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Jameco Part Number 1035061

RF/Microwave COG (NP0) Capacitors (RoHS)



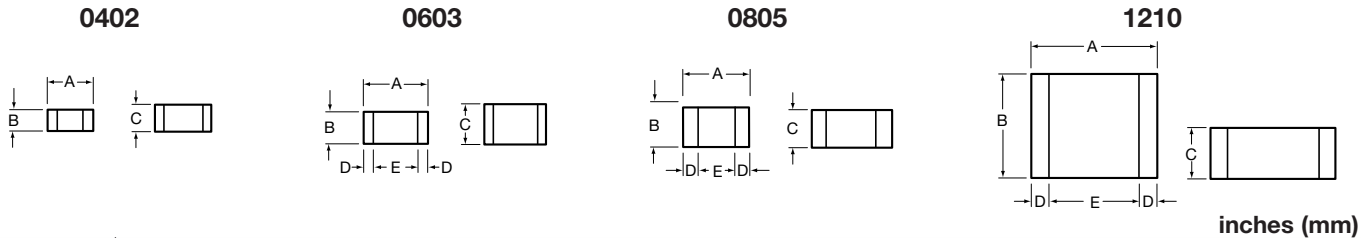
Ultra Low ESR, "U" Series, COG (NP0) Chip Capacitors

GENERAL INFORMATION

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

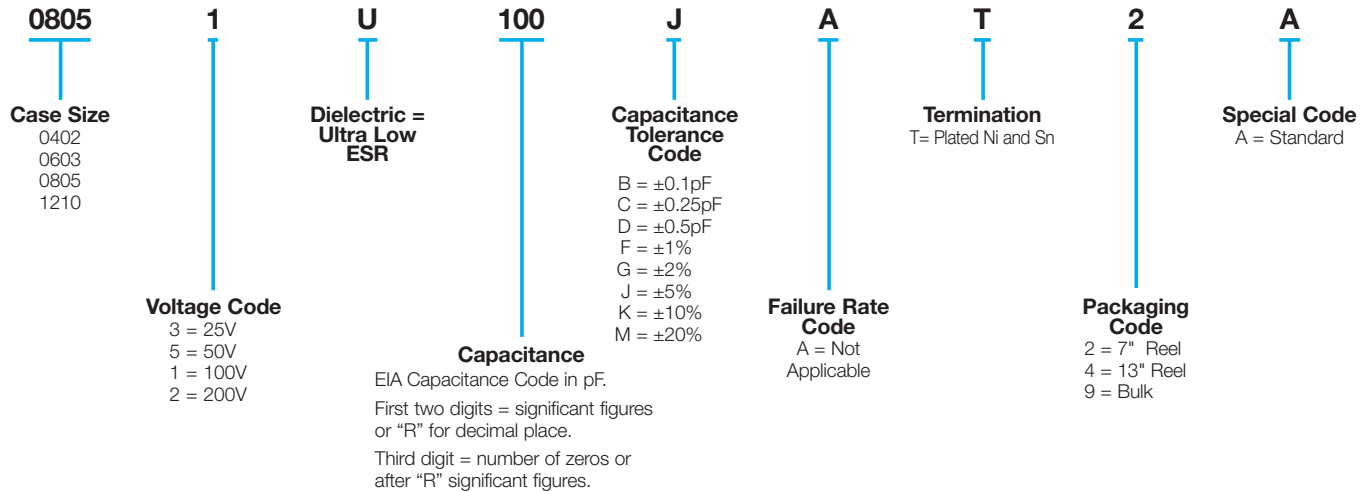
are met on each value producing lot to lot uniformity. Sizes available are EIA chip sizes 0603, 0805, and 1210.

DIMENSIONS: inches (millimeters)



| 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



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 (DWW):

250% of rated WVDC

Equivalent Series Resistance Typical (ESR):

- 0402 - See Performance Curve, page 110
- 0603 - See Performance Curve, page 110
- 0805 - See Performance Curve, page 110
- 1210 - See Performance Curve, page 110

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



RF/Microwave COG (NP0) Capacitors (RoHS)



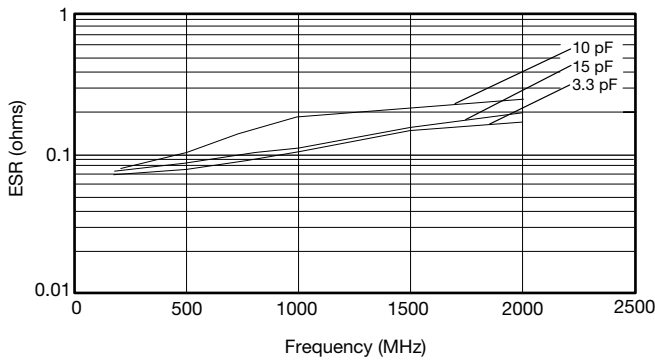
Ultra Low ESR, "U" Series, COG (NP0) Chip Capacitors

CAPACITANCE RANGE

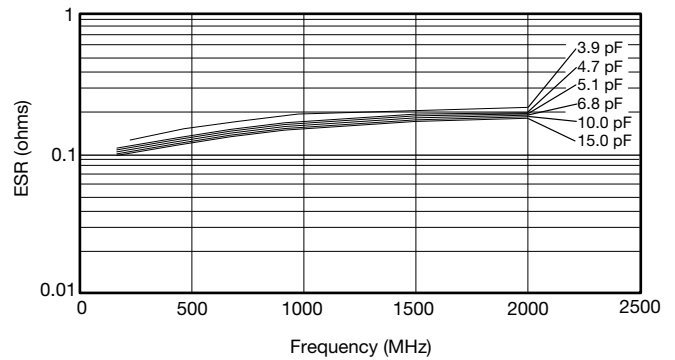
| Cap (pF) | Available Tolerance | Size | | | | Cap (pF) | Available Tolerance | Size | | | | Cap (pF) | Available Tolerance | Size | | | | Cap (pF) | Available Tolerance | Size | | | | | |
|----------|---------------------|------|------|------|------|----------|---------------------|------|------|------|------|----------|---------------------|------|------|------|------|----------|---------------------|------|------|------|------|--|--|
| | | 0402 | 0603 | 0805 | 1210 | | | 0402 | 0603 | 0805 | 1210 | | | 0402 | 0603 | 0805 | 1210 | | | 0402 | 0603 | 0805 | 1210 | | |
| 0.2 | B,C | 50V | N/A | N/A | N/A | 1.0 | B,C,D | 50V | 200V | 200V | 200V | 7.5 | B,C,J,K,M | 50V | 200V | 200V | 200V | 100 | F,G,J,K,M | N/A | 100V | 200V | 200V | | |
| 0.3 | B,C | | | | | 1.1 | | | | | | 8.2 | B,C,J,K,M | | | | | 110 | | | 50V | 200V | 200V | | |
| 0.4 | B,C | | | | | 1.2 | | | | | | 9.1 | B,C,J,K,M | | | | | 120 | | | 50V | 200V | 200V | | |
| 0.5 | B,C | | | | | 1.3 | | | | | | 10 | F,G,J,K,M | | | | | 130 | | | N/A | 200V | 200V | | |
| 0.6 | B,C,D | | | | | 1.4 | | | | | | 11 | | | | | | 140 | | | | 100V | 200V | | |
| 0.7 | B,C,D | | | | | 1.5 | | | | | | 12 | | | | | | 150 | | | | 100V | 200V | | |
| 0.8 | B,C,D | | | | | 1.6 | | | | | | 13 | | | | | | 160 | | | | 100V | 200V | | |
| 0.9 | B,C,D | | | | | 1.7 | | | | | | 15 | | | | | | 180 | | | | N/A | 200V | | |
| | | | | | | 1.8 | | | | | | 18 | | | | | | 200 | | | | | | | |
| | | | | | | 1.9 | | | | | | 20 | | | | | | 220 | | | | | | | |
| | | | | | | 2.0 | | | | | | 22 | | | | | | 270 | | | | | | | |
| | | | | | | 2.1 | | | | | | 24 | | | | | | 300 | | | | | | | |
| | | | | | | 2.2 | | | | | | 27 | | | | | | 330 | | | | | | | |
| | | | | | | 2.4 | | | | | | 30 | | | | | | 360 | | | | | | | |
| | | | | | | 2.7 | | | | | | 33 | | | | | | 390 | | | | | | | |
| | | | | | | 3.0 | | | | | | 36 | | | | | | 430 | | | | | | | |
| | | | | | | 3.3 | | | | | | 39 | | | | | | 470 | | | | | | | |
| | | | | | | 3.6 | | | | | | 43 | | | | | | 510 | | | | | | | |
| | | | | | | 3.9 | | | | | | 47 | | | | | | 560 | | | | | | | |
| | | | | | | 4.3 | | | | | | 51 | | | | | | 620 | | | | | | | |
| | | | | | | 4.7 | | | | | | 56 | | | | | | 680 | | | | | | | |
| | | | | | | 5.1 | | | | | | 68 | | | | | | 750 | | | | | | | |
| | | | | | | 5.6 | | | | | | 75 | | | | | | 820 | | | | | | | |
| | | | | | | 6.2 | B,C,D | | | | | 82 | | | | | | 910 | | | | | | | |
| | | | | | | 6.8 | B,C,J,K,M | | | | | 91 | | | | | | 1000 | F,G,J,K,M | | | | | | |

ULTRA LOW ESR, "U" SERIES

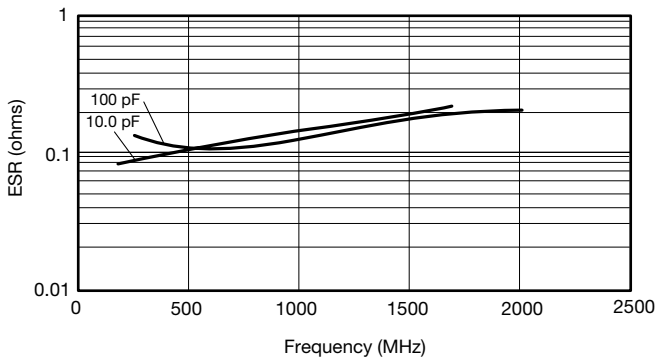
TYPICAL ESR vs. FREQUENCY
0402 "U" SERIES



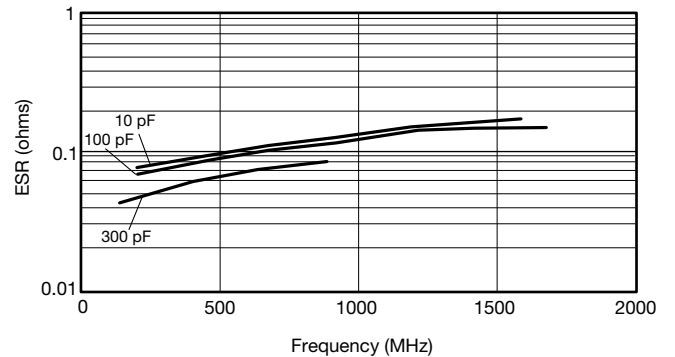
TYPICAL ESR vs. FREQUENCY
0603 "U" SERIES



TYPICAL ESR vs. FREQUENCY
0805 "U" SERIES



TYPICAL ESR vs. FREQUENCY
1210 "U" SERIES



ESR Measured on the Boonton 34A

7

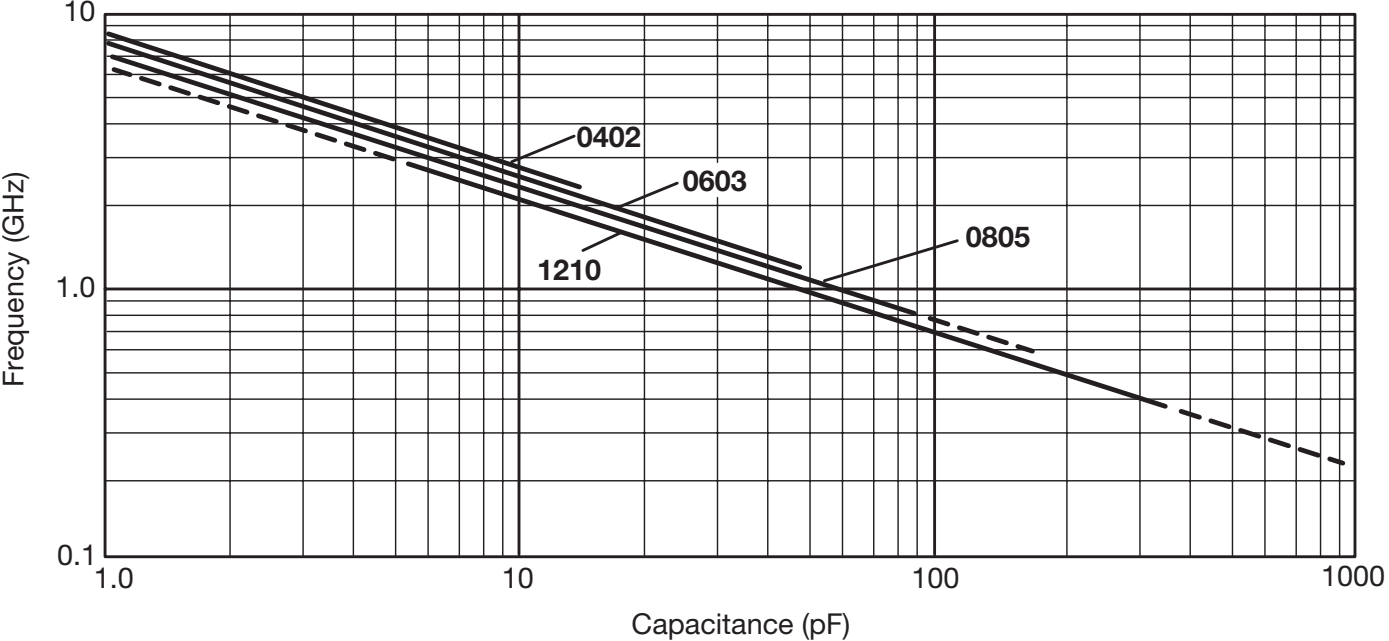


RF/Microwave C0G (NP0) Capacitors (RoHS)



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

TYPICAL
SERIES RESONANT FREQUENCY
"U" SERIES CHIP



RF/Microwave C0G (NP0) Capacitors (Sn/Pb)



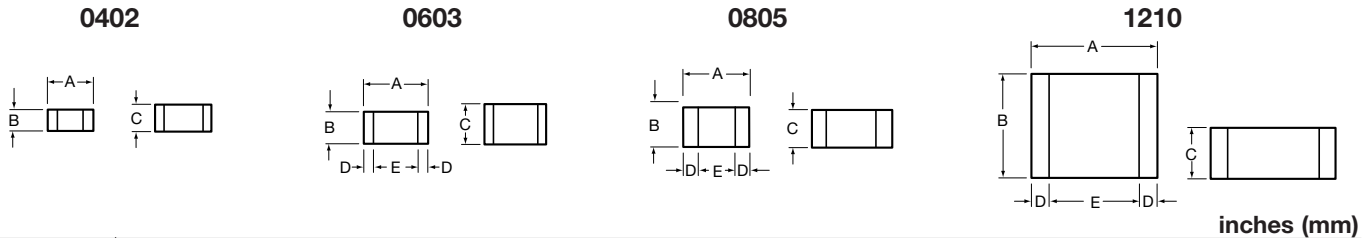
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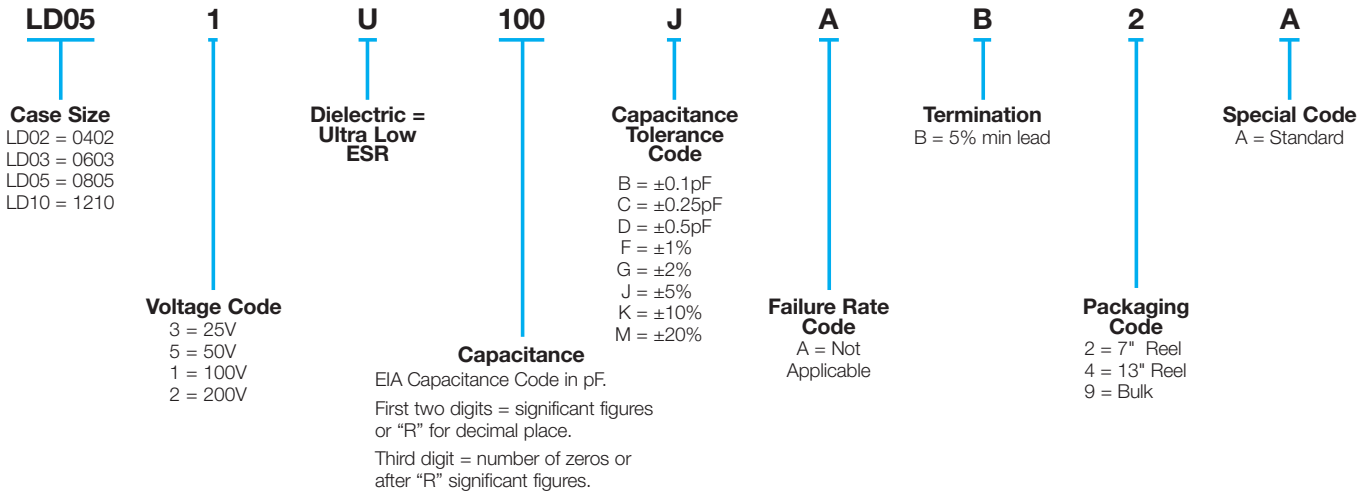
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- 0805 - See Performance Curve, page 113
- 1210 - See Performance Curve, page 113

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

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RF/Microwave C0G (NP0) Capacitors (Sn/Pb)



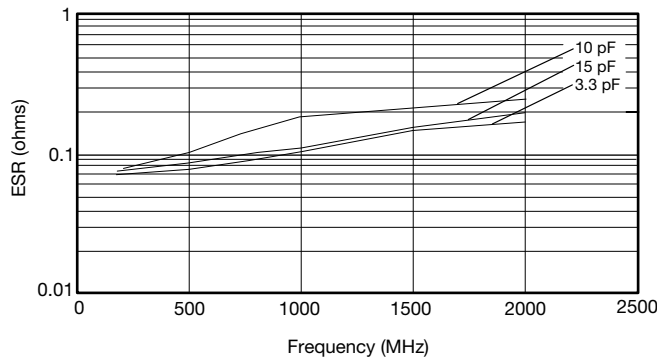
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CAPACITANCE RANGE

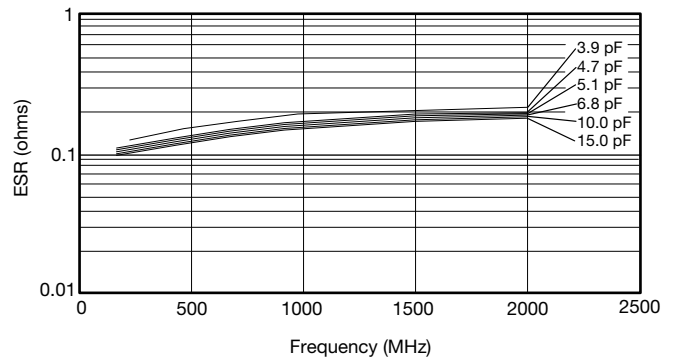
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|----------|---------------------|------|------|------|------|----------|---------------------|------|------|------|------|----------|---------------------|------|------|------|------|----------|---------------------|------|------|------|------|------|--|-----|------|------|------|
| | | LD02 | LD03 | LD05 | LD10 | | | LD02 | LD03 | LD05 | LD10 | | | LD02 | LD03 | LD05 | LD10 | | | LD02 | LD03 | LD05 | LD10 | | | | | | |
| 0.2 | B,C | 50V | N/A | N/A | N/A | 1.0 | B,C,D | 50V | 200V | 200V | 200V | 7.5 | B,C,J,K,M | 50V | 200V | 200V | 200V | 100 | F,G,J,K,M | N/A | 100V | 200V | 200V | 110 | | N/A | 100V | 200V | 200V |
| 0.3 | | | | | | 1.1 | | | | | | 8.2 | | | | | | 120 | | | 50V | 200V | 200V | 130 | | | 50V | 200V | 200V |
| 0.4 | | | | | | 1.2 | | | | | | 9.1 | B,C,J,K,M | | | | | 140 | | | N/A | 200V | 200V | 150 | | | N/A | 100V | 200V |
| 0.5 | B,C | | | | | 1.3 | | | | | | 10 | F,G,J,K,M | | | | | 160 | | | | 200V | 200V | 170 | | | | 100V | 200V |
| 0.6 | B,C,D | | | | | 1.4 | | | | | | 11 | | | | | | 180 | | | | 100V | 200V | 180 | | | | N/A | 200V |
| 0.7 | | | | | | 1.5 | | | | | | 12 | | | | | | 200 | | | | 100V | 200V | 200 | | | | | 200V |
| 0.8 | | | | | | 1.6 | | | | | | 13 | | | | | | 220 | | | | 100V | 200V | 220 | | | | | 200V |
| 0.9 | B,C,D | | | | | 1.7 | | | | | | 15 | | | | | | 270 | | | | 100V | 200V | 270 | | | | | 200V |
| | | | | | | 1.8 | | | | | | 18 | | | | | | 300 | | | | 100V | 200V | 300 | | | | | 200V |
| | | | | | | 1.9 | | | | | | 20 | | | | | | 330 | | | | 100V | 200V | 330 | | | | | 200V |
| | | | | | | 2.0 | | | | | | 21 | | | | | | 360 | | | | 100V | 200V | 360 | | | | | 200V |
| | | | | | | 2.1 | | | | | | 22 | | | | | | 390 | | | | 100V | 200V | 390 | | | | | 200V |
| | | | | | | 2.2 | | | | | | 24 | | | | | | 430 | | | | 100V | 200V | 430 | | | | | 200V |
| | | | | | | 2.4 | | | | | | 27 | | | | | | 470 | | | | 100V | 200V | 470 | | | | | 200V |
| | | | | | | 2.7 | | | | | | 30 | | | | | | 510 | | | | 100V | 200V | 510 | | | | | 200V |
| | | | | | | 3.0 | | | | | | 33 | | | | | | 560 | | | | 100V | 200V | 560 | | | | | 200V |
| | | | | | | 3.3 | | | | | | 36 | | | | | | 620 | | | | 100V | 200V | 620 | | | | | 200V |
| | | | | | | 3.6 | | | | | | 39 | | | | | | 680 | | | | 100V | 200V | 680 | | | | | 200V |
| | | | | | | 3.9 | | | | | | 43 | | | | | | 750 | | | | 100V | 200V | 750 | | | | | 200V |
| | | | | | | 4.3 | | | | | | 47 | | | | | | 820 | | | | 100V | 200V | 820 | | | | | 200V |
| | | | | | | 4.7 | | | | | | 51 | | | | | | 910 | | | | 100V | 200V | 910 | | | | | 200V |
| | | | | | | 5.1 | | | | | | 56 | | | | | | 1000 | | | | 100V | 200V | 1000 | | | | | 200V |
| | | | | | | 5.6 | | | | | | 68 | | | | | | | | | | 100V | 200V | | | | | | 200V |
| | | | | | | 6.2 | B,C,D | | | | | 75 | | | | | | | | | | 100V | 200V | | | | | | 200V |
| | | | | | | 6.8 | B,C,J,K,M | | | | | 82 | | | | | | | | | | 100V | 200V | | | | | | 200V |
| | | | | | | | | | | | | 91 | | | | | | | | | | 100V | 200V | | | | | | 200V |

ULTRA LOW ESR, "U" SERIES

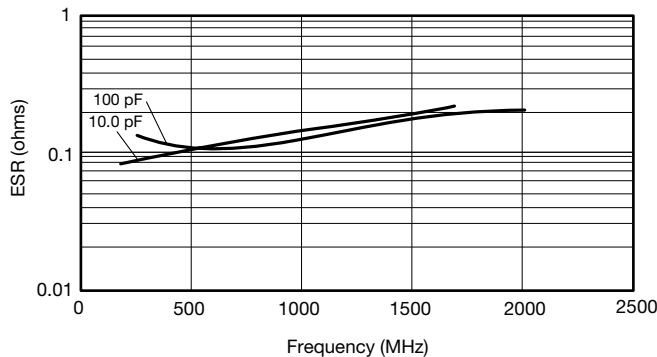
TYPICAL ESR vs. FREQUENCY
0402 "U" SERIES



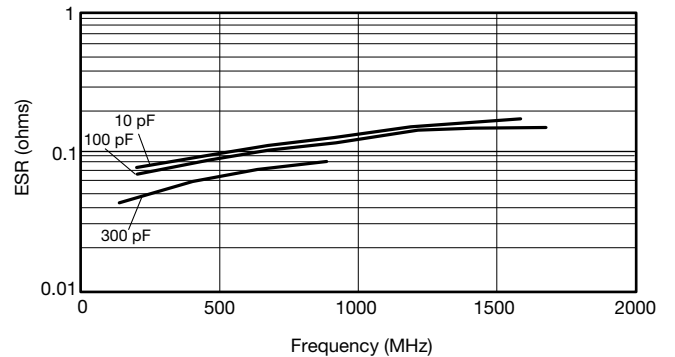
TYPICAL ESR vs. FREQUENCY
0603 "U" SERIES



TYPICAL ESR vs. FREQUENCY
0805 "U" SERIES



TYPICAL ESR vs. FREQUENCY
1210 "U" SERIES



ESR Measured on the Boonton 34A

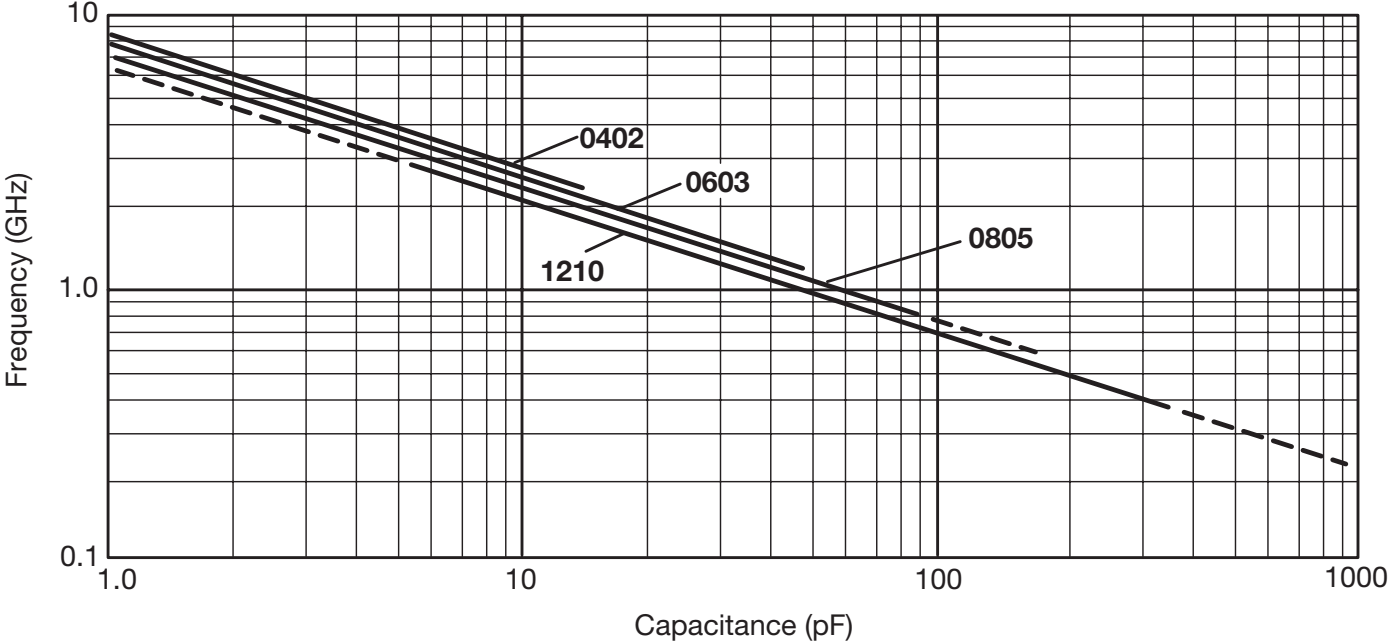


RF/Microwave C0G (NP0) Capacitors (Sn/Pb)



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

TYPICAL
SERIES RESONANT FREQUENCY
"U" SERIES CHIP



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