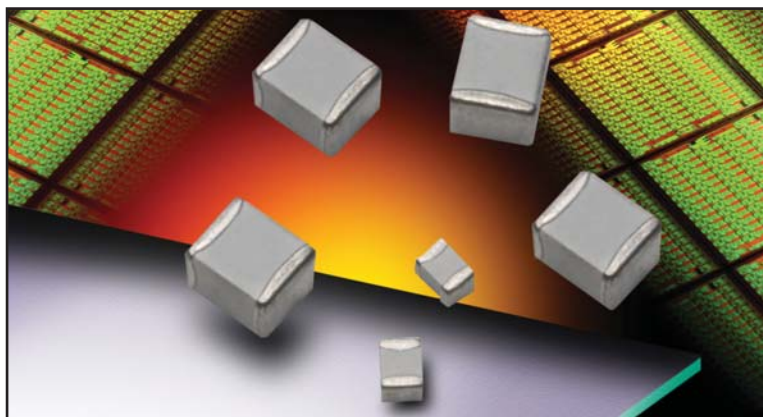


# Microwave MLCs

## 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:

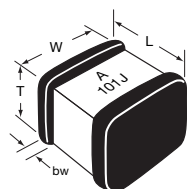
- RF Power Amplifiers
- Low Noise Amplifiers
- Filter Networks
- MRI Systems

### HOW TO ORDER

|                  |                                                                                                                                       |                                                                                                        |                                                       |                                                                                                                                                                                          |                                                                                                                                                      |                                                |                                                                                                                          |                                                                                                                                                     |
|------------------|---------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|-------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>UQ</b>        | <b>CB</b>                                                                                                                             | <b>7</b>                                                                                               | <b>A</b>                                              | <b>100</b>                                                                                                                                                                               | <b>J</b>                                                                                                                                             | <b>A</b>                                       | <b>T</b>                                                                                                                 | <b>ME</b>                                                                                                                                           |
| <b>AVX Style</b> | <b>Case Size</b><br>CA = 0605<br>CB = 1210<br>CR = 0709<br>CL = 0402<br>CS = 0603<br>CF = 0805<br><br>See mechanical dimensions below | <b>Voltage Code</b><br>5 = 50V<br>1 = 100V<br>E = 150V<br>2 = 200V<br>V = 250V<br>9 = 300V<br>7 = 500V | <b>Temperature Coefficient Code</b><br>A = 0±30ppm/°C | <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. | <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% | <b>Failure Rate Code</b><br>A = Not Applicable | <b>Termination Style Code</b><br>J = Nickel Barrier<br>Sn/Pb (60/40)<br>**T = 100% Tin<br>**C = Non-Magnetic Barrier/Tin | <b>Packaging Code</b><br>ME = 7" Reel Marked (0605, 1210 & 0709 only)<br>2A = 7" Unmarked (0402, 0603, & 0805 only)<br><br>* Vertical T&R available |

\*\*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 (DWV) | 250% of rated WVDC for 5 secs                                                                                                |
| Aging Effects                         | None                                                                                                                         |
| Piezoelectric Effects                 | None                                                                                                                         |
| Capacitance Drift                     | $\pm (0.02\% \text{ or } 0.02 \text{ pF})$ , 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                                                                                                          |

### 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     | G, J, K, M | 500  | 24      | G, J, K, M | 500  | 100     | G, J, K, M | 500  |
| 1.8     | B, C, D   | 500  | 6.2     | G, J, K, M | 500  | 27      | G, J, K, M | 500  |         |            |      |
| 1.9     | B, C, D   | 500  | 6.8     | G, J, K, M | 500  | 30      | G, J, K, M | 500  |         |            |      |
| 2.0     | B, C, D   | 500  | 7.5     | G, J, K, M | 500  | 33      | G, J, K, M | 500  |         |            |      |
| 2.1     | B, C, D   | 500  | 8.2     | G, J, K, M | 500  | 36      | G, J, K, M | 500  |         |            |      |
| 2.2     | B, C, D   | 500  | 9.1     | G, 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

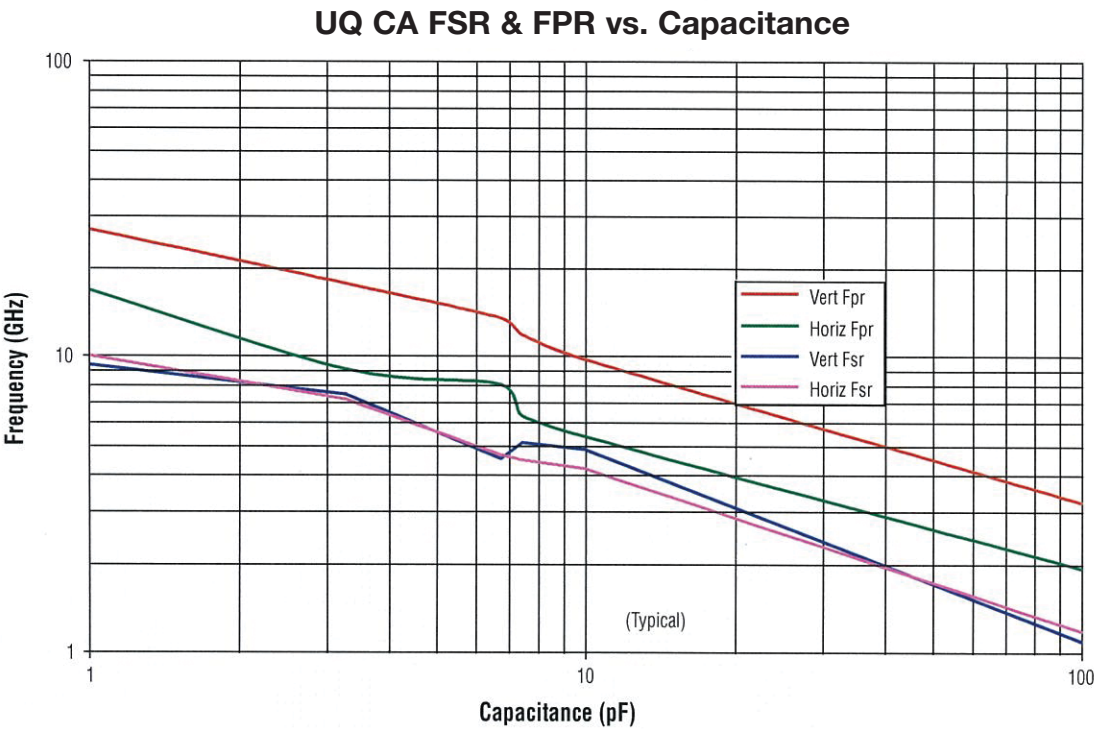
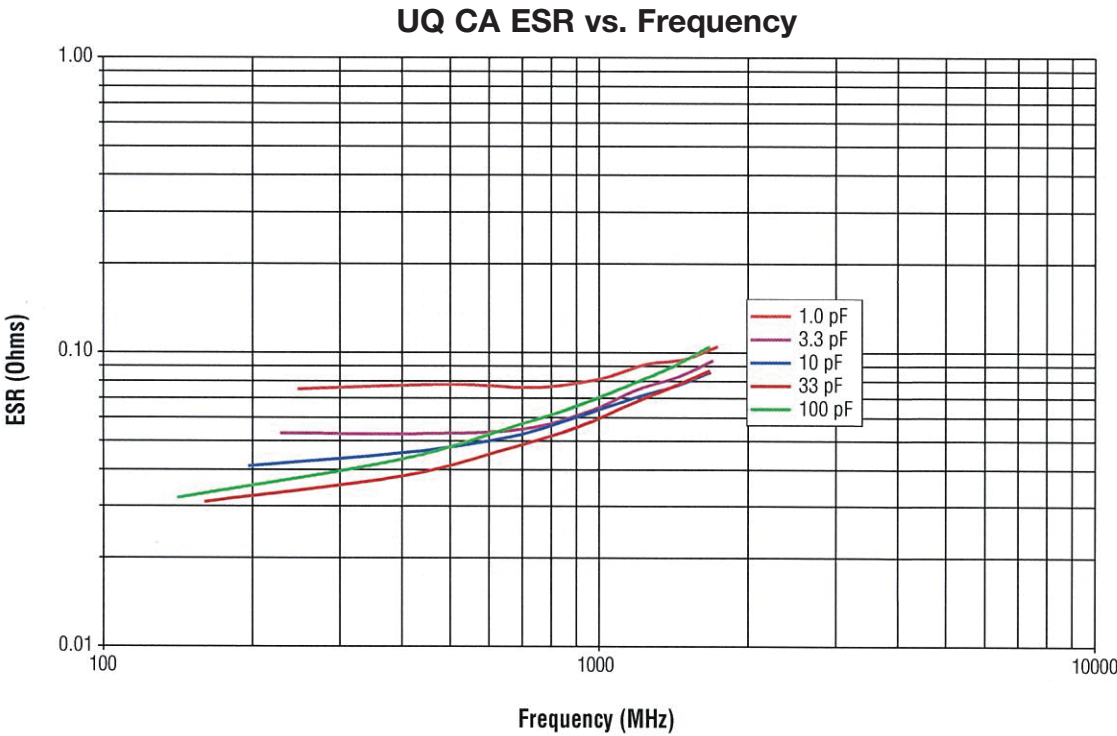
**TABLE V:**

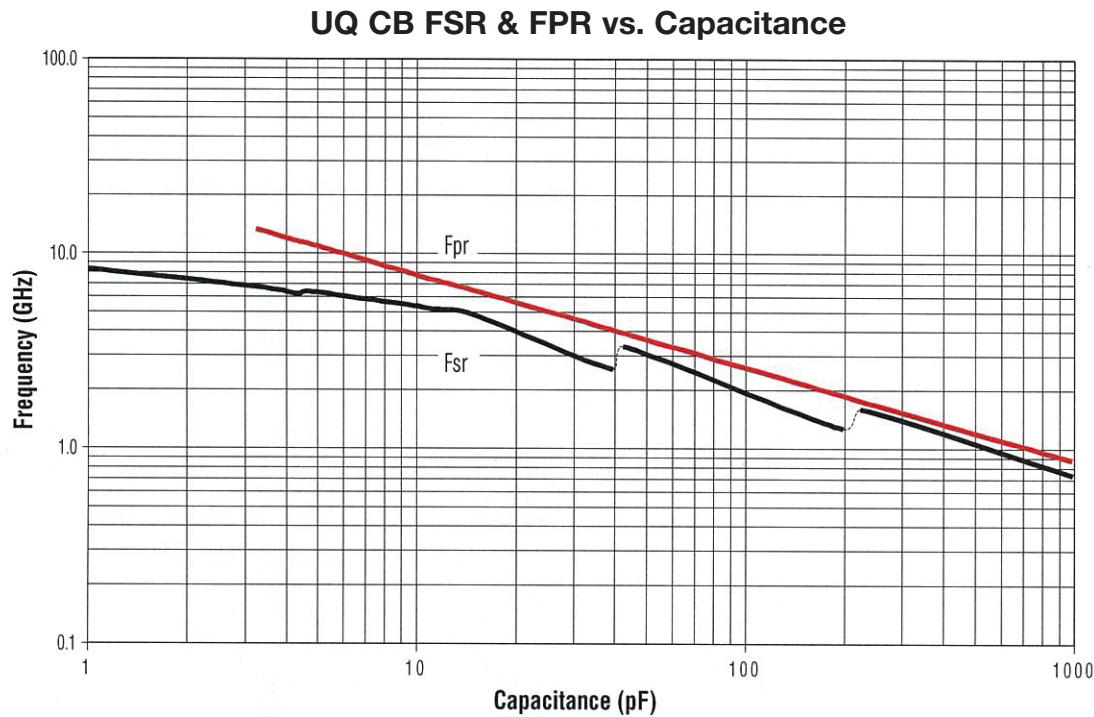
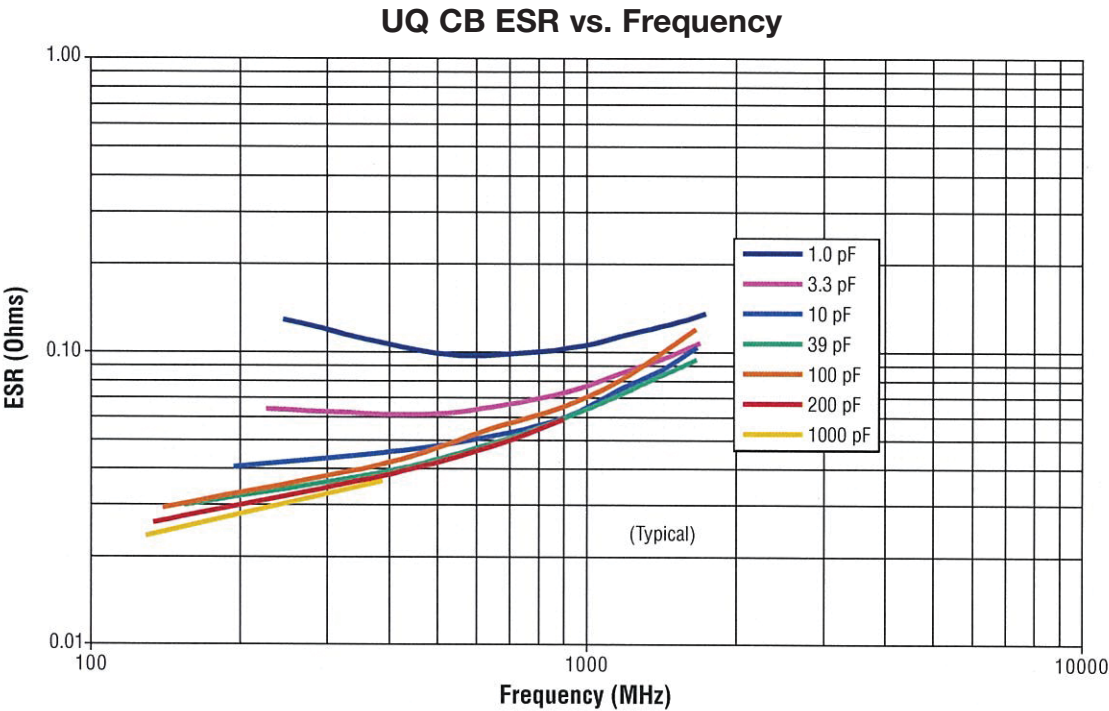
| Cap. pF | Cap. Tol.  | WVDC | Cap. pF | Cap. Tol.     | WVDC | Cap. pF | Cap. Tol.     | WVDC |
|---------|------------|------|---------|---------------|------|---------|---------------|------|
| 0.1     | A, B       | 250  | 2.7     | A, B, C, D    | 250  | 20      | F, G, J, K, M | 250  |
| 0.2     | 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  |         |               |      |

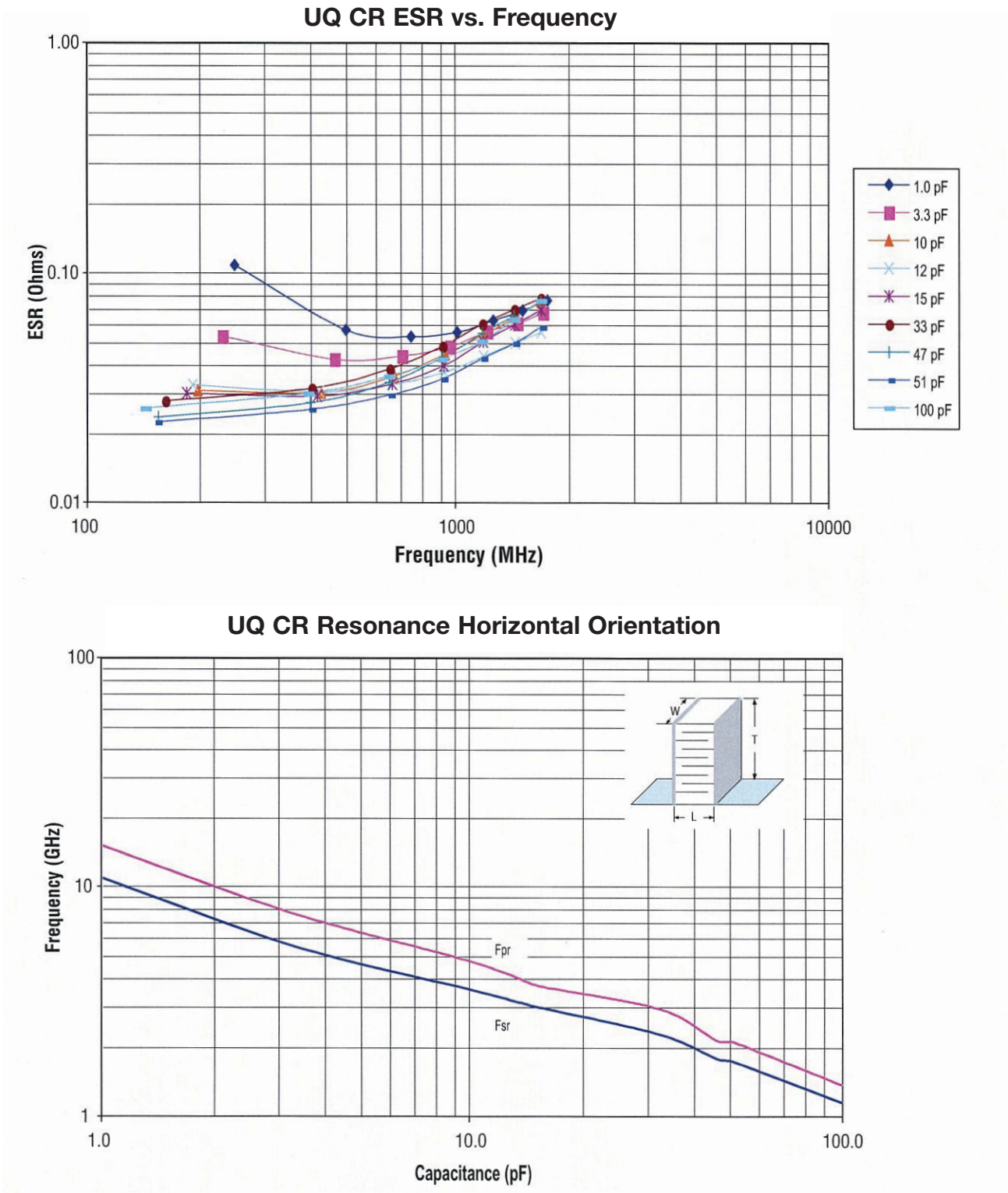
### Case Size F

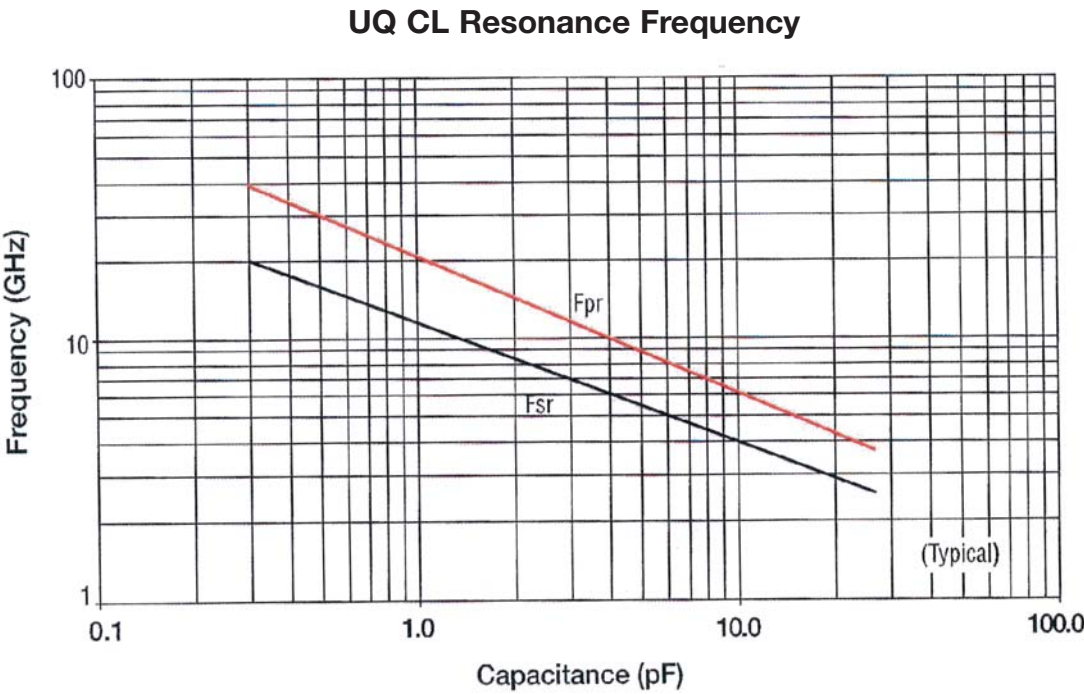
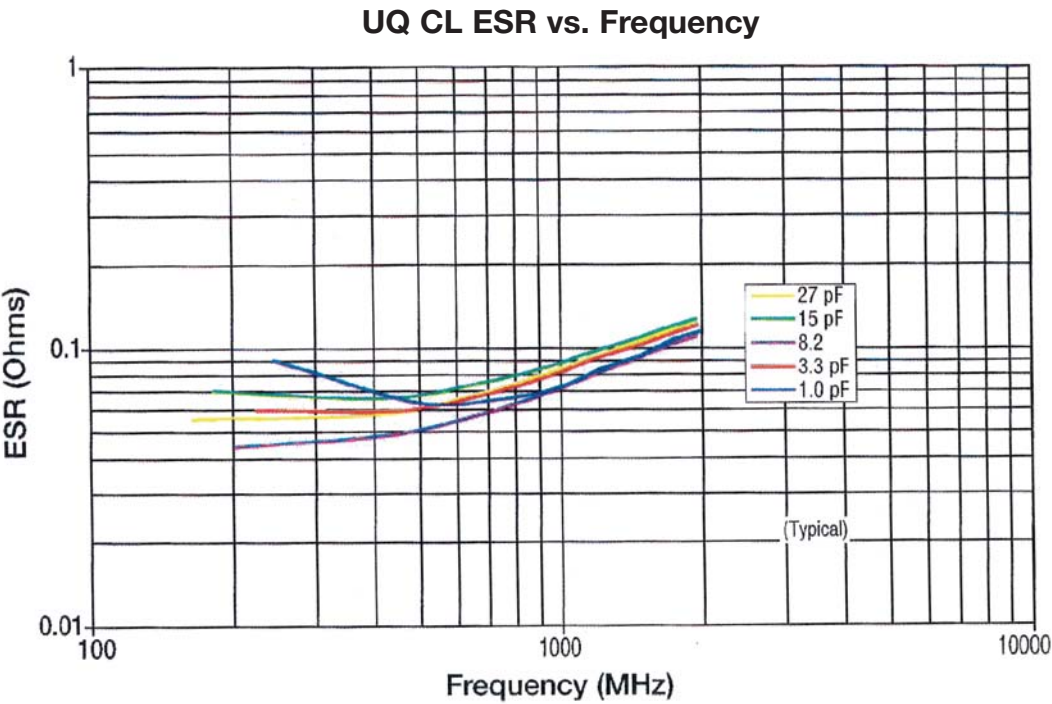
**TABLE VI:**

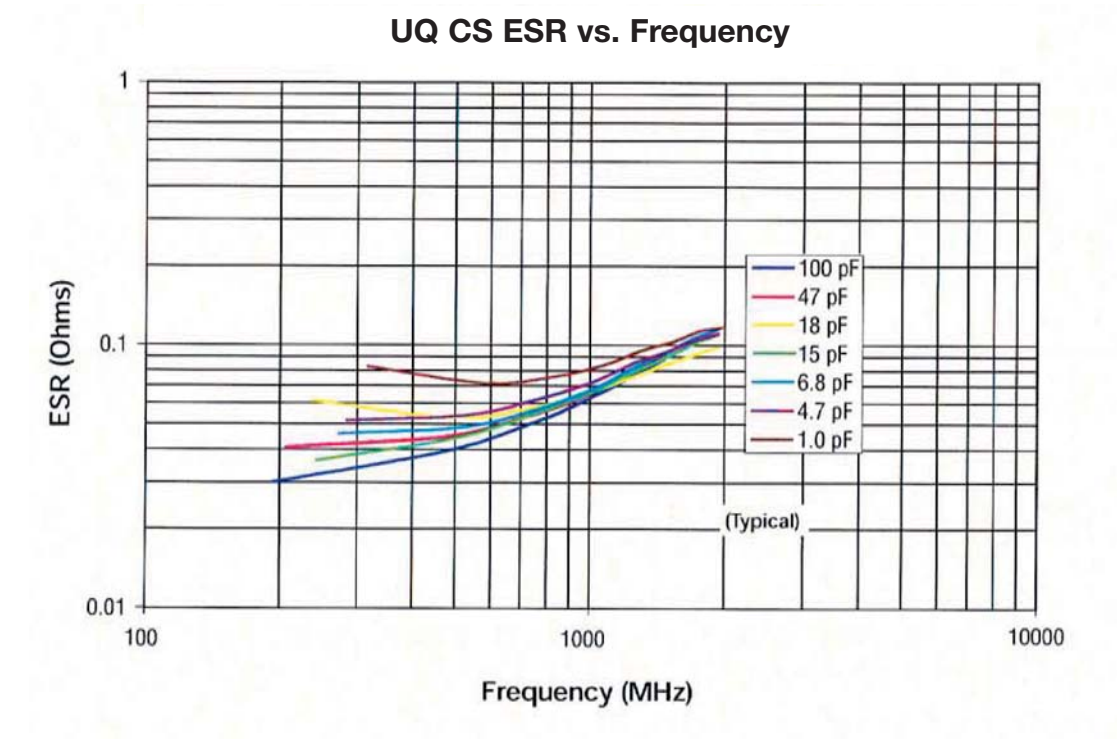
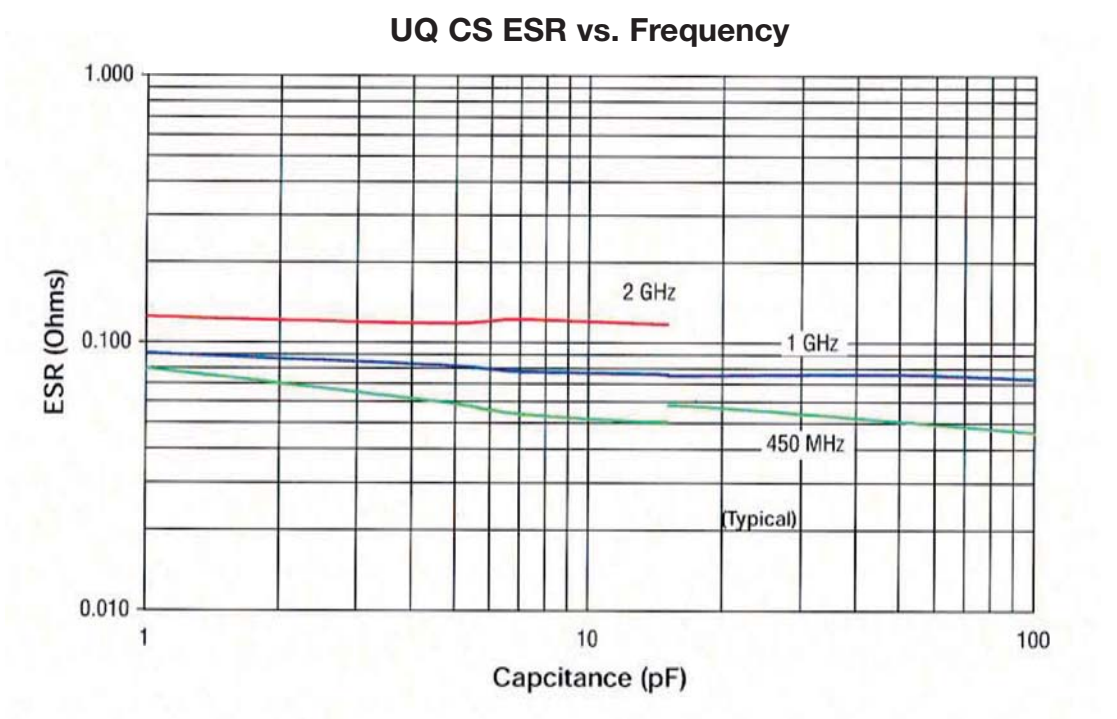
| Cap. pF | Cap. Tol.  | WVDC | Cap. pF | Cap. Tol.     | WVDC | Cap. pF | Cap. Tol.     | WVDC |
|---------|------------|------|---------|---------------|------|---------|---------------|------|
| 0.1     | A, B       | 250  | 3.3     | A, B, C, D    | 250  | 30      | F, G, J, K, M | 250  |
| 0.2     | 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  |



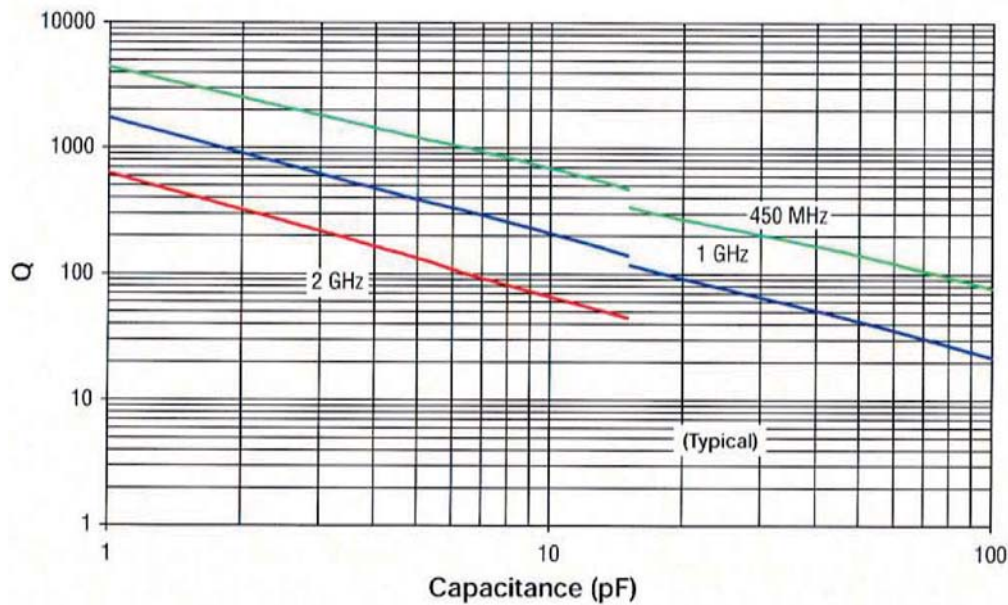




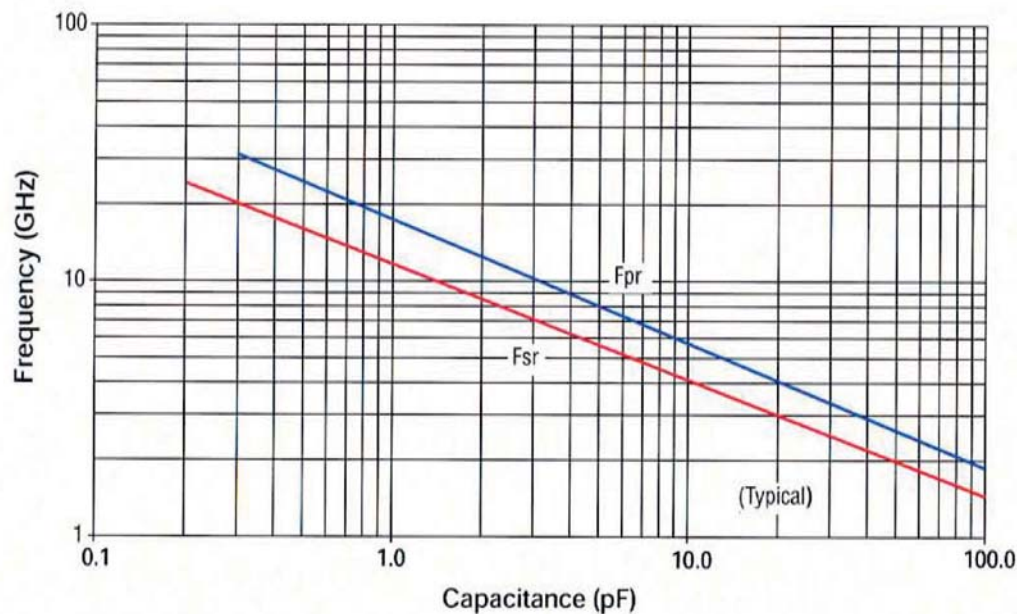


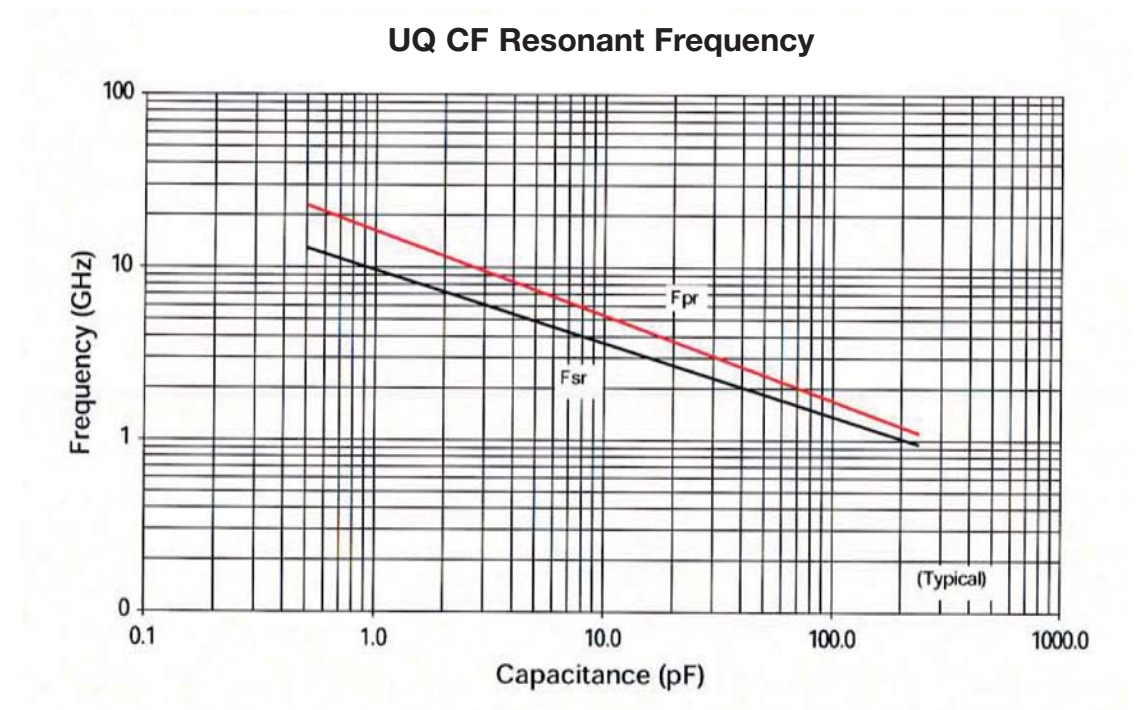
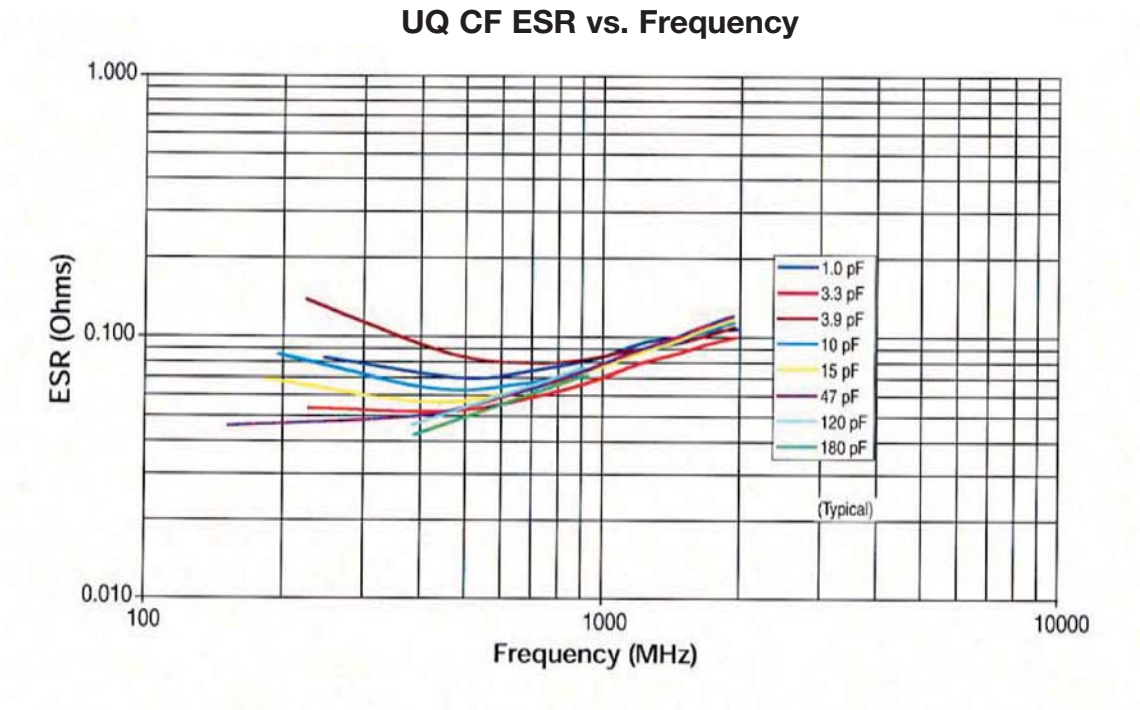


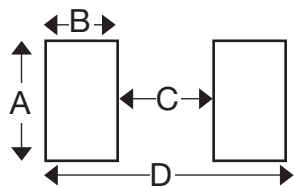
UQ CS Q vs. Capacitance



UQ CS Resonant Frequency







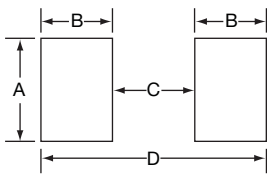
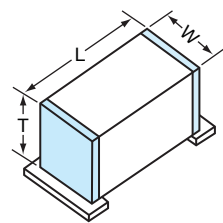
MOUNTING PAD DIMENSIONS CASE CA: inches (millimeters)

|                  | 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 | All Values    | 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) |
|                  |               | 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 (0.70) | .0354 (0.90) | .0157 (0.40)  | .0866 (2.20) |
| 0603 (1608) | .0393 (1.00) | .0433 (1.10) | .03236 (0.60) | .110 (2.80)  |
| 0805 (2012) | .0590 (1.50) | .0512 (1.30) | .0236 (0.60)  | .1259 (3.20) |

# Microwave MLCs



## UQ Series High Q Ultra Low ESR MLC

### DESIGN KITS

| Kit #      | Compliance | Description                                                                                              | Cap Value      | Cap. Values (pF)                                                | Tol. (pF) |
|------------|------------|----------------------------------------------------------------------------------------------------------|----------------|-----------------------------------------------------------------|-----------|
| KITUQ800LF |            | UQCA 0605 Series Ultra-Low ESR High Q Microwave Capacitors<br>16 different values, 15 pcs min. per value | 0.1 to 2.0     | 0.1, 0.2, 0.3, 0.4, 0.5, 0.6, 0.7, 0.8, 0.9, 1.0, 1.1, 1.2, 1.5 | ±0.1      |
|            |            |                                                                                                          |                | 1.6, 1.8, 2.0                                                   | ±0.25     |
| KITUQ810LF |            | UQCA 0605 Series Ultra-Low ESR High Q Microwave Capacitors<br>16 different values, 15 pcs min. per value | 1.0 to 10 pF   | 1.0, 1.2, 1.5, 1.8, 2.0, 2.2, 2.4, 2.7, 3.0, 3.3                | ±0.1      |
|            |            |                                                                                                          |                | 3.9, 4.7, 5.6, 6.8, 8.0                                         | ±0.25     |
|            |            |                                                                                                          |                | 10                                                              | ±5%       |
| KITUQ820LF |            | UQCA 0605 Series Ultra-Low ESR High Q Microwave Capacitors<br>16 different values, 15 pcs min. per value | 10 to 100 pF   | 10, 12, 15, 18, 20, 22, 24, 27, 30, 33, 39, 47, 56, 68, 82, 100 | ±5%       |
| KITUQ830LF |            | UQCB 1210 Series Ultra-Low ESR High Q Microwave Capacitors<br>16 different values, 15 pcs min. per value | 1.0 to 10 pF   | 1.0, 1.2, 1.5, 1.8, 2.0, 2.2, 2.4, 2.7, 3.0, 3.3                | ±0.1      |
|            |            |                                                                                                          |                | 3.9, 4.7, 5.6, 6.8, 8.0                                         | ±0.25     |
|            |            |                                                                                                          |                | 10                                                              | ±5%       |
| KITUQ840LF |            | UQCB 1210 Series Ultra-Low ESR High Q Microwave Capacitors<br>16 different values, 15 pcs min. per value | 10 to 100 pF   | 10, 12, 15, 18, 20, 22, 24, 27, 30, 33, 39, 47, 56, 68, 82, 100 | ±5%       |
| KITUQ850LF |            | UQCB 1210 Series Ultra-Low ESR High Q Microwave Capacitors<br>16 different values, 15 pcs min. per value | 100 to 1000 pF | 100, 120, 150, 180, 200, 220, 240, 270, 300, 330, 390, 470      | ±5%       |
|            |            |                                                                                                          |                | 560, 680, 820, 1000                                             | ±10%      |
| KITUQ360LF |            | UQCL 0402 Series Ultra-Low ESR High Q Microwave Capacitors<br>16 different values, 15 pcs min. per value | 0.1 to 2.0     | 0.1, 0.2, 0.3, 0.4, 0.5, 0.6, 0.7, 0.8, 0.9, 1.0, 1.1, 1.2, 1.5 | ±0.1      |
|            |            |                                                                                                          |                | 1.6, 1.8, 2.0                                                   | ±0.25     |
| KITUQ370LF |            | UQCL 0402 Series Ultra-Low ESR High Q Microwave Capacitors<br>16 different values, 15 pcs min. per value | 1.0 to 10      | 1.0, 1.2, 1.5, 1.8, 2.0, 2.2, 2.4, 2.7, 3.0, 3.3                | ±0.1      |
|            |            |                                                                                                          |                | 3.9, 4.7, 5.6, 6.8, 8.2                                         | ±0.25     |
|            |            |                                                                                                          |                | 10                                                              | ±5%       |
| KITUQ380LF |            | UQCL 0402 Series Ultra-Low ESR High Q Microwave Capacitors<br>8 different values, 15 pcs min. per value  | 10 to 27       | 10, 12, 15, 18, 20, 22, 24, 27                                  | ±5%       |
| KITUQ250LF |            | UQCS 0603 Series Ultra-Low ESR High Q Microwave Capacitors<br>16 different values, 15 pcs min. per value | 0.1 to 2.0     | 0.1, 0.2, 0.3, 0.4, 0.5, 0.6, 0.7, 0.8, 0.9, 1.0, 1.1, 1.2, 1.5 | ±0.1      |
|            |            |                                                                                                          |                | 1.6, 1.8, 2.0                                                   | ±0.25     |
| KITUQ260LF |            | UQCS 0603 Series Ultra-Low ESR High Q Microwave Capacitors<br>16 different values, 15 pcs min. per value | 1.0 to 10      | 1.0, 1.2, 1.5, 1.8, 2.0, 2.2, 2.4, 2.7, 3.0, 3.3                | ±0.1      |
|            |            |                                                                                                          |                | 3.9, 4.7, 5.6, 6.8, 8.2                                         | ±0.25     |
|            |            |                                                                                                          |                | 10                                                              | ±5%       |
| KITUQ270LF |            | UQCS 0603 Series Ultra-Low ESR High Q Microwave Capacitors<br>16 different values, 15 pcs min. per value | 10 to 100      | 10, 12, 15, 18, 20, 22, 24, 27, 30, 33, 39, 47, 56, 68, 82, 100 | ±5%       |
| KITUQ320LF |            | UQCF 0805 Series Ultra-Low ESR High Q Microwave Capacitors<br>16 different values, 15 pcs min. per value | 0.1 to 2.0     | 0.1, 0.2, 0.3, 0.4, 0.5, 0.6, 0.7, 0.8, 0.9, 1.0, 1.1, 1.2, 1.5 | ±0.1      |
|            |            |                                                                                                          |                | 1.6, 1.8, 2.0                                                   | ±0.25     |
| KITUQ330LF |            | UQCF 0805 Series Ultra-Low ESR High Q Microwave Capacitors<br>16 different values, 15 pcs min. per value | 1.0 to 10      | 1.0, 1.2, 1.5, 1.8, 2.0, 2.2, 2.4, 2.7, 3.0, 3.3                | ±0.1      |
|            |            |                                                                                                          |                | 3.9, 4.7, 5.6, 6.8, 8.2                                         | ±0.25     |
|            |            |                                                                                                          |                | 10                                                              | ±5%       |
| KITUQ340LF |            | UQCF 0805 Series Ultra-Low ESR High Q Microwave Capacitors<br>16 different values, 15 pcs min. per value | 10 to 100      | 10, 12, 15, 18, 20, 22, 24, 27, 30, 33, 39, 47, 56, 68, 82, 100 | ±5%       |
| KITUQ350LF |            | UQCF 0805 Series Ultra-Low ESR High Q Microwave Capacitors<br>7 different values, 15 pcs min. per value  | 100 to 240     | 100, 120, 150, 180, 200, 220, 250                               | ±5%       |