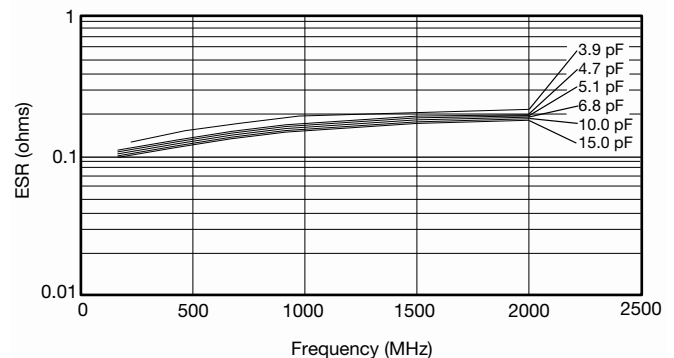
Cap (pF)	Available Tolerance	Size
100	F, G, J, K, M	0402
110	F, G, J, K, M	0603
120	F, G, J, K, M	0805
130	F, G, J, K, M	1210
140	F, G, J, K, M	
150	F, G, J, K, M	
160	F, G, J, K, M	
180	F, G, J, K, M	
200	F, G, J, K, M	
220	F, G, J, K, M	
270	F, G, J, K, M	
300	F, G, J, K, M	
330	F, G, J, K, M	
360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

ULTRA LOW ESR, “U” SERIES

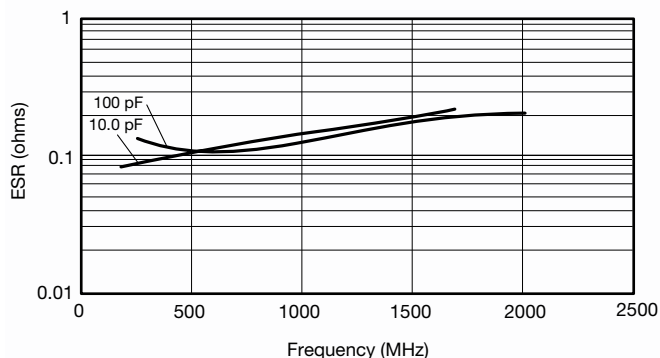
TYPICAL ESR vs. FREQUENCY
0402 “U” SERIES



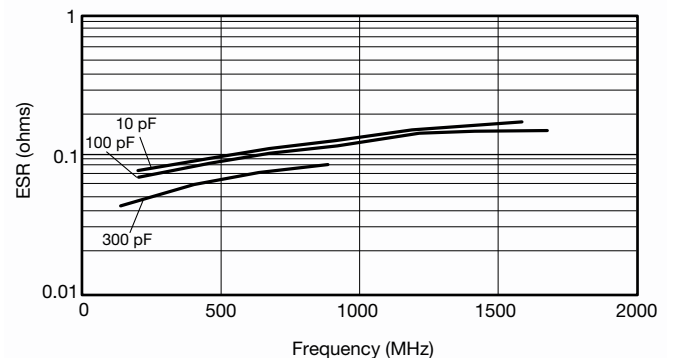
TYPICAL ESR vs. FREQUENCY
0603 “U” SERIES



TYPICAL ESR vs. FREQUENCY
0805 “U” SERIES



TYPICAL ESR vs. FREQUENCY
1210 “U” SERIES



ESR Measured on the Boonton 34A

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TYPICAL
SERIES RESONANT FREQUENCY
“U” SERIES CHIP

