



# Ultra-low ESR MLCC capacitors

## COG/NPO

The Ultra-low ESR range offers a very stable, High Q material system that provides excellent, low loss performance in systems below 3GHz.

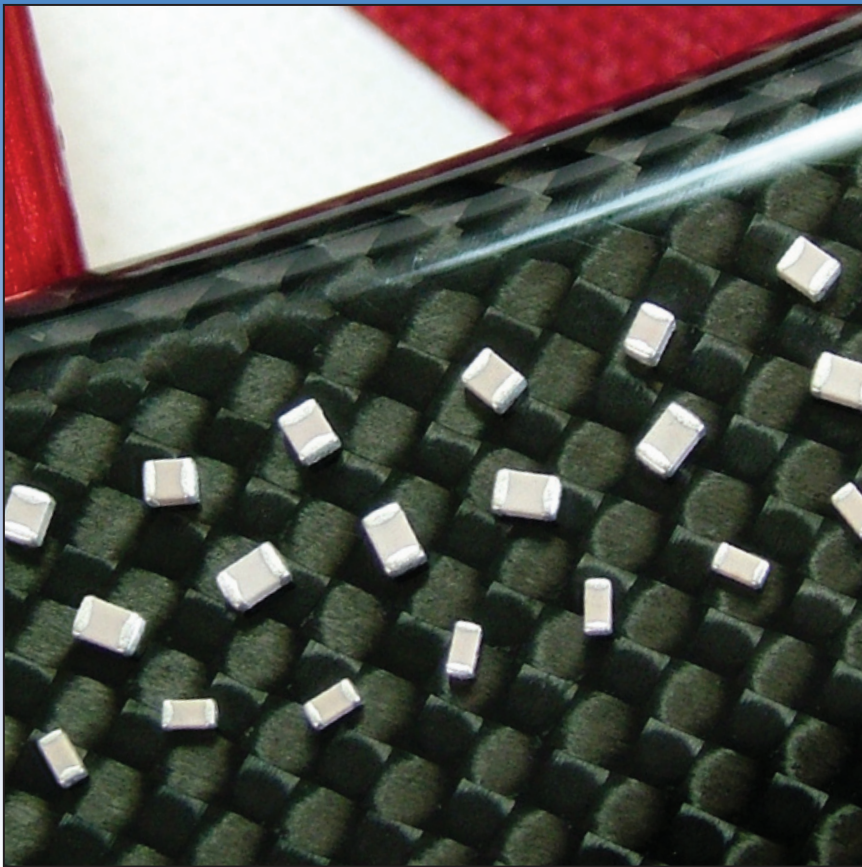
Available with various termination options including FlexiCap™, this range of high frequency capacitors is suitable for many applications where economical, high performance is required.

### Features

- Ultra-low ESR
- High working voltages, up to 500Vdc
- High self-resonant frequencies
- Capacitance range 0.5pF to 240pF
- Case sizes 0603, 0805 and 1111

### Applications

- DC Blocking
- High power RF circuits
- Amplifier matching networks
- VCO frequency stabilisation
- Filtering, diplexers and antenna matching
- Bypass
- Coupling
- Tuning and Feedback
- High Q and microwave



## Specification

### Capacitance Values

#### COG/NPO

0.5pF to 240pF

See table below for full list of values

### Electrical

#### Operating Temperature

-55°C to +125°C

#### Temperature Coefficient (Typical)

0±30ppm/°C

#### Insulation Resistance

Time constant (Ri xCr) (whichever is the least)

100GΩ or 1000s

#### Ageing Rate

Zero

### Mechanical

#### Termination Material

See ordering information below

#### Solderability

IEC 60068-2-58. Passed 3 times reflow profile defined in J-STD-020

#### Printing

Consult sales office

#### Lead Free Soldering

This range is fully compliant with the RoHS and WEEE directives and parts are compatible with lead free solders.

#### Climatic Category

55/125/56

#### Reeled Quantities

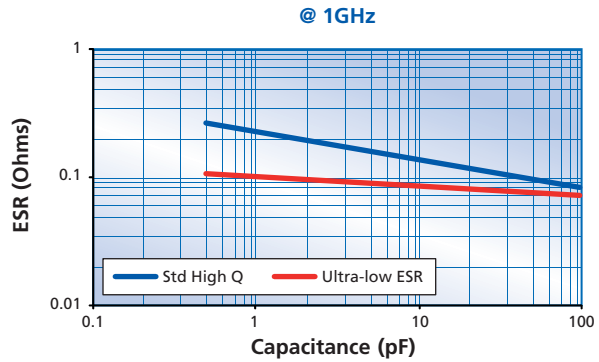
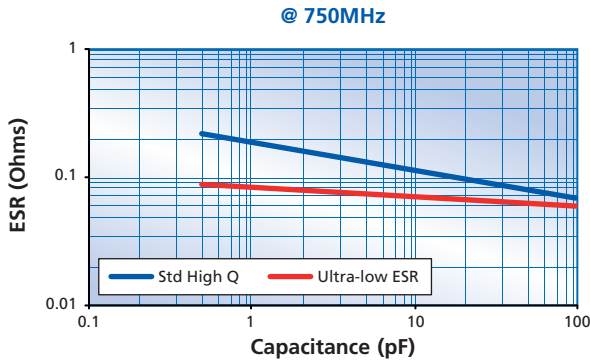
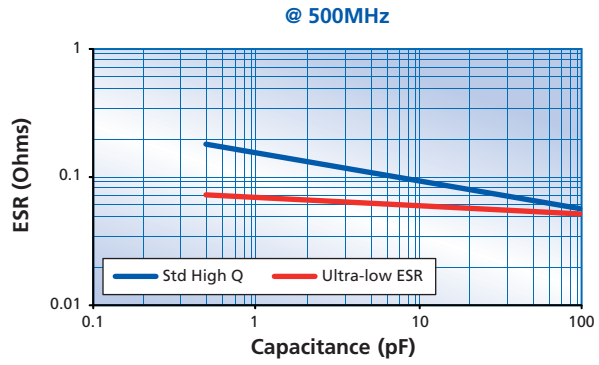
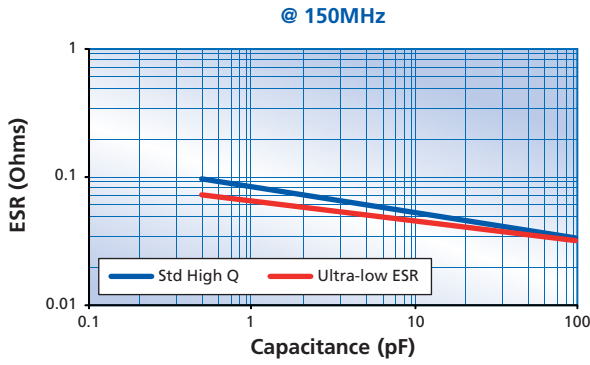
See Capacitance table below

## Maximum Capacitance Values

Chip Size	0603	0805	1111
Min Cap	0.5pF	0.8pF	0.7pF
200V250V	100pF	240pF	-
500V	-	-	240pF
Tape quantities	7" reel - 4,000	7" reel - 3,000	7" reel - 1,000
	13" reel - 16,000	13" reel - 12,000	13" reel - 5,000

**NOTE:** Below 1pF capacitance values are available in 0.1pF steps. Above 1pF capacitance values are available in E24 series values. Other values and taping quantities may be available on request, consult the sales office for details.

ESR vs. Capacitance



\* Refer to the sales office for other chip size electrical data

Ordering Information

0805	J	250	0101	J	U	T
Chip size	Termination	Voltage	Capacitance in picofarads (pF)	Capacitance tolerance	Dielectric	Packaging
0603 0805 1111	<p><b>Y</b> = FlexiCap™ termination base with nickel barrier (100% matte tin plating). RoHS compliant. Lead free.</p> <p><b>H</b> = FlexiCap™ termination base with nickel barrier (Tin/lead plating with min. 10% lead).</p> <p><b>J</b> = Silver base with nickel barrier (100% matte tin plating). RoHS compliant. Lead free.</p> <p><b>A</b> = Silver base with nickel barrier (Tin/lead plating with min. 10% lead).</p>	<p>200 = 200V 250 = 250V 500 = 500V</p>	<p>&lt;1.0pF Insert a P for the decimal point as the first character. eg. P300 = 0.3pF Values in 0.1pF steps</p> <p>≥1.0pF &amp; &lt;10pF Insert a P for the decimal point as the second character. eg. 8P20 = 8.2pF Values are E24 series</p> <p>≥10pF First digit is 0. Second and third digits are significant figures of capacitance code. Fourth digit is number of zeros eg. 0101 = 100pF Values are E24 series</p>	<p>&lt;4.7pF H = ±0.05pF B = ±0.1pF C = ±0.25pF D = ±0.5pF</p> <p>&lt;10pF B = ±0.1pF C = ±0.25pF D = ±0.5pF</p> <p>≥10pF F = ±1% G = ±2% J = ±5% K = ±10%</p>	<p><b>U</b> = Ultra-low ESR</p>	<p><b>T</b> = 178mm (7") reel <b>R</b> = 330mm (13") reel <b>B</b> = Bulk pack - tubs</p>



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Knowles:

[0805J2501P5BUT](#) [Ultra Low ESR Kit 1](#)