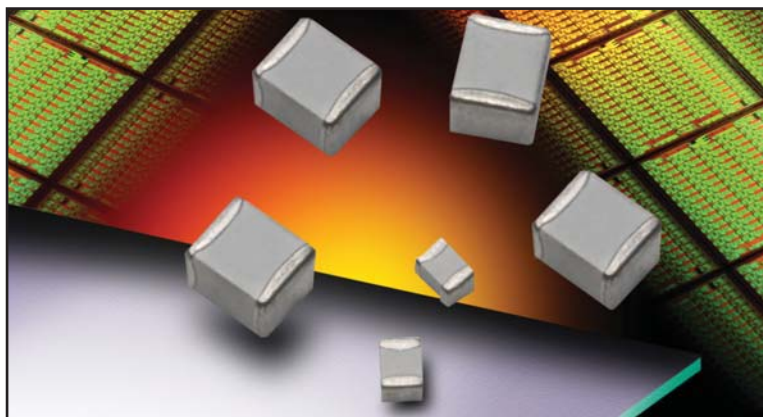


# Microwave MLCs



## UQ Series High Q Ultra Low ESR MLC



### FEATURES:

- Ultra Low ESR
- High Q
- High Self Resonance
- Capacitance Range 0.1 pF to 1000 pF

### APPLICATIONS:

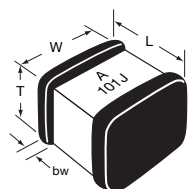
- RF Power Amplifiers
- Low Noise Amplifiers
- Filter Networks
- MRI Systems

### HOW TO ORDER

|                                   |   |   |  |   |   |   |  |   |
|-----------------------------------|---|---|--|---|---|---|--|---|
| <p><b>UQ</b></p> <p>AVX Style</p> | <p><b>CB</b></p> <p><b>Case Size</b><br/>                 CA = 0605<br/>                 CB = 1210<br/>                 CR = 0709<br/>                 CL = 0402<br/>                 CS = 0603<br/>                 CF = 0805</p> <p>See mechanical dimensions below</p> | <p><b>7</b></p> <p><b>Voltage Code</b><br/>                 5 = 50V<br/>                 1 = 100V<br/>                 2 = 200V<br/>                 V = 250V<br/>                 9 = 300V<br/>                 7 = 500V</p> | <p><b>A</b></p> <p><b>Temperature Coefficient Code</b><br/>                 A = 0±30ppm/°C</p> | <p><b>100</b></p> <p><b>Capacitance</b><br/>                 EIA Capacitance Code in pF.<br/>                 First two digits = significant figures or "R" for decimal place.<br/>                 Third digit = number of zeros or after "R" significant figures.</p> | <p><b>J</b></p> <p><b>Capacitance Tolerance Code</b><br/>                 A = ±.05 pF<br/>                 B = ±.1 pF<br/>                 C = ±.25 pF<br/>                 D = ±.5 pF<br/>                 F = ±1%<br/>                 G = ±2%<br/>                 J = ±5%<br/>                 K = ±10%<br/>                 M = ±20%</p> | <p><b>A</b></p> <p><b>Failure Rate Code</b><br/>                 A = Not Applicable</p> | <p><b>T</b></p> <p><b>Termination Style Code</b><br/>                 J = Nickel Barrier Sn/Pb (60/40)<br/>                 **T = 100% Tin<br/>                 **C = Non-Magnetic Barrier/Tin</p> | <p><b>ME</b></p> <p><b>Packaging Code</b><br/>                 ME = 7" Reel Marked (0605, 1210 &amp; 0709 only)<br/>                 2A = 7" Unmarked (0402, 0603, &amp; 0805 only)</p> <p>* Vertical T&amp;R available</p> |
|-----------------------------------|---|---|--|---|---|---|--|---|

**\*\*RoHS compliant**

### MECHANICAL DIMENSIONS: inches (millimeters)



| Case | Length (L)                                | Width (W)                | Thickness (T)    | Band Width (bw)                           |
|------|---|--------------------------|------------------|---|
| UQCA | .055 + .015 - .010<br>(1.40+ .381 - .254) | .055±.015<br>(1.40±.381) | .057 (1.45) max. | .010 + .010 - .005<br>(.254 +.254 - .127) |
| UQCB | .110 + .020 - .010<br>(2.79 +.508 -.254)  | .110±.015<br>(2.79±.381) | .102 (2.59) max. | .015±.010<br>(.381±.254)                  |
| UQCR | .070 ± .015<br>(1.78 ± .381)              | .090±.010<br>(2.29±.254) | .115 (2.92) max. | .010 + .010 - .005<br>(.254 +.254 - .127) |
| UQCL | .040 ± .004<br>(1.02 ± .100)              | .020±.004<br>(0.51±.100) | .024 (.600) max. | .010 ± .006<br>(0.25 ± 0.15)              |
| UQCS | .063 ± .006<br>(1.60 ± 0.15)              | .032±.006<br>(0.81±0.15) | .035 (.890) max. | .014 ± .006<br>(0.36 ± 0.15)              |
| UQCF | .079 ± .008<br>(2.01 ± 0.20)              | .049±.008<br>(1.24±0.20) | .051 (1.30) max. | .020 ± 0.01<br>(0.51 ± 0.25)              |

**TAPE & REEL:** All tape and reel specifications are in compliance with EIA RS481 (equivalent to IEC 286 part 3).

- 8mm carrier
- 7" reel: UQCA = 500 or 4000 pc T&R
- UQCB = 500 or 1000 pc T&R
- UQCR = 500 or 1000 pc T&R
- UQCL = 500, 4000 or 10,000 pc T&R
- UQCS = 500 or 4000 pc T&R
- UQCF = 500 or 4000 pc T&R



For RoHS compliant products, please select correct termination style.

Also available in:  
**Not RoHS Compliant**

### ELECTRICAL SPECIFICATIONS

|                                       | Temperature Characteristic Code A  |
|---------------------------------------|--|
| Temperature Coefficient (TCC)         | (A) $0 \pm 30$ PPM/°C  |
| Capacitance Range                     | (A) 0.1 pF to 1000 pF  |
| Operating Temperature                 | 0.1 pF to 1000 pF: from -55°C to +125°C  |
| Quality Factor (Q)                    | Greater than 2,000 at 1 MHz  |
| Insulation Resistance (IR)            | 0.1 pF to 1000 pF<br>10 <sup>5</sup> Megohms min. @ 25°C at rated WVDC<br>10 <sup>4</sup> Megohms min. @ 125°C at rated WVDC |
| Working Voltage (WVDC)                | See Capacitance Values table   |
| Dielectric Withstanding Voltage (DWW) | 250% of rated WVDC for 5 secs  |
| Aging Effects                         | None   |
| Piezoelectric Effects                 | None   |
| Capacitance Drift                     | $\pm$ (0.02% or 0.02 pF), whichever is greater   |

### ENVIRONMENTAL CHARACTERISTICS

AVX UQ will meet and exceed the requirements of EIA-198, MIL-PRF-55681 and MIL-PRF-123

|                           |   |
|---------------------------|---|
| Thermal Shock             | Mil-STD-202, Method 107, Condition A  |
| Moisture Resistance       | Mil-STD-202, Method 106   |
| Low Voltage Humidity      | Mil-STD-202, Method 103, condition A, with 1.5 VDC applied while subjected to an environment of 85°C with 85% relative humidity for 240 hours |
| Life Test                 | Mil-STD-202, Method 108, for 2000 hours at 125°C 200% WVDC  |
| Shock                     | Mil-STD-202, Method 213, Condition J  |
| Vibration                 | Mil-STD-202, Method 204, Condition B  |
| Immersion                 | Mil-STD-202, Method 104, Condition B  |
| Salt Spray                | Mil-STD-202, Method 101, Condition B  |
| Solderability             | Mil-STD-202, Method 208   |
| Terminal Strength         | Mil-STD-202, Method 211   |
| Temperature Cycling       | Mil-STD-202, Method 102, Condition C  |
| Barometric Pressure       | Mil-STD-202, Method 105, Condition B  |
| Resistance to Solder Heat | Mil-STD-202, Method 210, Condition C  |

# Microwave MLCs



## UQ Series High Q Ultra Low ESR MLC

### Case Size A

**TABLE I: TC: A (0±30PPM/°C)**

| Cap. pF | Cap. Tol. | WVDC | Cap. pF | Cap. Tol. | WVDC | Cap. pF | Cap. Tol.     | WVDC | Cap. pF | Cap. Tol.     | WVDC |
|---------|-----------|------|---------|-----------|------|---------|---------------|------|---------|---------------|------|
| 0.1     | B         | 250  | 1.6     | B, C, D   | 250  | 5.6     | B, C, D       | 250  | 24      | F, G, J, K, M | 250  |
| 0.2     | B         | 250  | 1.7     | B, C, D   | 250  | 6.2     | B, C, D       | 250  | 27      | F, G, J, K, M | 250  |
| 0.3     | B,C       | 250  | 1.8     | B, C, D   | 250  | 6.8     | B, C, J, K    | 250  | 30      | F, G, J, K, M | 250  |
| 0.4     | B,C       | 250  | 1.9     | B, C, D   | 250  | 7.5     | B, C, J, K    | 250  | 33      | F, G, J, K, M | 250  |
| 0.5     | B, C, D   | 250  | 2.0     | B, C, D   | 250  | 8.2     | B, C, J, K    | 250  | 36      | F, G, J, K, M | 250  |
| 0.6     | B, C, D   | 250  | 2.2     | B, C, D   | 250  | 9.1     | B, C, J, K    | 250  | 39      | F, G, J, K, M | 250  |
| 0.7     | B, C, D   | 250  | 2.4     | B, C, D   | 250  | 10      | F, G, J, K, M | 250  | 43      | F, G, J, K, M | 250  |
| 0.8     | B, C, D   | 250  | 2.7     | B, C, D   | 250  | 11      | F, G, J, K, M | 250  | 47      | F, G, J, K, M | 250  |
| 0.9     | B, C, D   | 250  | 3.0     | B, C, D   | 250  | 12      | F, G, J, K, M | 250  | 51      | F, G, J, K, M | 250  |
| 1.0     | B, C, D   | 250  | 3.3     | B, C, D   | 250  | 13      | F, G, J, K, M | 250  | 56      | F, G, J, K, M | 250  |
| 1.1     | B, C, D   | 250  | 3.6     | B, C, D   | 250  | 15      | F, G, J, K, M | 250  | 62      | F, G, J, K, M | 250  |
| 1.2     | B, C, D   | 250  | 3.9     | B, C, D   | 250  | 16      | F, G, J, K, M | 250  | 68      | F, G, J, K, M | 250  |
| 1.3     | B, C, D   | 250  | 4.3     | B, C, D   | 250  | 18      | F, G, J, K, M | 250  | 75      | F, G, J, K, M | 250  |
| 1.4     | B, C, D   | 250  | 4.7     | B, C, D   | 250  | 20      | F, G, J, K, M | 250  | 82      | F, G, J, K, M | 250  |
| 1.5     | B, C, D   | 250  | 5.1     | B, C, D   | 250  | 22      | F, G, J, K, M | 250  | 91      | F, G, J, K, M | 250  |
|         |           |      |         |           |      |         |               |      | 100     | F, G, J, K, M | 250  |

### Case Size B

**TABLE II: TC: A (0±30PPM/°C)**

| Cap. pF | Cap. Tol. | WVDC | Cap. pF | Cap. Tol.     | WVDC | Cap. pF | Cap. Tol.     | WVDC | Cap. pF | Cap. Tol.     | WVDC |
|---------|-----------|------|---------|---------------|------|---------|---------------|------|---------|---------------|------|
| 0.1     | B         | 500  | 3.6     | B, C, D       | 500  | 39      | F, G, J, K, M | 500  | 430     | F, G, J, K, M | 200  |
| 0.2     | B         | 500  | 3.9     | B, C, D       | 500  | 43      | F, G, J, K, M | 500  | 470     | F, G, J, K, M | 200  |
| 0.3     | B,C       | 500  | 4.3     | B, C, D       | 500  | 47      | F, G, J, K, M | 500  | 510     | F, G, J, K, M | 100  |
| 0.4     | B,C       | 500  | 4.7     | B, C, D       | 500  | 51      | F, G, J, K, M | 500  | 560     | F, G, J, K, M | 100  |
| 0.5     | B, C, D   | 500  | 5.1     | B, C, D       | 500  | 56      | F, G, J, K, M | 500  | 620     | F, G, J, K, M | 100  |
| 0.6     | B, C, D   | 500  | 5.6     | B, C, D       | 500  | 62      | F, G, J, K, M | 500  | 680     | F, G, J, K, M | 50   |
| 0.7     | B, C, D   | 500  | 6.2     | B, C, D       | 500  | 68      | F, G, J, K, M | 500  | 750     | F, G, J, K, M | 50   |
| 0.8     | B, C, D   | 500  | 6.8     | B, C, J, K    | 500  | 75      | F, G, J, K, M | 500  | 820     | F, G, J, K, M | 50   |
| 0.9     | B, C, D   | 500  | 7.5     | B, C, J, K    | 500  | 82      | F, G, J, K, M | 500  | 910     | F, G, J, K, M | 50   |
| 1.0     | B, C, D   | 500  | 8.2     | B, C, J, K    | 500  | 91      | F, G, J, K, M | 500  | 1000    | F, G, J, K, M | 50   |
| 1.1     | B, C, D   | 500  | 9.1     | B, C, J, K    | 500  | 100     | F, G, J, K, M | 500  |         |               |      |
| 1.2     | B, C, D   | 500  | 10      | F, G, J, K, M | 500  | 110     | F, G, J, K, M | 300  |         |               |      |
| 1.3     | B, C, D   | 500  | 11      | F, G, J, K, M | 500  | 120     | F, G, J, K, M | 300  |         |               |      |
| 1.4     | B, C, D   | 500  | 12      | F, G, J, K, M | 500  | 130     | F, G, J, K, M | 300  |         |               |      |
| 1.5     | B, C, D   | 500  | 13      | F, G, J, K, M | 500  | 150     | F, G, J, K, M | 300  |         |               |      |
| 1.6     | B, C, D   | 500  | 15      | F, G, J, K, M | 500  | 160     | F, G, J, K, M | 300  |         |               |      |
| 1.7     | B, C, D   | 500  | 16      | F, G, J, K, M | 500  | 180     | F, G, J, K, M | 300  |         |               |      |
| 1.8     | B, C, D   | 500  | 18      | F, G, J, K, M | 500  | 200     | F, G, J, K, M | 300  |         |               |      |
| 1.9     | B, C, D   | 500  | 20      | F, G, J, K, M | 500  | 220     | F, G, J, K, M | 200  |         |               |      |
| 2.0     | B, C, D   | 500  | 22      | F, G, J, K, M | 500  | 240     | F, G, J, K, M | 200  |         |               |      |
| 2.2     | B, C, D   | 500  | 24      | F, G, J, K, M | 500  | 270     | F, G, J, K, M | 200  |         |               |      |
| 2.4     | B, C, D   | 500  | 27      | F, G, J, K, M | 500  | 300     | F, G, J, K, M | 200  |         |               |      |
| 2.7     | B, C, D   | 500  | 30      | F, G, J, K, M | 500  | 330     | F, G, J, K, M | 200  |         |               |      |
| 3.0     | B, C, D   | 500  | 33      | F, G, J, K, M | 500  | 360     | F, G, J, K, M | 200  |         |               |      |
| 3.3     | B, C, D   | 500  | 36      | F, G, J, K, M | 500  | 390     | F, G, J, K, M | 200  |         |               |      |

### Case Size R

**TABLE III: TC: A (0±30PPM/°C)**

| Cap. pF | Cap. Tol. | WVDC | Cap. pF | Cap. Tol.     | WVDC | Cap. pF | Cap. Tol.  | WVDC | Cap. pF | Cap. Tol.  | WVDC |
|---------|-----------|------|---------|---------------|------|---------|------------|------|---------|------------|------|
| 1.0     | B, C, D   | 500  | 3.0     | B, C, D       | 500  | 12      | G, J, K, M | 500  | 51      | G, J, K, M | 500  |
| 1.1     | B, C, D   | 500  | 3.3     | B, C, D       | 500  | 13      | G, J, K, M | 500  | 56      | G, J, K, M | 500  |
| 1.2     | B, C, D   | 500  | 3.6     | B, C, D       | 500  | 15      | G, J, K, M | 500  | 62      | G, J, K, M | 500  |
| 1.3     | B, C, D   | 500  | 3.9     | B, C, D       | 500  | 16      | G, J, K, M | 500  | 68      | G, J, K, M | 500  |
| 1.4     | B, C, D   | 500  | 4.3     | B, C, D       | 500  | 18      | G, J, K, M | 500  | 75      | G, J, K, M | 500  |
| 1.5     | B, C, D   | 500  | 4.7     | B, C, D       | 500  | 20      | G, J, K, M | 500  | 82      | G, J, K, M | 500  |
| 1.6     | B, C, D   | 500  | 5.1     | B, C, D       | 500  | 22      | G, J, K, M | 500  | 91      | G, J, K, M | 500  |
| 1.7     | B, C, D   | 500  | 5.6     | B, C, D       | 500  | 24      | G, J, K, M | 500  | 100     | G, J, K, M | 500  |
| 1.8     | B, C, D   | 500  | 6.2     | B, C, D       | 500  | 27      | G, J, K, M | 500  |         |            |      |
| 1.9     | B, C, D   | 500  | 6.8     | B, C, J, K, M | 500  | 30      | G, J, K, M | 500  |         |            |      |
| 2.0     | B, C, D   | 500  | 7.5     | B, C, J, K, M | 500  | 33      | G, J, K, M | 500  |         |            |      |
| 2.1     | B, C, D   | 500  | 8.2     | B, C, J, K, M | 500  | 36      | G, J, K, M | 500  |         |            |      |
| 2.2     | B, C, D   | 500  | 9.1     | B, C, J, K, M | 500  | 39      | G, J, K, M | 500  |         |            |      |
| 2.4     | B, C, D   | 500  | 10      | G, J, K, M    | 500  | 43      | G, J, K, M | 500  |         |            |      |
| 2.7     | B, C, D   | 500  | 11      | G, J, K, M    | 500  | 47      | G, J, K, M | 500  |         |            |      |

### Case Size L

**TABLE IV: TC: A (0±30PPM/°C)**

| Cap. pF | Cap. Tol.  | WVDC | Cap. pF | Cap. Tol.  | WVDC | Cap. pF | Cap. Tol.     | WVDC |
|---------|------------|------|---------|------------|------|---------|---------------|------|
| 0.1     | A, B       | 200  | 1.6     | A, B, C, D | 200  | 6.2     | A, B, C, D    | 200  |
| 0.2     | A, B       | 200  | 1.8     | A, B, C, D | 200  | 6.8     | B, C, J, K    | 200  |
| 0.3     | A, B, C    | 200  | 2.0     | A, B, C, D | 200  | 7.5     | B, C, J, K    | 200  |
| 0.4     | A, B, C    | 200  | 2.2     | A, B, C, D | 200  | 8.2     | B, C, J, K    | 200  |
| 0.5     | A, B, C    | 200  | 2.4     | A, B, C, D | 200  | 9.1     | B, C, J, K    | 200  |
| 0.6     | A, B, C    | 200  | 2.7     | A, B, C, D | 200  | 10      | F, G, J, K, M | 200  |
| 0.7     | A, B, C    | 200  | 3.0     | A, B, C, D | 200  | 11      | F, G, J, K, M | 200  |
| 0.8     | A, B, C    | 200  | 3.3     | A, B, C, D | 200  | 12      | F, G, J, K, M | 200  |
| 0.9     | A, B, C    | 200  | 3.6     | A, B, C, D | 200  | 15      | F, G, J, K, M | 200  |
| 1.0     | A, B, C, D | 200  | 3.9     | A, B, C, D | 200  | 18      | F, G, J, K, M | 200  |
| 1.1     | A, B, C, D | 200  | 4.3     | A, B, C, D | 200  | 20      | F, G, J, K, M | 200  |
| 1.2     | A, B, C, D | 200  | 4.7     | A, B, C, D | 200  | 22      | F, G, J, K, M | 200  |
| 1.3     | A, B, C, D | 200  | 5.1     | A, B, C, D | 200  | 24      | F, G, J, K, M | 200  |
| 1.5     | A, B, C, D | 200  | 5.6     | A, B, C, D | 200  | 27      | F, G, J, K, M | 200  |

### Case Size S

**TABLE V:**

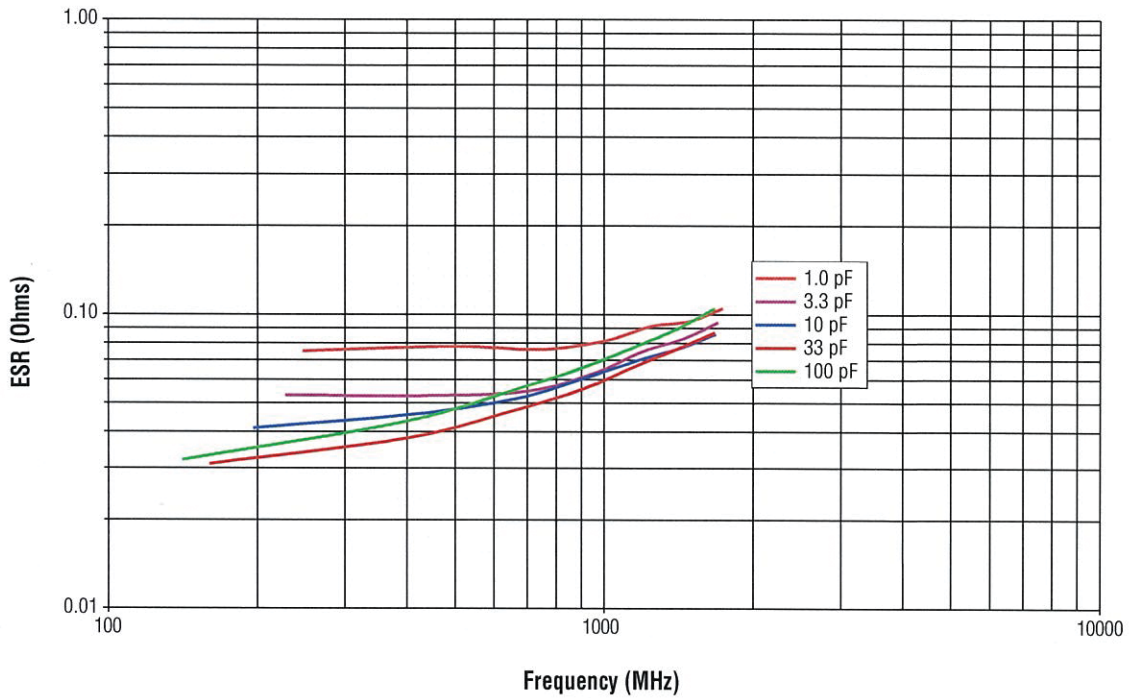
| Cap. pF | Cap. Tol.  | WVDC | Cap. pF | Cap. Tol.     | WVDC | Cap. pF | Cap. Tol.     | WVDC |
|---------|------------|------|---------|---------------|------|---------|---------------|------|
| 0.1     | A, B       | 250  | 2.7     | A, B, C, D    | 250  | 20      | F, G, J, K, M | 250  |
| 0.2     | A, B       | 250  | 3.0     | A, B, C, D    | 250  | 22      | F, G, J, K, M | 250  |
| 0.3     | A, B, C    | 250  | 3.3     | A, B, C, D    | 250  | 24      | F, G, J, K, M | 250  |
| 0.4     | A, B, C    | 250  | 3.6     | A, B, C, D    | 250  | 27      | F, G, J, K, M | 250  |
| 0.5     | A, B, C    | 250  | 3.9     | A, B, C, D    | 250  | 30      | F, G, J, K, M | 250  |
| 0.6     | A, B, C    | 250  | 4.3     | A, B, C, D    | 250  | 33      | F, G, J, K, M | 250  |
| 0.7     | A, B, C    | 250  | 4.7     | A, B, C, D    | 250  | 36      | F, G, J, K, M | 250  |
| 0.8     | A, B, C    | 250  | 5.1     | A, B, C, D    | 250  | 39      | F, G, J, K, M | 250  |
| 0.9     | A, B, C    | 250  | 5.6     | A, B, C, D    | 250  | 43      | F, G, J, K, M | 250  |
| 1.0     | A, B, C, D | 250  | 6.2     | A, B, C, D    | 250  | 47      | F, G, J, K, M | 250  |
| 1.1     | A, B, C, D | 250  | 6.8     | B, C, J, K    | 250  | 51      | F, G, J, K, M | 250  |
| 1.2     | A, B, C, D | 250  | 7.5     | B, C, J, K    | 250  | 56      | F, G, J, K, M | 250  |
| 1.3     | A, B, C, D | 250  | 8.2     | B, C, J, K    | 250  | 62      | F, G, J, K, M | 250  |
| 1.5     | A, B, C, D | 250  | 9.1     | B, C, J, K    | 250  | 68      | F, G, J, K, M | 250  |
| 1.6     | A, B, C, D | 250  | 10      | F, G, J, K, M | 250  | 75      | F, G, J, K, M | 250  |
| 1.8     | A, B, C, D | 250  | 11      | F, G, J, K, M | 250  | 82      | F, G, J, K, M | 250  |
| 2.0     | A, B, C, D | 250  | 12      | F, G, J, K, M | 250  | 91      | F, G, J, K, M | 250  |
| 2.2     | A, B, C, D | 250  | 15      | F, G, J, K, M | 250  | 100     | F, G, J, K, M | 250  |
| 2.4     | A, B, C, D | 250  | 18      | F, G, J, K, M | 250  |         |               |      |

### Case Size F

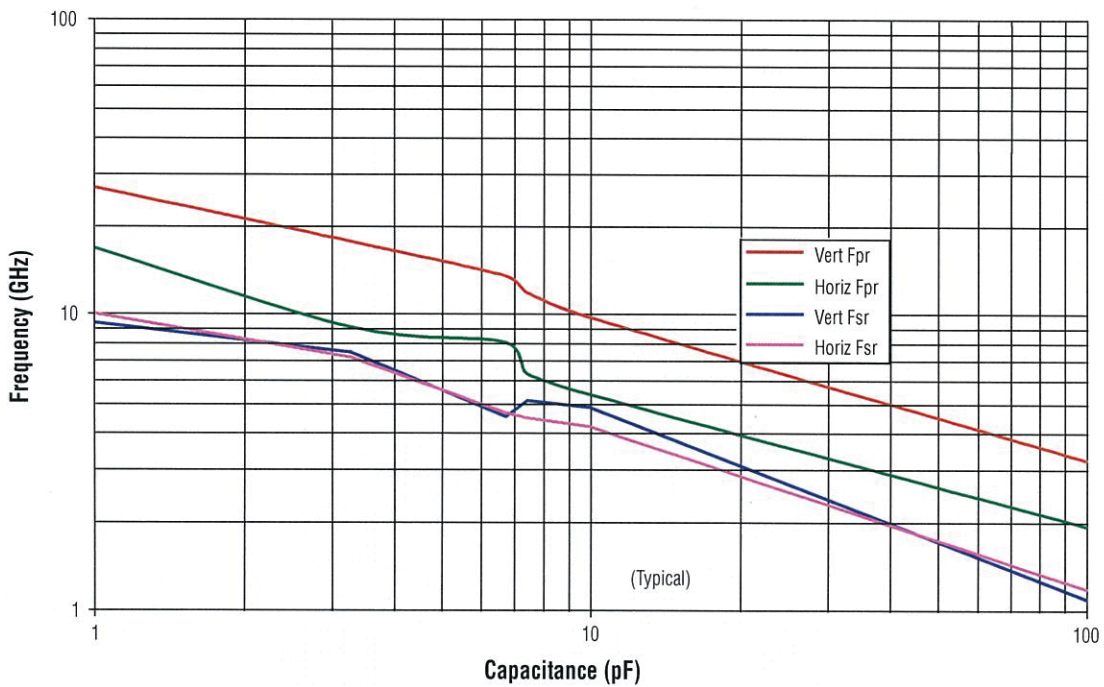
**TABLE VI:**

| Cap. pF | Cap. Tol.  | WVDC | Cap. pF | Cap. Tol.     | WVDC | Cap. pF | Cap. Tol.     | WVDC |
|---------|------------|------|---------|---------------|------|---------|---------------|------|
| 0.1     | A, B       | 250  | 3.3     | A, B, C, D    | 250  | 30      | F, G, J, K, M | 250  |
| 0.2     | A, B       | 250  | 3.6     | A, B, C, D    | 250  | 33      | F, G, J, K, M | 250  |
| 0.3     | A, B, C    | 250  | 3.9     | A, B, C, D    | 250  | 36      | F, G, J, K, M | 250  |
| 0.4     | A, B, C    | 250  | 4.3     | A, B, C, D    | 250  | 39      | F, G, J, K, M | 250  |
| 0.5     | A, B, C    | 250  | 4.7     | A, B, C, D    | 250  | 43      | F, G, J, K, M | 250  |
| 0.6     | A, B, C    | 250  | 5.1     | A, B, C, D    | 250  | 47      | F, G, J, K, M | 250  |
| 0.7     | A, B, C    | 250  | 5.6     | A, B, C, D    | 250  | 51      | F, G, J, K, M | 250  |
| 0.8     | A, B, C    | 250  | 6.2     | A, B, C, D    | 250  | 56      | F, G, J, K, M | 250  |
| 0.9     | A, B, C    | 250  | 6.8     | B, C, J, K    | 250  | 62      | F, G, J, K, M | 250  |
| 1.0     | A, B, C, D | 250  | 7.5     | B, C, J, K    | 250  | 68      | F, G, J, K, M | 250  |
| 1.1     | A, B, C, D | 250  | 8.2     | B, C, J, K    | 250  | 75      | F, G, J, K, M | 250  |
| 1.2     | A, B, C, D | 250  | 9.1     | B, C, J, K    | 250  | 82      | F, G, J, K, M | 250  |
| 1.3     | A, B, C, D | 250  | 10      | F, G, J, K, M | 250  | 91      | F, G, J, K, M | 250  |
| 1.5     | A, B, C, D | 250  | 11      | F, G, J, K, M | 250  | 100     | F, G, J, K, M | 250  |
| 1.6     | A, B, C, D | 250  | 12      | F, G, J, K, M | 250  | 110     | F, G, J, K, M | 250  |
| 1.8     | A, B, C, D | 250  | 15      | F, G, J, K, M | 250  | 120     | F, G, J, K, M | 250  |
| 2.0     | A, B, C, D | 250  | 18      | F, G, J, K, M | 250  | 150     | F, G, J, K, M | 250  |
| 2.2     | A, B, C, D | 250  | 20      | F, G, J, K, M | 250  | 180     | F, G, J, K, M | 250  |
| 2.4     | A, B, C, D | 250  | 22      | F, G, J, K, M | 250  | 200     | F, G, J, K, M | 250  |
| 2.7     | A, B, C, D | 250  | 24      | F, G, J, K, M | 250  | 220     | F, G, J, K, M | 250  |
| 3.0     | A, B, C, D | 250  | 27      | F, G, J, K, M | 250  | 240     | F, G, J, K, M | 250  |

UQ CA ESR vs. Frequency

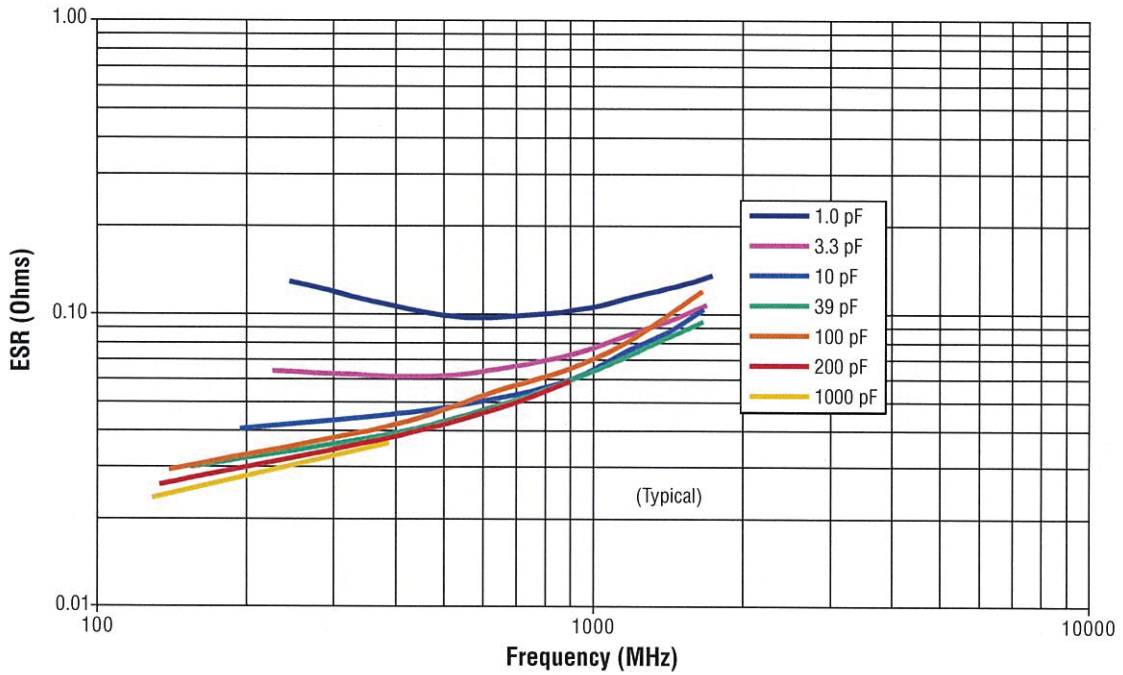


UQ CA FSR & FPR vs. Capacitance

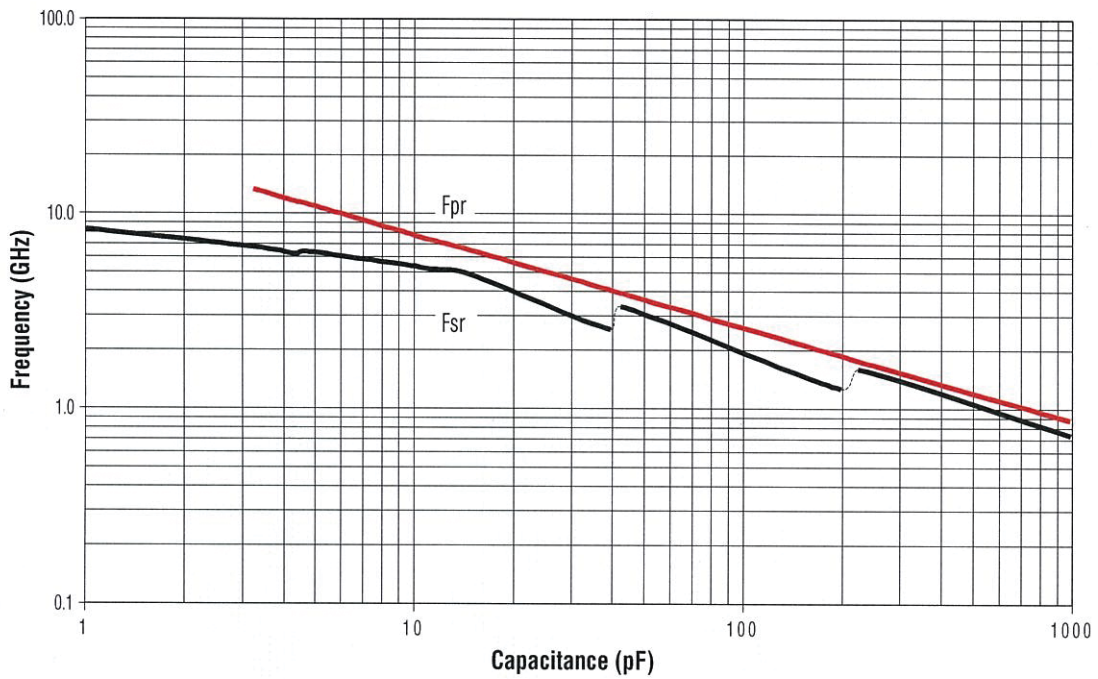




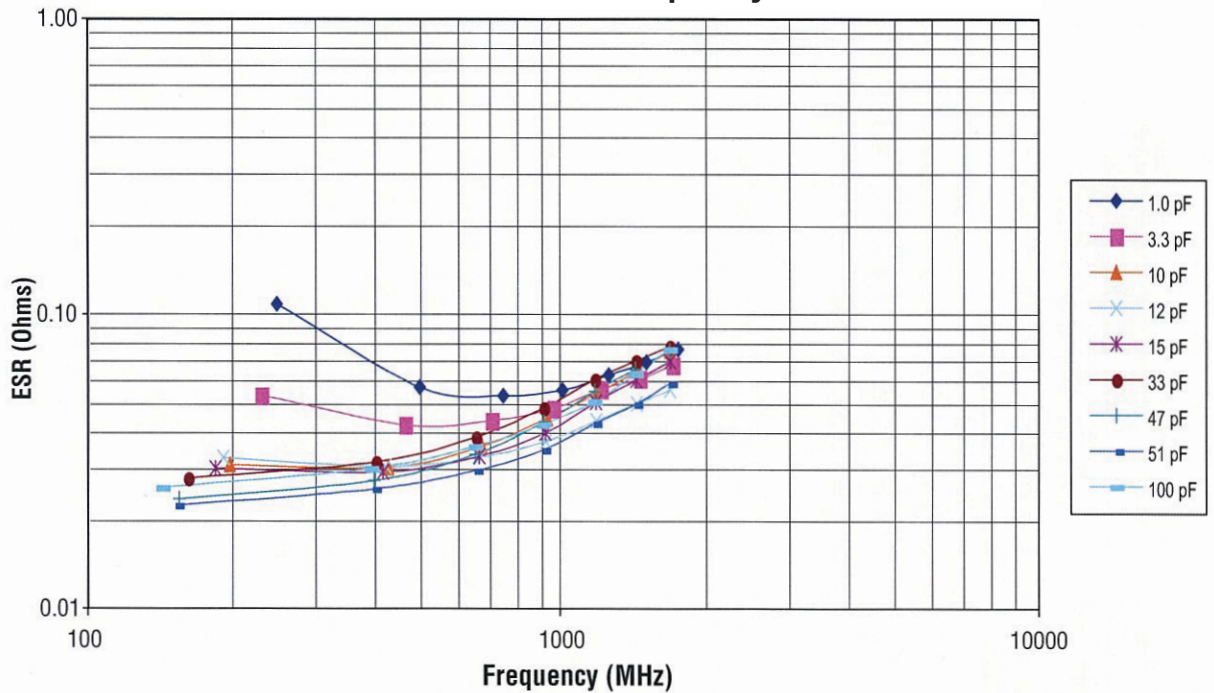
UQ CB ESR vs. Frequency



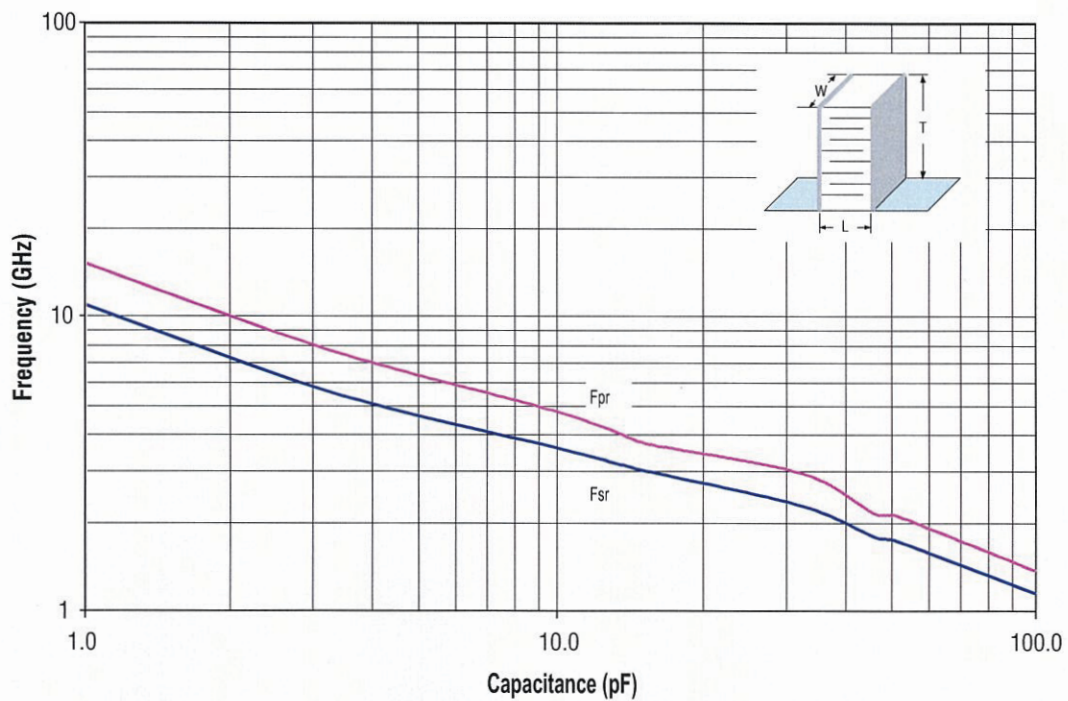
UQ CB FSR & FPR vs. Capacitance



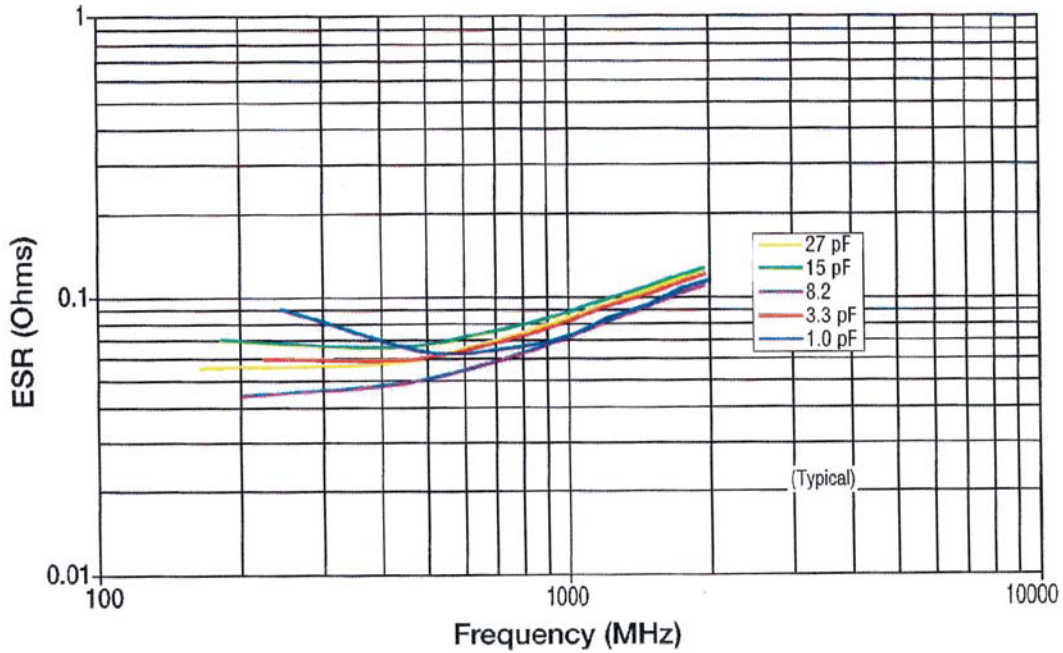
UQ CR ESR vs. Frequency



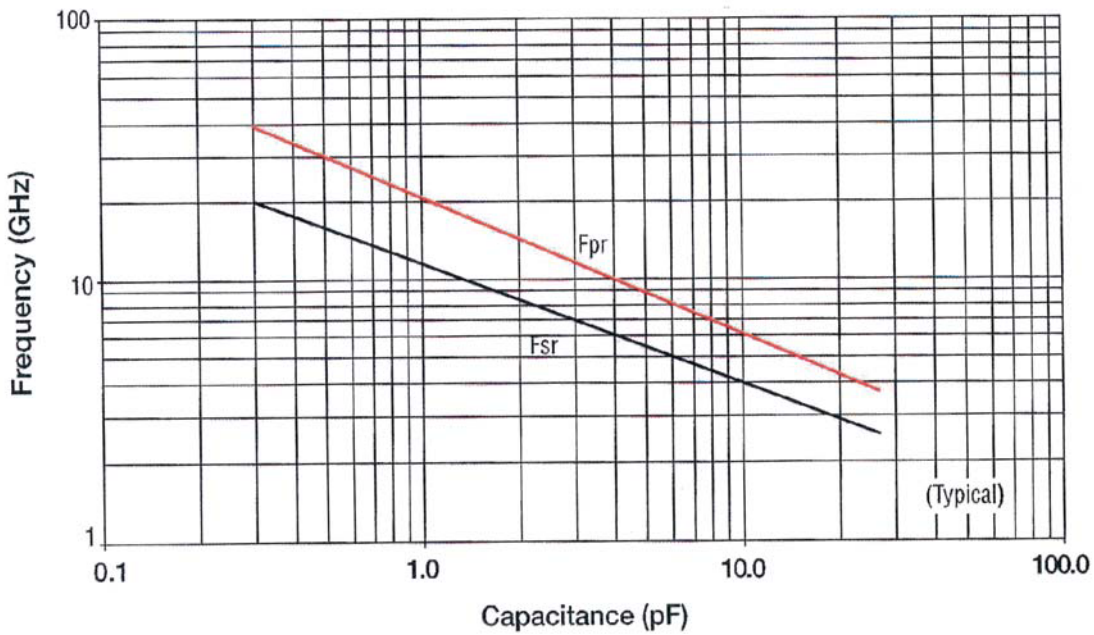
UQ CR Resonance Horizontal Orientation



### UQ CL ESR vs. Frequency

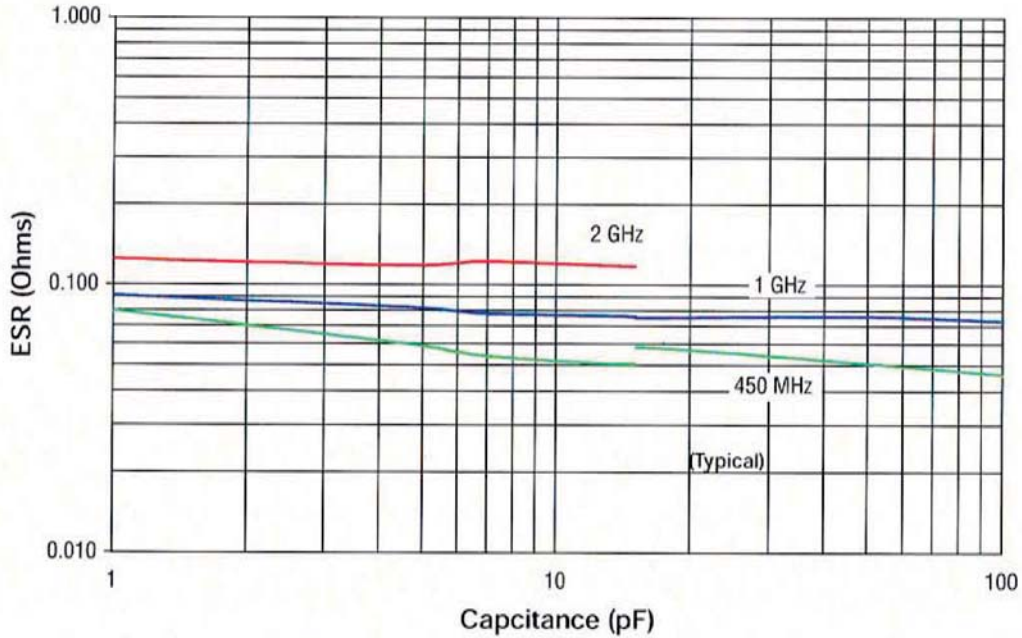


### UQ CL Resonance Frequency

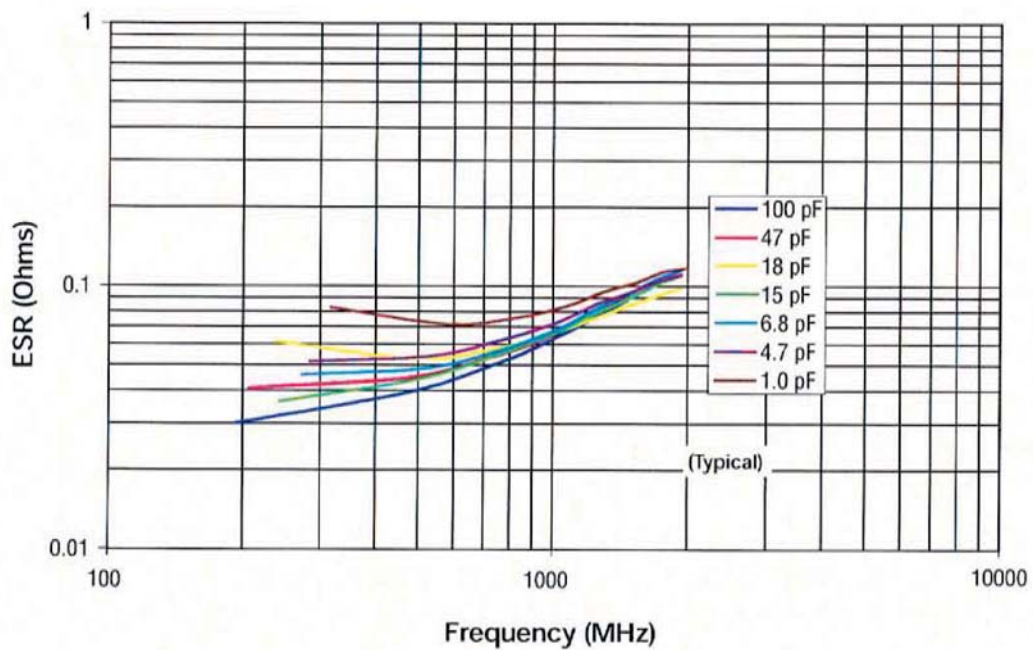




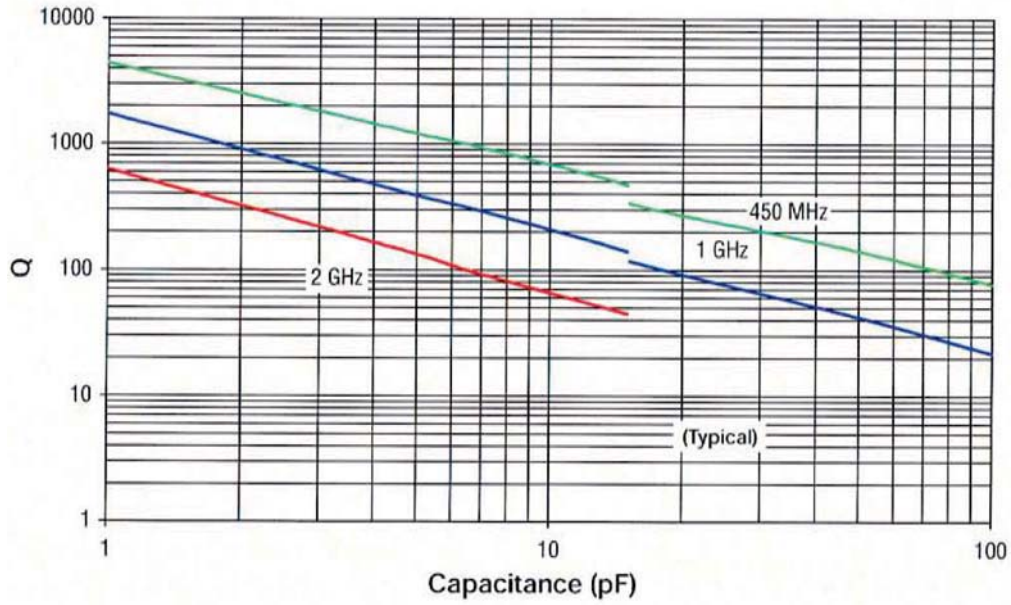
UQ CS ESR vs. Frequency



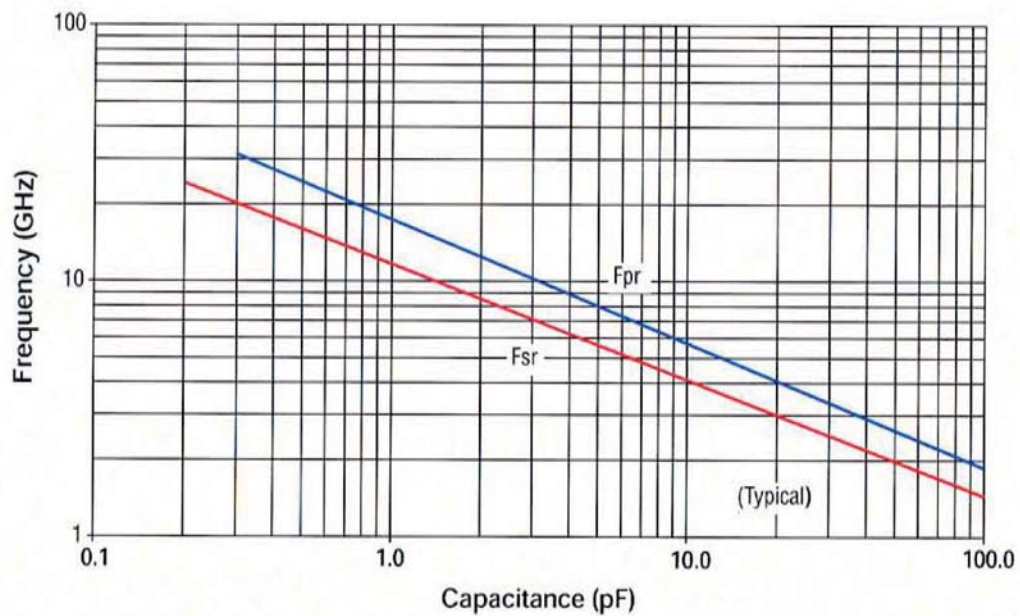
UQ CS ESR vs. Frequency



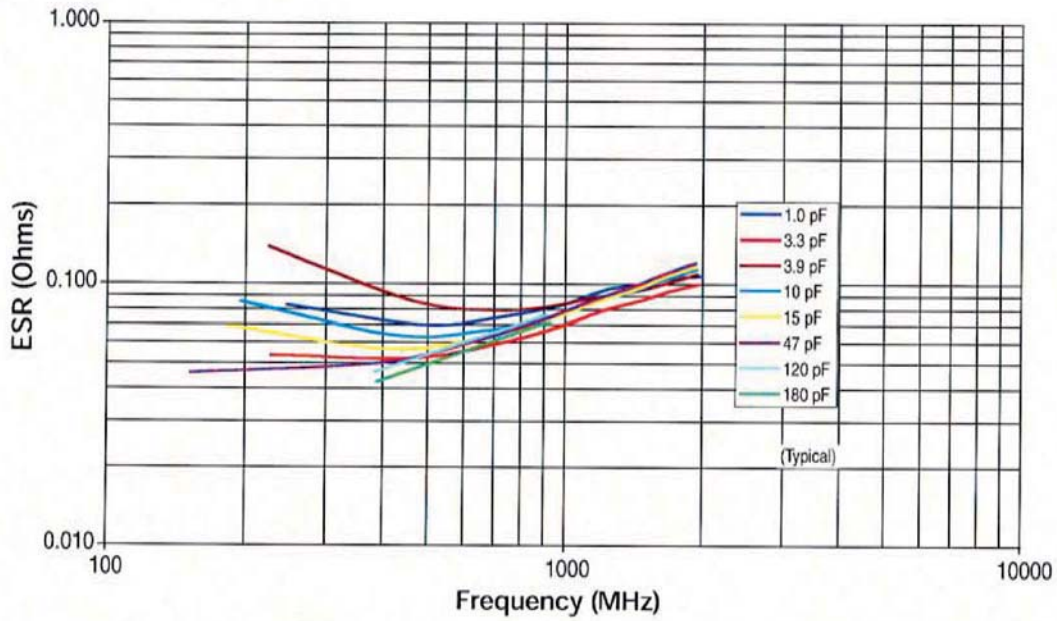
UQ CS Q vs. Capacitance



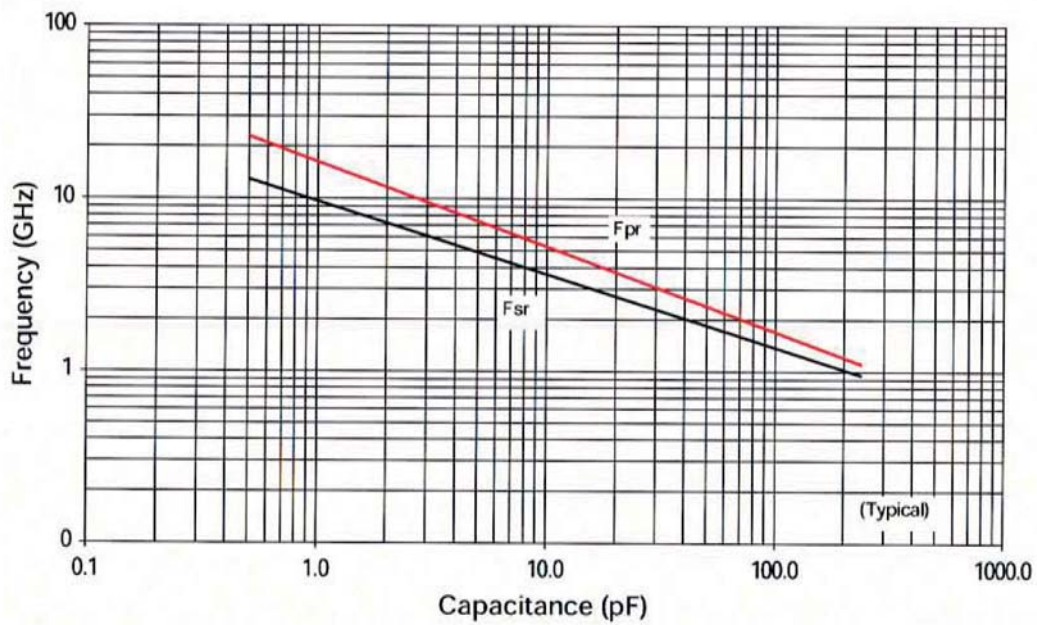
UQ CS Resonant Frequency



### UQ CF ESR vs. Frequency



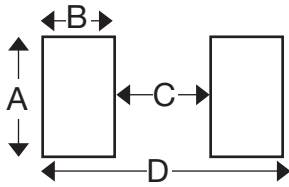
### UQ CF Resonant Frequency



# Microwave MLCs



## UQ Series High Q Ultra Low ESR MLC



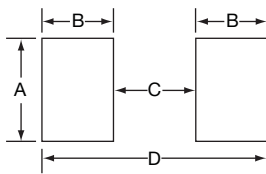
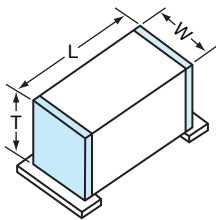
### MOUNTING PAD DIMENSIONS CASE CA: inches (millimeters)

|                  | Pad Size     | A min         | B min         | C min         | D min         |
|------------------|--------------|---------------|---------------|---------------|---------------|
| Vertical Mount   | Normal       | 0.070 (1.778) | 0.050 (1.270) | 0.030 (0.762) | 0.130 (3.302) |
|                  | High Density | 0.050 (1.270) | 0.030 (0.762) | 0.030 (0.762) | 0.090 (2.286) |
| Horizontal Mount | Normal       | 0.080 (2.032) | 0.050 (1.270) | 0.030 (0.762) | 0.130 (3.302) |
|                  | High Density | 0.060 (1.524) | 0.030 (0.762) | 0.030 (0.762) | 0.090 (2.286) |

### MOUNTING PAD DIMENSIONS CASE CB: inches (millimeters)

|                  | Cap Value     | Pad Size     | A min         | B min         | C min         | D min         |
|------------------|---------------|--------------|---------------|---------------|---------------|---------------|
| Vertical Mount   | 0.1 pF        | Normal       | 0.065 (1.651) | 0.050 (1.270) | 0.075 (1.905) | 0.175 (4.445) |
|                  |               | High Density | 0.045 (1.143) | 0.030 (0.762) | 0.075 (1.905) | 0.135 (3.429) |
|                  | 0.2 pF        | Normal       | 0.090 (2.286) | 0.050 (1.270) | 0.075 (1.905) | 0.175 (4.445) |
|                  |               | High Density | 0.070 (1.778) | 0.030 (0.762) | 0.075 (1.905) | 0.135 (3.429) |
|                  | 0.3 to 510 pF | Normal       | 0.110 (2.794) | 0.050 (1.270) | 0.075 (1.905) | 0.175 (4.445) |
|                  |               | High Density | 0.090 (2.286) | 0.030 (0.762) | 0.075 (1.905) | 0.135 (3.429) |
| Horizontal Mount | > 510 pF      | Normal       | 0.120 (3.048) | 0.050 (1.270) | 0.075 (1.905) | 0.175 (4.445) |
|                  |               | High Density | 0.100 (2.540) | 0.030 (0.762) | 0.075 (1.905) | 0.135 (3.429) |
|                  | All Values    | Normal       | 0.130 (3.302) | 0.050 (1.270) | 0.075 (1.905) | 0.175 (4.445) |
|                  |               | High Density | 0.110 (2.794) | 0.030 (0.762) | 0.075 (1.905) | 0.135 (3.429) |

### MOUNTING PAD DIMENSIONS CASE CL, CS & CF: inches (millimeters)



































| Case        | A min.          | B min.          | C min.           | D min.          |
|-------------|-----------------|-----------------|------------------|-----------------|
| 0402 (1005) | .0275<br>(0.70) | .0354<br>(0.90) | .0157<br>(0.40)  | .0866<br>(2.20) |
| 0603 (1608) | .0393<br>(1.00) | .0433<br>(1.10) | .03236<br>(0.60) | .110<br>(2.80)  |
| 0805 (2012) | .0590<br>(1.50) | .0512<br>(1.30) | .0236<br>(0.60)  | .1259<br>(3.20) |

# Microwave MLCs

## UQ Series High Q Ultra Low ESR MLC



### DESIGN KITS

| Kit #      | Compliance   | Description   | Cap Value      | Tol. (pF) |
|------------|--|---|----------------|-----------|
| KITUQ800LF | <br>     | UQCA 0505 Series Ultra-Low ESR<br>High Q Microwave Capacitors<br>16 different values, 15 pcs min. per value | 0.1 to 2.0     | ±0.1      |
|            |  |   |                | ±0.25     |
| KITUQ810LF | <br>     | UQCA 0505 Series Ultra-Low ESR<br>High Q Microwave Capacitors<br>16 different values, 15 pcs min. per value | 1.0 to 10 pF   | ±0.1      |
|            |  |   |                | ±0.25     |
|            |  |   |                | ±5%       |
| KITUQ820LF | <br>     | UQCA 0505 Series Ultra-Low ESR<br>High Q Microwave Capacitors<br>16 different values, 15 pcs min. per value | 10 to 100 pF   | ±5%       |
| KITUQ830LF | <br>     | UQCB 1111 Series Ultra-Low ESR<br>High Q Microwave Capacitors<br>16 different values, 15 pcs min. per value | 1.0 to 10 pF   | ±0.1      |
|            |  |   |                | ±0.25     |
|            |  |   |                | ±5%       |
| KITUQ840LF | <br>     | UQCB 1111 Series Ultra-Low ESR<br>High Q Microwave Capacitors<br>16 different values, 15 pcs min. per value | 10 to 100 pF   | ±5%       |
| KITUQ850LF | <br>     | UQCB 1111 Series Ultra-Low ESR<br>High Q Microwave Capacitors<br>16 different values, 15 pcs min. per value | 100 to 1000 pF | ±5%       |
|            |  |   |                | ±10%      |
| KITUQ360LF | <br>     | UQCL 0402 Series Ultra-Low ESR<br>High Q Microwave Capacitors<br>16 different values, 15 pcs min. per value | 0.1 to 2.0     | ±0.1      |
|            |  |   |                | ±0.25     |
| KITUQ370LF | <br>     | UQCL 0402 Series Ultra-Low ESR<br>High Q Microwave Capacitors<br>16 different values, 15 pcs min. per value | 1.0 to 10      | ±0.1      |
|            |  |   |                | ±0.25     |
|            |  |   |                | ±5%       |
| KITUQ380LF | <br> | UQCL 0402 Series Ultra-Low ESR<br>High Q Microwave Capacitors<br>8 different values, 15 pcs min. per value  | 10 to 27       | ±5%       |
| KITUQ250LF | <br> | UQCS 0603 Series Ultra-Low ESR<br>High Q Microwave Capacitors<br>16 different values, 15 pcs min. per value | 0.1 to 2.0     | ±0.1      |
|            |  |   |                | ±0.25     |
| KITUQ260LF | <br> | UQCS 0603 Series Ultra-Low ESR<br>High Q Microwave Capacitors<br>16 different values, 15 pcs min. per value | 1.0 to 10      | ±0.1      |
|            |  |   |                | ±0.25     |
|            |  |   |                | ±5%       |
| KITUQ270LF | <br> | UQCS 0603 Series Ultra-Low ESR<br>High Q Microwave Capacitors<br>16 different values, 15 pcs min. per value | 10 to 100      | ±5%       |
| KITUQ320LF | <br> | UQCF 0805 Series Ultra-Low ESR<br>High Q Microwave Capacitors<br>16 different values, 15 pcs min. per value | 0.1 to 2.0     | ±0.1      |
|            |  |   |                | ±0.25     |
| KITUQ330LF | <br> | UQCF 0805 Series Ultra-Low ESR<br>High Q Microwave Capacitors<br>16 different values, 15 pcs min. per value | 1.0 to 10      | ±0.1      |
|            |  |   |                | ±0.25     |
|            |  |   |                | ±5%       |
| KITUQ340LF | <br> | UQCF 0805 Series Ultra-Low ESR<br>High Q Microwave Capacitors<br>16 different values, 15 pcs min. per value | 10 to 100      | ±5%       |
| KITUQ350LF | <br> | UQCF 0805 Series Ultra-Low ESR<br>High Q Microwave Capacitors<br>7 different values, 15 pcs min. per value  | 100 to 240     | ±5%       |



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[CGA2B2C0G1H040C](#) [CGA2B2C0G1H050C](#) [CGA2B2C0G1H060D](#) [CGA2B2C0G1H070D](#) [CGA2B2C0G1H120J](#) [CGA2B2C0G1H151J](#)  
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