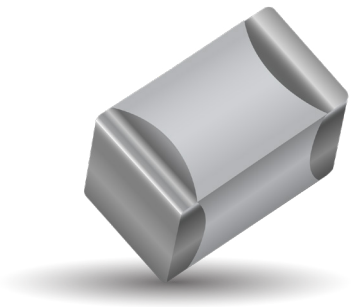
THE DATASHEET OF

SQCSVA6R2AAT1A

RF/Microwave Capacitors

RF/Microwave Multilayer Capacitors (MLC)

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



FEATURES:

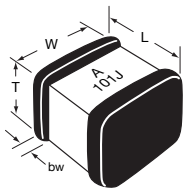
- Low ESR
- High Q
- High Self Resonance
- Capacitance Range 0.1 pF to 240 pF
- EIA Size

APPLICATIONS:

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

HOW TO ORDER

SQ	CS	V	A	100	J	A	T	1A
AVX Style	**Case Size** CS = 0603 CF = 0805	**Voltage Code** V = 250V	**Temperature Coefficient Code** A = 0±30ppm/°C	**Capacitance** EIA Capacitance Code in pF. First two digits = significant figures or "R" for decimal place. Third digit = number of zeros or after "R" significant figures.	**Capacitance Tolerance Code** A= ±.05 pF B= ±.1 pF C= ±.25 pF D= ±.5 pF F= ±1% G= ±2% J= ±5%	**Failure Rate Code** A = Not Applicable	**Termination Style Code** J = Nickel Barrier Sn/Pb (60/40) **T= 100% Tin (Standard) **RoHS compliant	**Packaging Code** 1A = 7" Reel Unmarked ME = 7" Reel Marked * Vertical T&R available * 500 piece reels available



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

LEAD-FREE
LEAD-FREE COMPATIBLE COMPONENT

RoHS COMPLIANT

For RoHS compliant products, please select correct termination style.

ELECTRICAL SPECIFICATIONS

Temperature Coefficient (TCC)	(A) 0 ± 30 PPM/°C
Operating Temperature	-55°C to +125°C
Quality Factor (Q)	Greater than 2,000 at 1 MHz
Insulation Resistance (IR)	0.1 pF to 240 pF 10^5 Megohms min. @ 25°C at rated WVDC 10^4 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	± (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

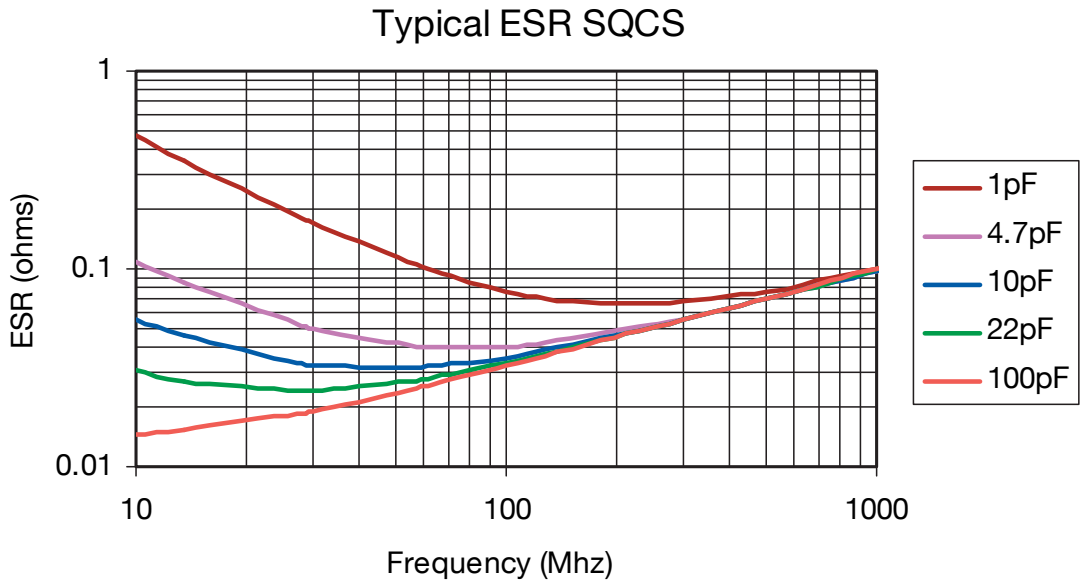
Themal Shock	Mil-STD-202, Method 107, Condition A
Moisture Resistance	Mil-STD-202, Method 106
Low Voltage Humidity	Mil-STD-202, Method 103, condition A, with 1.5 VDC applied while subjected to an environment of 85°C with 85% relative humidity for 240 hours
Life Test	Mil-STD-202, Method 108, for 2000 hours at 125°C
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

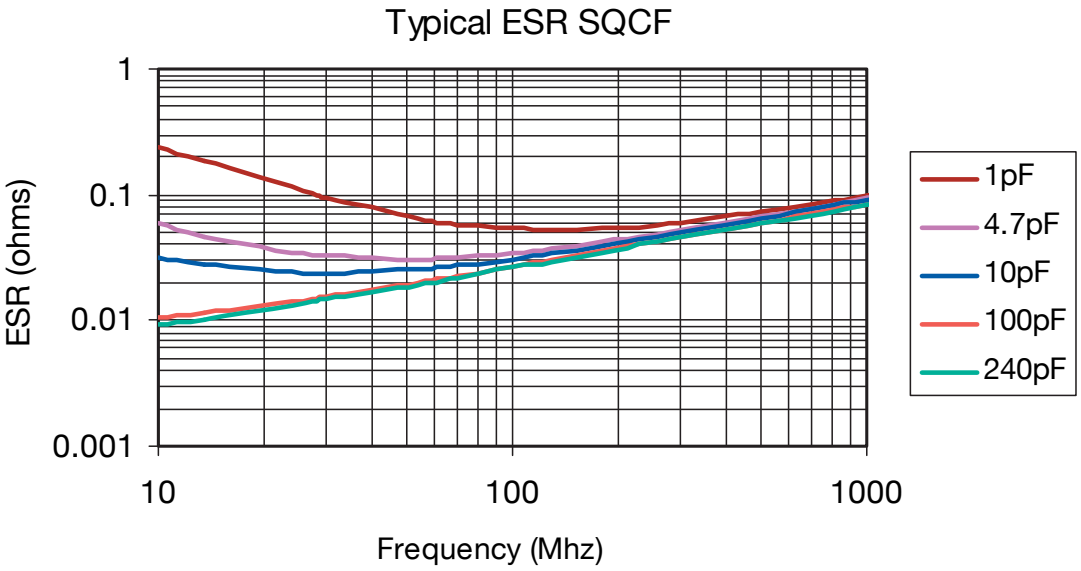
TABLE I: TC: A (0±30PPM/°C) CASE SIZE S

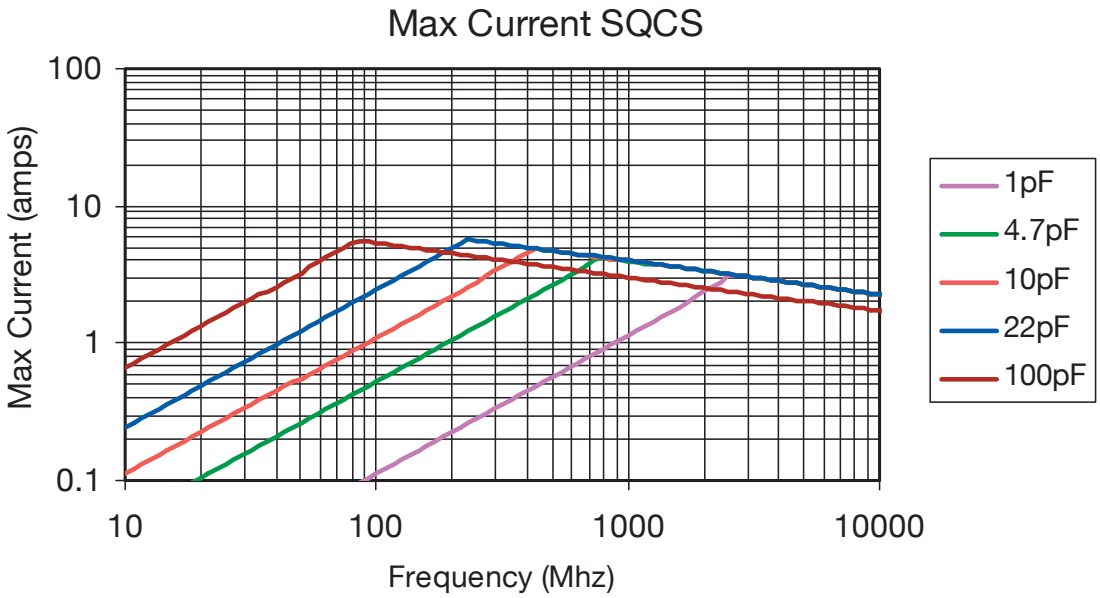
Cap. pF	Cap. Tol.	WVDC	Cap. pF	Cap. Tol.	WVDC	Cap. pF	Cap. Tol.	WVDC
0.1	A, B	250	3.6	A, B, C	250	39	F, G, J	250
0.2	A, B	250	3.9	A, B, C	250	43	F, G, J	250
0.3	A, B	250	4.3	A, B, C	250	47	F, G, J	250
0.4	A, B	250	4.7	A, B, C	250	51	F, G, J	250
0.5	A, B, C	250	5.1	A, B, C	250	56	F, G, J	250
0.6	A, B, 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			

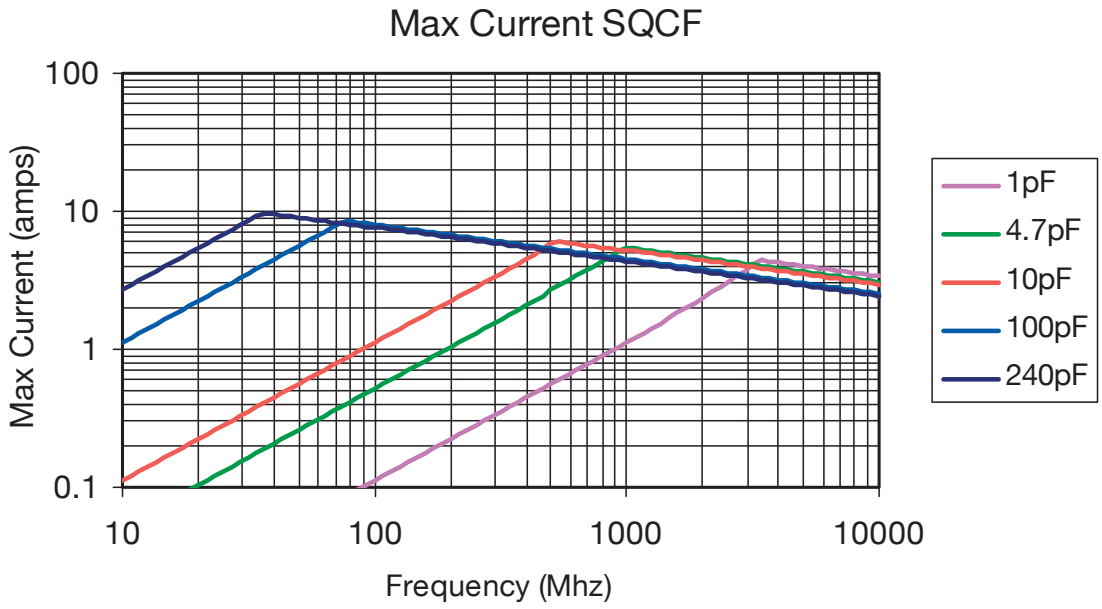
TABLE II: TC: A (0±30PPM/°C) CASE SIZE F

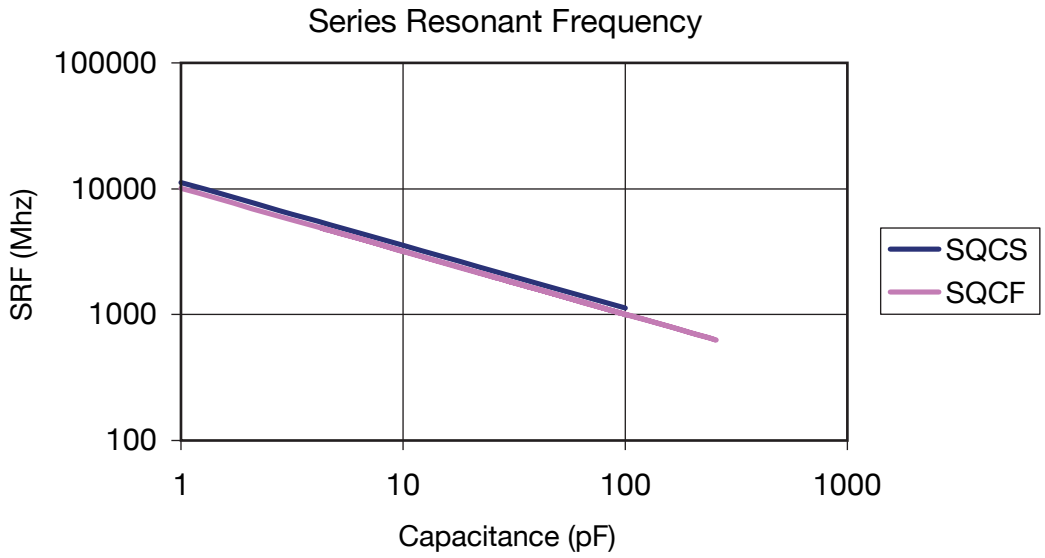
Cap. pF	Cap. Tol.	WVDC	Cap. pF	Cap. Tol.	WVDC	Cap. pF	Cap. Tol.	WVDC	Cap. pF	Cap. Tol.	WVDC
0.1	A, B	250	2.2	A, B, C	250	15	F, G, J	250	100	F, G, J	250
0.2	A, B	250	2.4	A, B, C	250	16	F, G, J	250	110	F, G, J	250
0.3	A, B	250	2.7	A, B, C	250	18	F, G, J	250	120	F, G, J	250
0.4	A, B	250	3.0	A, B, C	250	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			

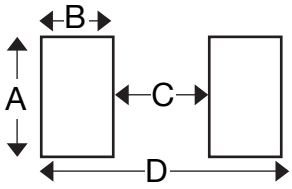

Typical ESR SQCS
ESR (ohms)
1
0.1
0.01
10
100
1000
Frequency (Mhz)
1pF
4.7pF
10pF
22pF
100pF


Typical ESR SQCF
ESR (ohms)
1
0.1
0.01
0.001
10
100
1000
Frequency (Mhz)
1pF
4.7pF
10pF
100pF
240pF









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	

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