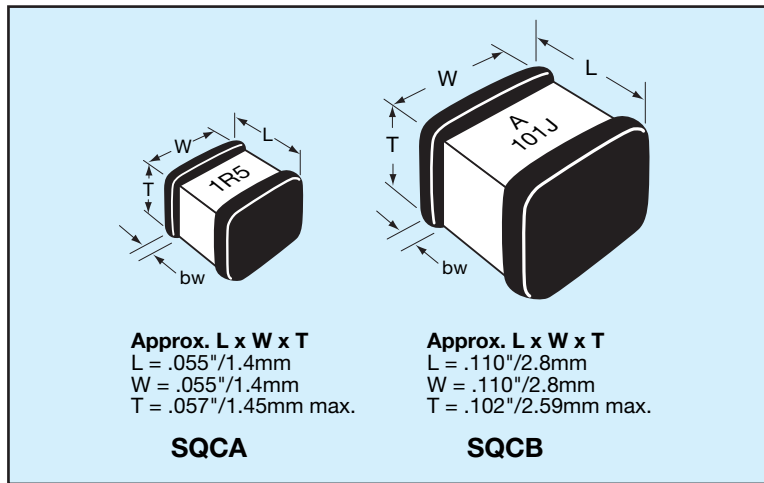


Microwave MLC's



SQ Series



These porcelain and ceramic dielectric multilayer capacitor (MLC) chips are best suited for RF/ Microwave applications typically ranging from 10 MHz to 4.2 GHz. Characteristic is a fine grained, high density, high purity dielectric material impervious to moisture with heavy internal palladium electrodes.

These characteristics lend well to applications requiring:

- 1) high current carrying capabilities;
- 2) high quality factors;
- 3) very low equivalent series resistance;
- 4) very high series resonance;
- 5) excellent stability under stresses of changing voltage, frequency, time and temperature.

MECHANICAL DIMENSIONS: inches (millimeters)

Case	Length (L)	Width (W)	Thickness (T)	Band Width (bw)
SQCA	.055 + .015 - .010 (1.40+ .381 - .254)	.055±.015 (1.40±.381)	.020/.057 (.508/1.45)	.010 + .010 - .005 (.254 +.254 - .127)
SQCB	.110 + .020 - .010 (2.79 +.889 - .254)	.110±.010 (2.79±.508)	.030/.102 (.762/2.59)	.015±.010 (.381±.254)

HOW TO ORDER

<p>SQ</p> <p>AVX Style</p>	<p>CB</p> <p>Case Size (See Chart) CA = 0605 CB = 1210</p>	<p>7</p> <p>Voltage Code 5 = 50V 1 = 100V E = 150V 2 = 200V 9 = 300V 7 = 500V</p>	<p>M</p> <p>Temperature Coefficient Code M = +90±20ppm/°C A = 0±30ppm/°C</p>	<p>100</p> <p>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.</p>	<p>J</p> <p>Capacitance Tolerance Code B = ±.1 pF C = ±.25 pF D = ±.5 pF F = ±1% G = ±2% J = ±5% K = ±10% M = ±20% N = ±30%</p>	<p>A</p> <p>Failure Rate Code A = Not Applicable</p>	<p>1</p> <p>Termination Style Code 1 = Pd/Ag 7 = Ag/Ni/Au J = Nickel Barrier Sn/Pb (60/40) Q = 100% Tin</p>	<p>ME</p> <p>Packaging* Code ME = 7" Reel RE = 13" Reel WE = Waffle Pack</p>
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PACKAGING

Standard Packaging = Waffle Pack (maximum quantity is 80)



ELECTRICAL SPECIFICATIONS

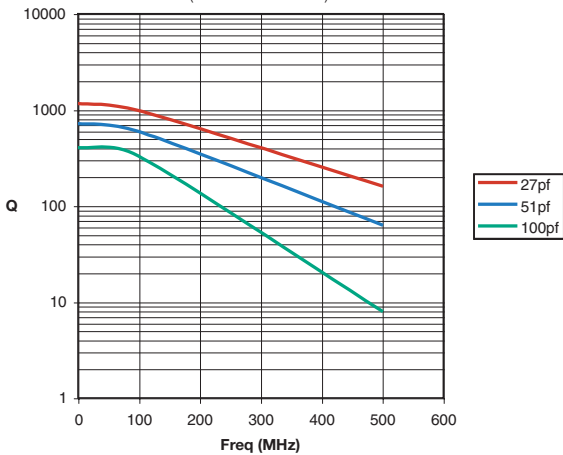
SQCA & SQCB	
M & A	
Temperature Coefficient	(M) +90 ±20PPM/°C and (A) 0 ±30PPM/°C
Capacitance Range	0.1 pF to 5100 pF
Capacitance Tolerance	±0.1 pF to ±20%
Operating Temperature	-55°C +125°C
Quality Factor or Dissipation Factor	Per MIL-PRF-55681/4
Insulation Resistance	Per MIL-PRF-55681 10 ⁶ megohm to 470 pF @ +25°C 10 ⁵ megohm to 470 pF @ +125°C 10 ⁵ megohm above 470 pF @ +25°C 10 ⁴ megohm above 470 pF @ +125°C
Aging	None
Piezoelectric Effects	None
Dielectric Withstanding Voltage	2.5 x rated voltage (for 500V rated 1.5 x rated voltage)

ENVIRONMENTAL CHARACTERISTICS

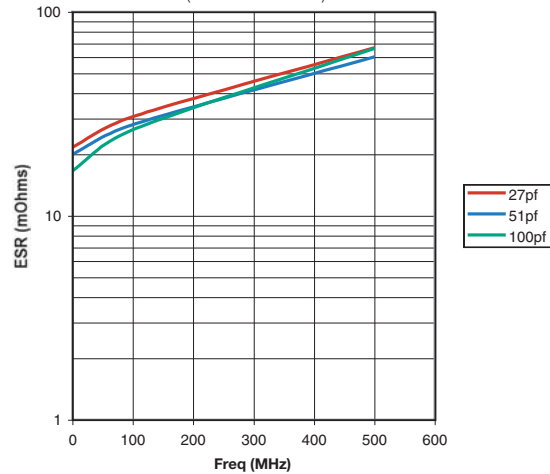
Will meet or exceed performance characteristics as outlined in MIL-PRF-55681/4.

REQUIREMENT	MIL-STD-202 METHOD
Life	108, Condition F
Shock	213, Condition J
Vibration	204, Condition B
Immersion	104, Condition B
Salt Spray	101, Condition B
Solderability	208
Thermal Shock	107, Condition B
Terminal Strength	211
Temperature Cycling	102, Condition C
Moisture Resistance	106
Barometric Pressure	105, Condition B
Resistance to Soldering Heat	210, Condition C

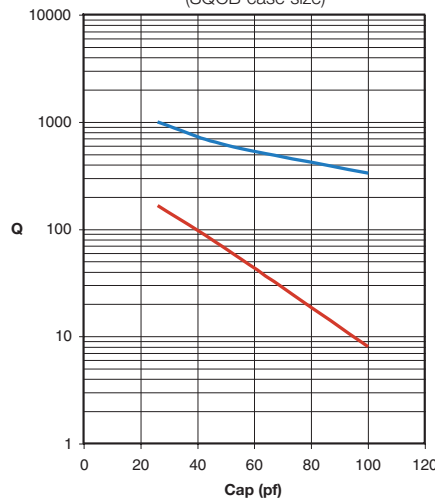
Q vs. Frequency
(SQCB case size)



ESR vs Frequency
(SQCB case size)



Q vs Cap
(SQCB case size)



Microwave MLC's



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

TABLE I: TC: M (+90±20PPM/°C) CASE SIZE SQCA DIMENSIONS: inches (millimeters)

Case	Length	Width	Thickness	Band Width	Avail. Term.
SQCA	.055±.025 (1.40±.635)	.055±.015 (1.40±.381)	.020/.057 (.508/1.45)	.010 +.010 -.005 (.254 +.254 -.127)	1, 7, J, Q

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

TABLE II: TC: A (0±30PPM/°C) CASE SIZE SQCA DIMENSIONS: inches (millimeters)

Case	Length	Width	Thickness	Band Width	Avail. Term.
SQCA	.055±.025 (1.40±.635)	.055±.015 (1.40±.381)	.020/.057 (.508/1.45)	.010 +.010 -.005 (.254 +.254 -.127)	1, 7, J, Q

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

Microwave MLC's



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

TABLE I: TC: M (+90±20PPM/°C) CASE SIZE SQCB DIMENSIONS: inches (millimeters)

Case	Length	Width	Thickness	Band Width	Avail. Term.
SQCB	.110 +0.035 -0.020 (2.79 +.889 -.508)	.110 ±.020 (2.79 ±.508)	.030/.102 (.762/2.59)	.015 ±.010 (.381 ±.254)	1, 7, J, Q

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

TABLE II: TC: A (0±30PPM/°C) CASE SIZE SQCB DIMENSIONS: inches (millimeters)

Case	Length	Width	Thickness	Band Width	Avail. Term.
SQCB	.110 +0.035 -0.020 (2.79 +.889 -.508)	.110 ±.020 (2.79 ±.508)	.030/.102 (.762/2.59)	.015 ±.010 (.381 ±.254)	1, 7, J, Q

Cap. pF	Cap. Tol.	WVDC	Cap. pF	Cap. Tol.	WVDC	Cap. pF	Cap. Tol.	WVDC	Cap. pF	Cap. Tol.	WVDC
0.1	B	500	3.9	B, C, D	500	47	F, G, J, K, M	500	560	F, G, J, K, M	150
0.2	B	500	4.3	B, C, D	500	51	F, G, J, K, M	500	620	F, G, J, K, M	150
0.3	B,C	500	4.7	B, C, D	500	56	F, G, J, K, M	500	680	F, G, J, K, M	150
0.4	B,C	500	5.1	B, C, D	500	62	F, G, J, K, M	500	750	F, G, J, K, M	150
0.5	B, C, D	500	5.6	B, C, D	500	68	F, G, J, K, M	500	820	F, G, J, K, M	150
0.6	B, C, D	500	6.2	B, C, D	500	75	F, G, J, K, M	500	910	F, G, J, K, M	150
0.7	B, C, D	500	6.8	B, C, J, K, M	500	82	F, G, J, K, M	500	1000	F, G, J, K, M	150
0.8	B, C, D	500	7.5	B, C, J, K, M	500	91	F, G, J, K, M	500	1100	F, G, J, K, M	50
0.9	B, C, D	500	8.2	B, C, J, K, M	500	100	F, G, J, K, M	500	1200	F, G, J, K, M	50
1.0	B, C, D	500	9.1	B, C, J, K, M	500	110	F, G, J, K, M	300	1300	F, G, J, K, M	50
1.1	B, C, D	500	10	F, G, J, K, M	500	120	F, G, J, K, M	300	1500	F, G, J, K, M	50
1.2	B, C, D	500	11	F, G, J, K, M	500	130	F, G, J, K, M	300	1600	F, G, J, K, M	50
1.3	B, C, D	500	12	F, G, J, K, M	500	150	F, G, J, K, M	300	1800	F, G, J, K, M	50
1.4	B, C, D	500	13	F, G, J, K, M	500	160	F, G, J, K, M	300	2000	F, G, J, K, M	50
1.5	B, C, D	500	15	F, G, J, K, M	500	180	F, G, J, K, M	300	2200	F, G, J, K, M	50
1.6	B, C, D	500	16	F, G, J, K, M	500	200	F, G, J, K, M	300	2400	F, G, J, K, M	50
1.7	B, C, D	500	18	F, G, J, K, M	500	220	F, G, J, K, M	200	2700	F, G, J, K, M	50
1.8	B, C, D	500	20	F, G, J, K, M	500	240	F, G, J, K, M	200	3000	F, G, J, K, M	50
1.9	B, C, D	500	22	F, G, J, K, M	500	270	F, G, J, K, M	200	3300	F, G, J, K, M	50
2.0	B, C, D	500	24	F, G, J, K, M	500	300	F, G, J, K, M	200	3600	F, G, J, K, M	50
2.2	B, C, D	500	27	F, G, J, K, M	500	330	F, G, J, K, M	200	3900	F, G, J, K, M	50
2.4	B, C, D	500	30	F, G, J, K, M	500	360	F, G, J, K, M	200	4300	F, G, J, K, M	50
2.7	B, C, D	500	33	F, G, J, K, M	500	390	F, G, J, K, M	200	4700	F, G, J, K, M	50
3.0	B, C, D	500	36	F, G, J, K, M	500	430	F, G, J, K, M	200	5000	F, G, J, K, M	50
3.3	B, C, D	500	39	F, G, J, K, M	500	470	F, G, J, K, M	200	5100	F, G, J, K, M	50
3.6	B, C, D	500	43	F, G, J, K, M	500	510	F, G, J, K, M	150			

