



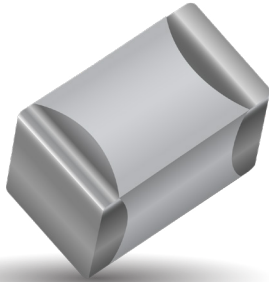
**THE DATASHEET OF  
SQCFVA4R7BAT1A**



# RF/Microwave Capacitors

## RF/Microwave Multilayer Capacitors (MLC)

### SQCS (0603) SQCF (0805) Ultra Low ESR MLC



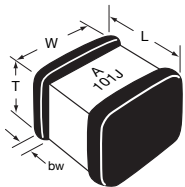
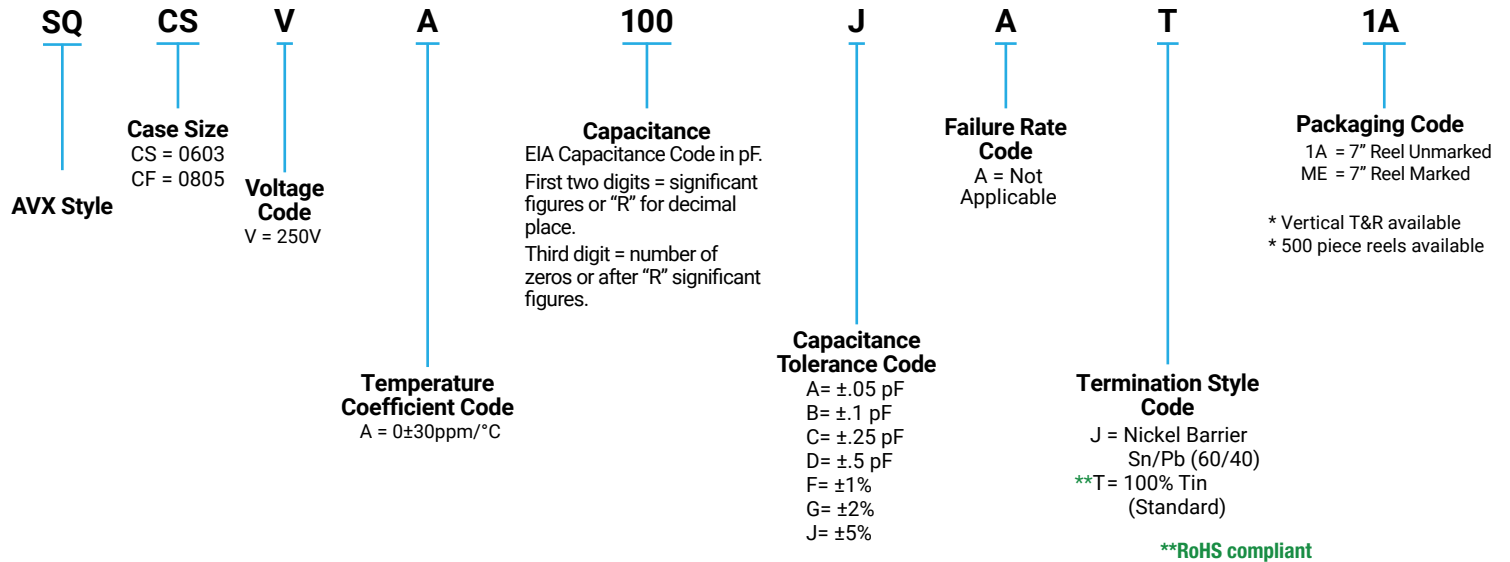
#### FEATURES:

- Low ESR
- High Q
- High Self Resonance
- Capacitance Range 0.1 pF to 240 pF
- EIA Size

#### APPLICATIONS:

- RF Power Amplifiers
- Low Noise Amplifiers
- Filter Networks
- Point to Point Radios

#### HOW TO ORDER



#### MECHANICAL DIMENSIONS:

inches (millimeters)

Case	Length (L)	Width (W)	Thickness (T)	Band Width (bw)
SQCS	.063±.006 (1.60±.152)	.032±.006 (.813±.152)	.030 Max. (.762)	.014±.006 (.357±.152)
SQCF	.079±.008 (2.01±.200)	.049±.008 (1.24±.200)	.045 Max. (1.14)	.014±.006 (.357±.152)

#### TAPE & REEL: ALL TAPE AND REEL SPECIFICATIONS ARE IN COMPLIANCE WITH EIA RS481 (EQUIVALENT TO IEC 286 PART 3).

- 8mm carrier
- 7" reel = 4000 pcs (500 piece options)

**Not RoHS Compliant**



For RoHS compliant products,  
please select correct termination style.

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### SQ Series Ultra Low ESR MLC



#### ELECTRICAL SPECIFICATIONS

<b>Temperature Coefficient (TCC)</b>	(A) 0 ± 30 PPM/°C
<b>Operating Temperature</b>	-55°C to +125°C
<b>Quality Factor (Q)</b>	Greater than 2,000 at 1 MHz
<b>Insulation Resistance (IR)</b>	0.1 pF to 240 pF 10 <sup>9</sup> Megohms min. @ 25°C at rated WVDC 10 <sup>4</sup> Megohms min. @ 125°C at rated WVDC
<b>Working Voltage (WVDC)</b>	See Capacitance Values table
<b>Dielectric Withstanding Voltage (DWV)</b>	250% of rated WVDC for 5 secs
<b>Aging Effects</b>	None
<b>Piezoelectric Effects</b>	None
<b>Capacitance Drift</b>	± (0.02% or 0.02 pF), whichever is greater

#### ENVIRONMENTAL CHARACTERISTICS

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

<b>Thermal Shock</b>	Mil-STD-202, Method 107, Condition A
<b>Moisture Resistance</b>	Mil-STD-202, Method 106
<b>Low Voltage Humidity</b>	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
<b>Life Test</b>	Mil-STD-202, Method 108, for 2000 hours at 125°C
<b>Shock</b>	Mil-STD-202, Method 213, Condition J
<b>Vibration</b>	Mil-STD-202, Method 204, Condition B
<b>Immersion</b>	Mil-STD-202, Method 104, Condition B
<b>Salt Spray</b>	Mil-STD-202, Method 101, Condition B
<b>Solderability</b>	Mil-STD-202, Method 208
<b>Terminal Strength</b>	Mil-STD-202, Method 211
<b>Temperature Cycling</b>	Mil-STD-202, Method 102, Condition C
<b>Barometric Pressure</b>	Mil-STD-202, Method 105, Condition B
<b>Resistance to Solder Heat</b>	Mil-STD-202, Method 210, Condition C

# RF/Microwave Capacitors

## RF/Microwave Multilayer Capacitors (MLC)

### SQ Series Available Capacitance/Size/WVDC/T.C.



**TABLE I: TC: A (0±30PPM/°C) CASE SIZE S**

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

**TABLE II: TC: A (0±30PPM/°C) CASE SIZE F**

Cap. pF	Cap. Tol.	WVDC	Cap. pF	Cap. Tol.	WVDC	Cap. pF	Cap. Tol.	WVDC	Cap. pF	Cap. Tol.	WVDC
0.1	A, B	250	2.2	A, B, C	250	15	F, G, J	250	100	F, G, J	250
0.2	A, B	250	2.4	A, B, C	250	16	F, G, J	250	110	F, G, J	250
0.3	A, B	250	2.7	A, B, C	250	18	F, G, J	250	120	F, G, J	250
0.4	A, B	250	3.0	A, B, C	250	20	F, G, J	250	150	F, G, J	250
0.5	A, B, C	250	3.3	A, B, C	250	22	F, G, J	250	180	F, G, J	250
0.6	A, B, C	250	3.6	A, B, C	250	24	F, G, J	250	200	F, G, J	250
0.7	A, B, C	250	3.9	A, B, C	250	27	F, G, J	250	220	F, G, J	250
0.8	A, B, C	250	4.3	A, B, C	250	30	F, G, J	250	240	F, G, J	250
0.9	A, B, C	250	4.7	A, B, C	250	33	F, G, J	250			
1.0	A, B, C	250	5.1	A, B, C	250	36	F, G, J	250			
1.1	A, B, C	250	5.6	A, B, C	250	39	F, G, J	250			
1.2	A, B, C	250	6.2	A, B, C	250	43	F, G, J	250			
1.3	A, B, C	250	6.8	B, C, D	250	47	F, G, J	250			
1.4	A, B, C	250	7.5	B, C, D	250	51	F, G, J	250			
1.5	A, B, C	250	8.2	B, C, D	250	56	F, G, J	250			
1.6	A, B, C	250	9.1	B, C, D	250	62	F, G, J	250			
1.7	A, B, C	250	10	F, G, J	250	68	F, G, J	250			
1.8	A, B, C	250	11	F, G, J	250	75	F, G, J	250			
1.9	A, B, C	250	12	F, G, J	250	82	F, G, J	250			
2.0	A, B, C	250	13	F, G, J	250	91	F, G, J	250			

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### Typical ESR SQCS



### Typical ESR SQCF



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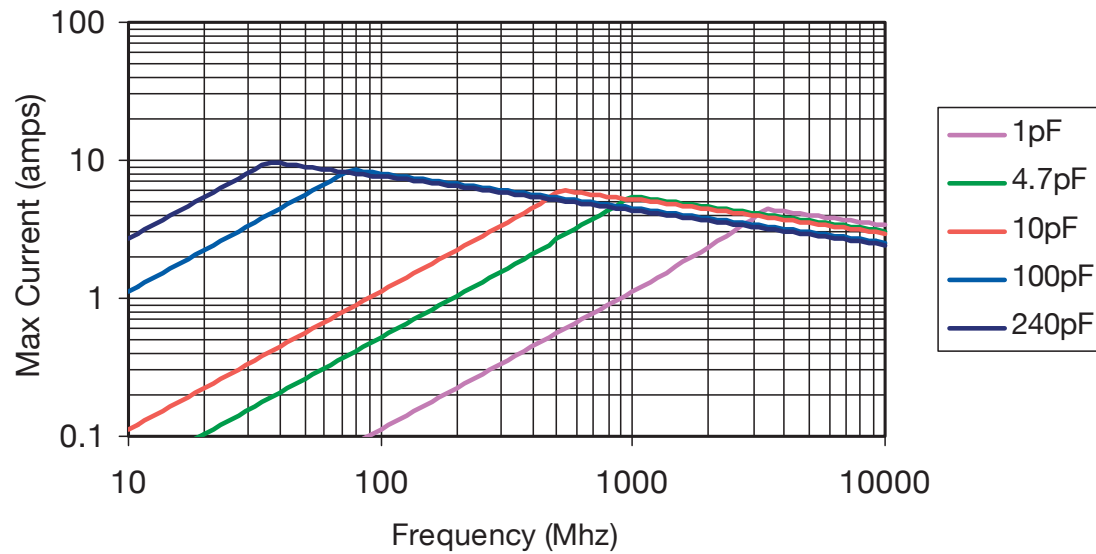
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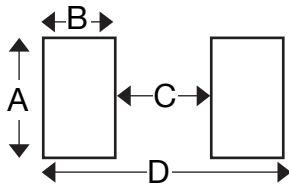
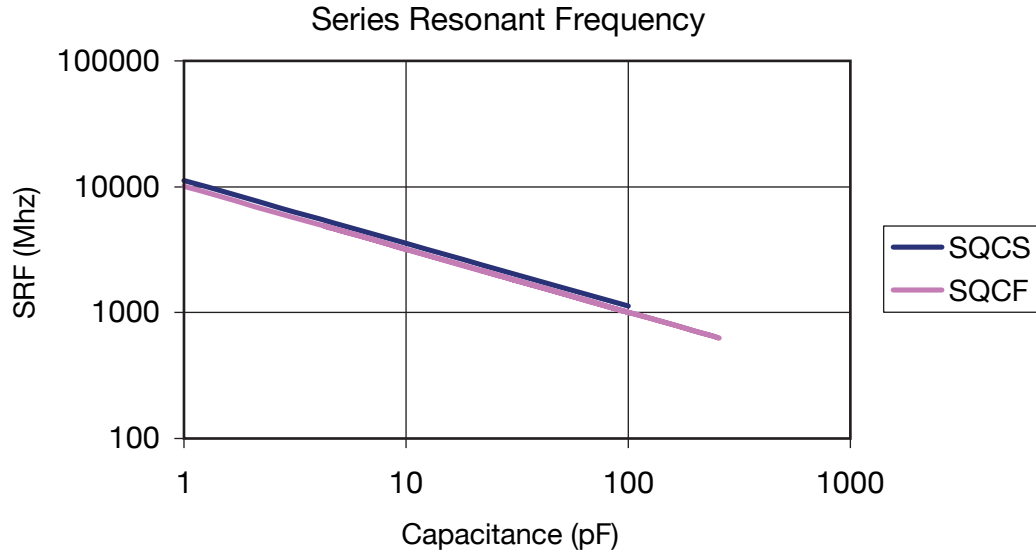


### Max Current SQCS



### Max Current SQCF





**MOUNTING PAD DIMENSIONS: inches (millimeters)**

Case	A min	B min	C min	D min
SQCA	0.082 (2.083)	0.051 (1.295)	0.032 (0.813)	0.130 (3.302)
SQCB	0.131 (3.327)	0.051 (1.295)	0.074 (1.880)	0.177 (4.496)
SQCS	0.038 (0.965)	0.043 (1.092)	0.025 (0.635)	0.112 (2.845)
SQCF	0.059 (1.499)	0.051 (1.295)	0.024 (0.610)	0.125 (3.175)

**SQCS & SQCF ENGINEERING KITS**

PN	Series	Diel	Term	Range	Different Values	# per value
Kit SQ1800LF	SQCF	C0G	100% Tin RoHS	.1 to 10pF	27	15
Kit SQ1900LF	SQCF	C0G	100% Tin RoHS	10 to 240pF	22	15
Kit SQ1500LF	SQCS	C0G	100%Tin RoHS	.1 to 10pF	27	15
Kit SQ1600LF	SQCS	C0G	100%Tin RoHS	10 to 100pF	16	15

Tolerance per PF:	
B from .1 to 3.3	J from 10 to 240
C from 3.9 to 8.2	

## Looking for pricing, stock, or lifecycle information?

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