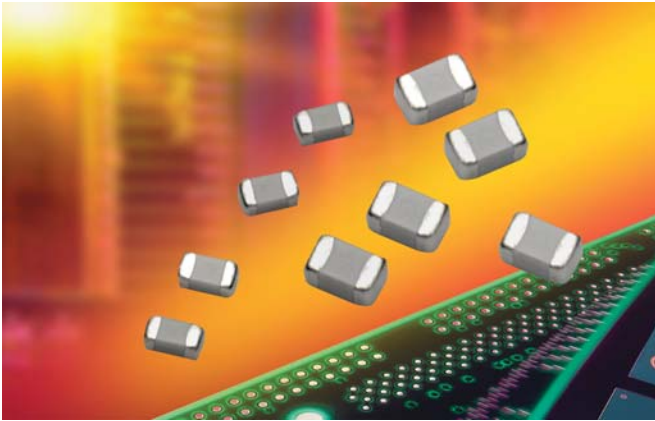


# MK Series Capacitors

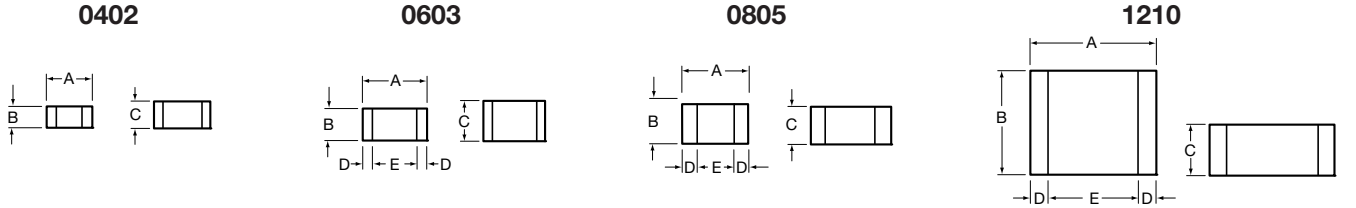
## Ultra Low ESR, C0G (NP0) Chip Capacitors



### GENERAL INFORMATION

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)



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

<p><b>MK05</b></p> <p><b>Case Size</b>                  MK02 = 0402                  MK03 = 0603                  MK05 = 0805                  MK10 = 1210</p>	<p><b>V</b></p> <p><b>Voltage Code</b>                  5 = 50V                  1 = 100V                  2 = 200V                  V = 250V                  7 = 500V</p>	<p><b>7</b></p> <p><b>Dielectric = Ultra Low ESR</b></p>	<p><b>100</b></p> <p><b>Capacitance</b>                  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.</p>	<p><b>J</b></p> <p><b>Capacitance Tolerance Code</b>                  B = ±0.1pF                  C = ±0.25pF                  D = ±0.5pF                  F = ±1%                  G = ±2%                  J = ±5%                  K = ±10%                  M = ±20%</p>	<p><b>A</b></p> <p><b>Failure Rate Code</b>                  A = Not Applicable</p>	<p><b>T</b></p> <p><b>Termination</b>                  T = 100% Tin</p>	<p><b>2</b></p> <p><b>Packaging Code</b>                  2 = 7" Reel                  4 = 13" Reel                  9 = Bulk</p>	<p><b>A</b></p> <p><b>Special Code</b>                  A = Standard</p>
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Please select correct termination style

# MK Series Capacitors



## Ultra Low ESR, C0G (NP0) Chip Capacitors

### ELECTRICAL CHARACTERISTICS

**Capacitance Values and Tolerances:**

- Size MK02 - 0.2 pF to 30 pF @ 1 MHz
- Size MK03 - 0.2 pF to 120 pF @ 1 MHz
- Size MK05 - 1.0 pF to 160 pF @ 1 MHz
- Size MK10 - 1.0 pF to 1000 pF @ 1 MHz

**Temperature Coefficient of Capacitance (TC):**

0±30 ppm/°C (-55° to +125°C)

**Insulation Resistance (IR):**

- 10<sup>12</sup> Ω min. @ 25°C and rated WVDC
- 10<sup>11</sup> Ω min. @ 125°C and rated WVDC

**Working Voltage (WVDC):**

- Size Working Voltage
- MK02 - 200, 100, 50 WVDC
- MK03 - 250, 200, 100, 50 WVDC
- MK05 - 250 WVDC
- MK10 - 500, 200, 100 WVDC

**Dielectric Working Voltage (DWV):**

250% of rated WVDC

**Equivalent Series Resistance Typical (ESR):**

- MK02 - See Performance Curve, page 3
- MK03 - See Performance Curve, page 3
- MK05 - See Performance Curve, page 3
- MK10 - See Performance Curve, page 3

**MILITARY SPECIFICATIONS**

Meets or exceeds the requirements of MIL-C-55681

### CAPACITANCE RANGE

Cap (pF)	Available Tolerance	Size			
		MK02	MK03	MK05	MK10
0.2	B,C	↓	↓	N/A	N/A
0.3	↓	↓	↓	↓	↓
0.4	B,C	↓	↓	↓	↓
0.5	B,C,D	↓	↓	↓	↓
0.6	↓	↓	↓	↓	↓
0.7	B,C,D	↓	↓	↓	↓
0.8	↓	↓	↓	↓	↓
0.9	B,C,D	↓	↓	↓	↓

Cap (pF)	Available Tolerance	Size			
		MK02	MK03	MK05	MK10
1.0	B,C,D	↓	↓	↓	↓
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 Tolerance	Size			
		MK02	MK03	MK05	MK10
7.5	B,C,J,K,M	↓	↓	↓	↓
8.2	↓	↓	↓	↓	↓
9.1	B,C,J,K,M	↓	↓	↓	↓
10	F,G,J,K,M	↓	↓	↓	↓
11	↓	↓	↓	↓	↓
12	↓	↓	↓	↓	↓
13	↓	↓	↓	↓	↓
15	↓	↓	↓	↓	↓
18	↓	↓	↓	↓	↓
20	↓	↓	↓	↓	↓
22	↓	↓	↓	↓	↓
24	↓	↓	↓	↓	↓
27	↓	↓	↓	↓	↓
30	↓	↓	↓	↓	↓
33	↓	↓	↓	↓	↓
36	↓	↓	↓	↓	↓
39	↓	↓	↓	↓	↓
43	↓	↓	↓	↓	↓
47	↓	↓	↓	↓	↓
51	↓	↓	↓	↓	↓
56	↓	↓	↓	↓	↓
68	↓	↓	↓	↓	↓
75	↓	↓	↓	↓	↓
82	↓	↓	↓	↓	↓
91	↓	↓	↓	↓	↓

Cap (pF)	Available Tolerance	Size			
		MK02	MK03	MK05	MK10
100	F,G,J,K,M	↓	↓	↓	↓
110	↓	↓	↓	↓	↓
120	↓	↓	↓	↓	↓
130	↓	↓	↓	↓	↓
140	↓	↓	↓	↓	↓
150	↓	↓	↓	↓	↓
160	↓	↓	↓	↓	↓
180	↓	↓	↓	↓	↓
200	↓	↓	↓	↓	↓
220	↓	↓	↓	↓	↓
270	↓	↓	↓	↓	↓
300	↓	↓	↓	↓	↓
330	↓	↓	↓	↓	↓
360	↓	↓	↓	↓	↓
390	↓	↓	↓	↓	↓
430	↓	↓	↓	↓	↓
470	↓	↓	↓	↓	↓
510	↓	↓	↓	↓	↓
560	↓	↓	↓	↓	↓
620	↓	↓	↓	↓	↓
680	↓	↓	↓	↓	↓
750	↓	↓	↓	↓	↓
820	↓	↓	↓	↓	↓
910	↓	↓	↓	↓	↓
1000	F,G,J,K,M	↓	↓	↓	↓



Please select correct termination style

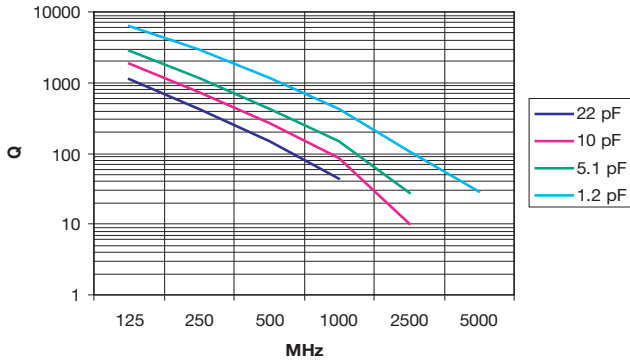


# MK Series Capacitors

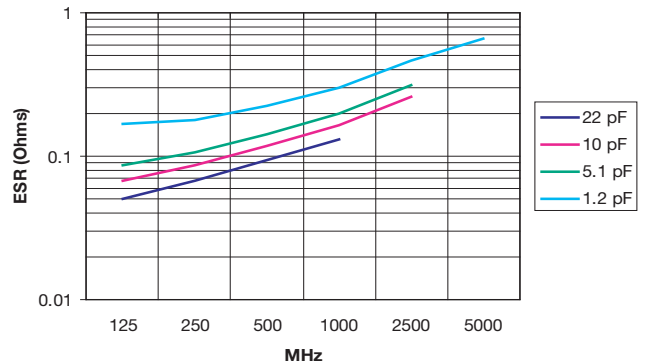


## Ultra Low ESR, C0G (NP0) Chip Capacitors

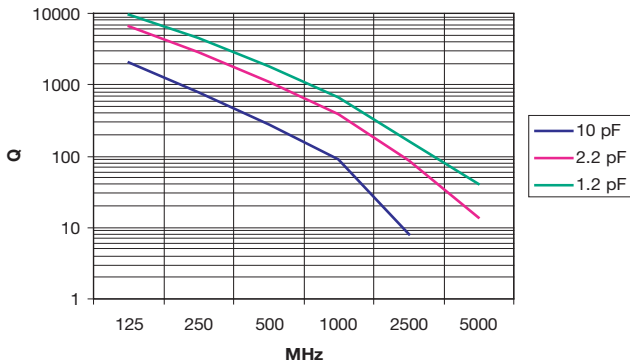
**MK02 Q vs Frequency  
0402**



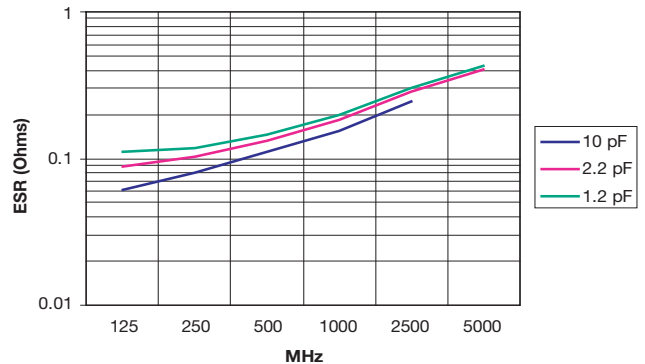
**MK02 ESR vs Frequency  
0402**



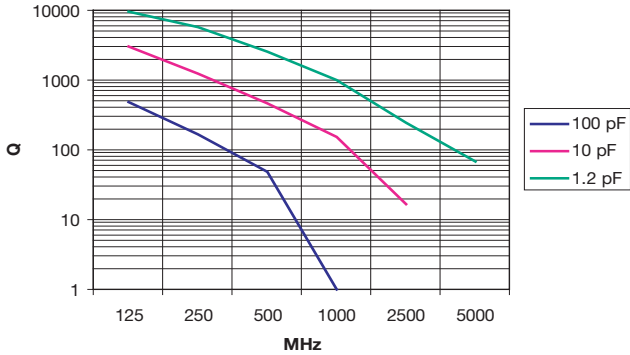
**MK03 Q vs Frequency  
0603**



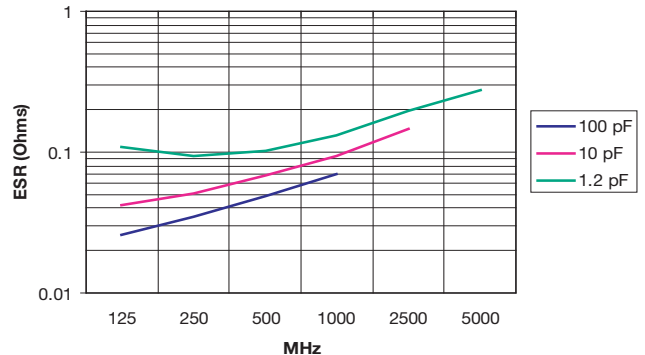
**MK03 ESR vs Frequency  
0603**



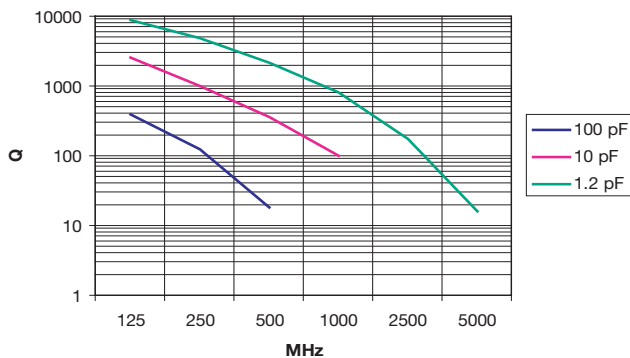
**MK05 Q vs Frequency  
0805**



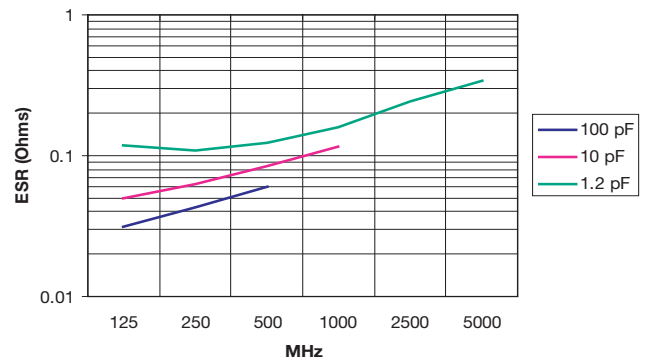
**MK05 ESR vs Frequency  
0805**



**MK10 Q vs Frequency  
1210**



**MK10 ESR vs Frequency  
1210**



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