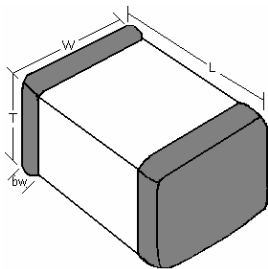
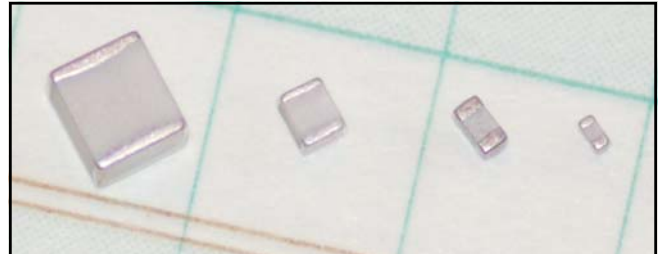


The Q-Max/Ultra Q-Max series of porcelain and ceramic dielectric capacitors are ideally suited for RF/Microwave frequency application from 10MHz to 4.2 GHz. The combination of high density, high purity dielectric material impervious to moisture, heavy pure palladium internal electrodes and strict statistical process controls allows Q-Max/Ultra Q-Max MLCs to meet or exceed applicable performance characteristics of MIL-PRF-55681/4.

These capacitors are suitable solutions for applications that require:

- Extremely High Quality Factors
- Very Low Equivalent Series Resistance
- Very High Series Resonance
- High Current Carrying Capabilities
- Greatest Stability Under Changing Factors

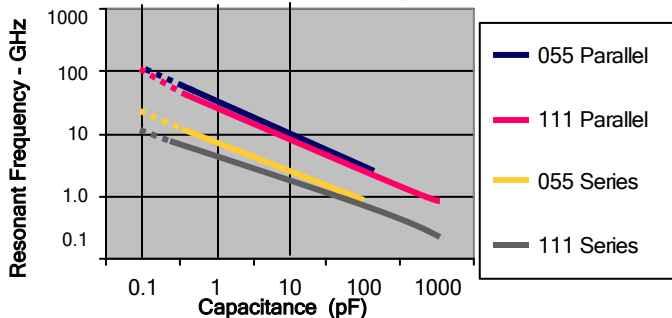


MECHANICAL DIMENSIONS in Inches (mm)				
Case Size	Length (L)	Width (W)	Thickness (T)	Bandwidth (bw)
0402	.040±.010 (1.02±.250)	.020±.005 (.510±.120)	.020±.006 (.510±.152)	.010±.005 (.250±.120)
0603	.063±.006 (1.60±.152)	.032±.006 (.813±.152)	Max: .035 Max: (.889)	.014±.006 (.357±.152)
055	.055±.015 (1.40±.381)	.055±.015 (1.40±.381)	.035±.010 (.889±.25)	.015±.005 (.381±.120)
111	.110±.020 (2.79±.508)	.110±.020 (2.79±.508)	.100±.020 (2.54±.508)	.015±.010 (.381±.254)

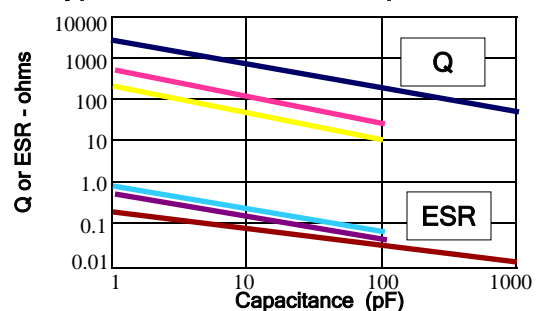
ORDERING INFORMATION								
Case Size	Dielectric	Capacitance	Tolerance	Voltage	Termination	Packaging	Marking	Hi-Reli Testing
111	Q	201	J	201	S	T	M	- A
Example: 0402 0603 055 111	Q High Q (Porcelain Dielectric) U Hi-Q (Porcelain NPO Dielectric)	First 2 digits are Significant; Third digit indicates number of Zeros Examples: 201 = 200pF 2R2 = 2.2pF	A ±0.05pF B ±0.10pF C ±0.25pF F ±1% G ±2% J ±5% K ±10% M ±20%	First 2 digits are Significant; Third digit indicates number of Zeros Examples: 201 = 200V 151 = 150V 202 = 2000V	P Pd/Ag Plated (RoHS Compliant) S Solder Plated Over Nickel SN Tin over Nickel Plated (RoHS Compliant) G Gold over Nickel Plated (RoHS Compliant)	T Tape and Reel W Waffle Pack	(Optional) M = Marking	(Optional) A = Group A B = Group B C = Group C Tested and Screened

Performance

Typical Resonant Frequency vs. Capacitance



Typical Q and ESR vs. Capacitance



Electrical Specifications

for Case Sizes: 0402, 0603, 055, 111
and Dielectric Materials: "Q" and "U"

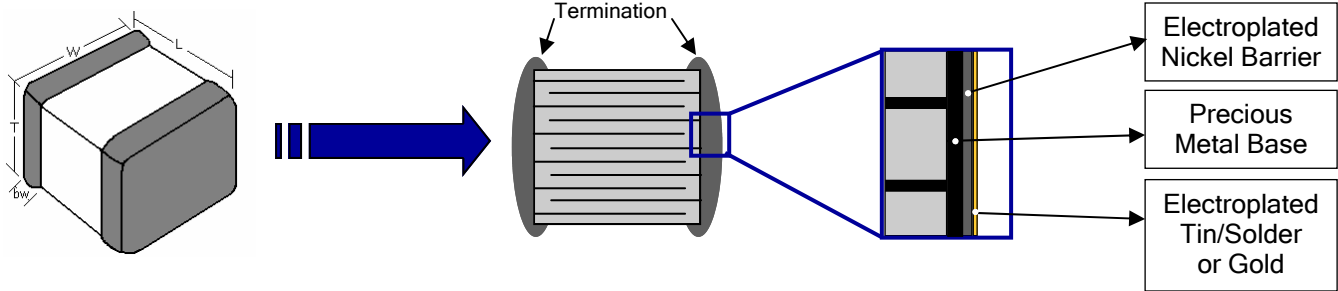
Environmental Characteristics

will meet/exceed performance characteristics
per MIL-PRF-55681/4

Temperature Coefficient	(Q)+90 ±20PPM/°C (U) 0 ±30PPM/°C
Capacitance Range	0.1pF to 1000pF
Capacitance Tolerance	±0.1pF 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 470pF @ +25°C 10 ⁵ megohm to 470pF @ +125°C 10 ⁵ megohm over 470pF @ +25°C 10 ⁴ megohm over 470pF @ +125°C
Aging	None
Piezoelectric Effects	None
Dielectric Withstanding Voltage	2.5 x rated voltage (for 500V rated 1.5 x rated voltage)

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

Mechanical Dimensions



Quality Factor vs. Frequency (Typical)

Capacitance	@ 30 MHz	@ 150 MHz	@ 500 MHz	@ 1000 MHz
1 pF	30000	4000	800	350
10 pF	9000	2000	400	150
30 pF	5000	800	200	60
100 pF	2800	400	70	25
200 pF	1500	250	40	12

Capacitance Selection

**** Please contact the Factory for additional capacitances and voltages. ****

CAPACITANCE		0402 (Q, U)	0603 (Q, U)	055 (Q, U)	111 (Q, U)	CAPACITANCE		0402 (Q, U)	0603 (Q, U)	055 (Q, U)	111 (Q, U)
CODE	VALUE					CODE	VALUE				
0R1	0.1pF	↑	↑	↑	↑	180	18pF	50 VDC	↑	↑	↑
0R2	0.2pF	↑	↑	↑	↑	200	20pF	50 VDC	↑	↑	↑
0R3	0.3pF	↑	↑	↑	↑	220	22pF	50 VDC	↑	↑	↑
0R4	0.4pF	↑	↑	↑	↑	240	24pF	50 VDC	↑	↑	↑
0R5	0.5pF	↑	↑	↑	↑	270	27pF	50 VDC	↑	↑	↑
0R6	0.6pF	↑	↑	↑	↑	300	30pF	50 VDC	100 VDC	250 VDC	↑
0R7	0.7pF	↑	↑	↑	↑	330	33pF	50 VDC	100 VDC	250 VDC	↑
0R8	0.8pF	↑	↑	↑	↑	360	36pF	50 VDC	100 VDC	250 VDC	↑
0R9	0.9pF	↑	↑	↑	↑	390	39pF	50 VDC	100 VDC	250 VDC	↑
1R0	1.0pF	↑	↑	↑	↑	430	43pF	50 VDC	100 VDC	250 VDC	↑
1R1	1.1pF	↑	↑	↑	↑	470	47pF	50 VDC	100 VDC	250 VDC	↑
1R2	1.2pF	↑	↑	↑	↑	510	51pF	50 VDC	100 VDC	250 VDC	↑
1R3	1.3pF	↑	↑	↑	↑	560	56pF	50 VDC	100 VDC	250 VDC	↑
1R4	1.4pF	↑	↑	↑	↑	620	62pF	50 VDC	100 VDC	250 VDC	↑
1R5	1.5pF	↑	↑	↑	↑	680	68pF	50 VDC	100 VDC	250 VDC	↑
1R6	1.6pF	↑	↑	↑	↑	750	75pF	50 VDC	100 VDC	250 VDC	↑
1R7	1.7pF	↑	↑	↑	↑	820	82pF	50 VDC	100 VDC	250 VDC	↑
1R8	1.8pF	↑	↑	↑	↑	910	91pF	50 VDC	100 VDC	250 VDC	↑
1R9	1.9pF	↑	↑	↑	↑	101	100pF	50 VDC	100 VDC	250 VDC	↑
2R0	2.0pF	↑	↑	↑	↑	111	110pF	50 VDC	100 VDC	250 VDC	↑
2R1	2.1pF	↑	↑	↑	↑	121	120pF	50 VDC	100 VDC	250 VDC	↑
2R2	2.2pF	100 VDC	100 VDC	250 VDC	2500 VDC	131	130pF	50 VDC	100 VDC	250 VDC	↑
2R4	2.4pF	100 VDC	100 VDC	250 VDC	2500 VDC	151	150pF	50 VDC	100 VDC	250 VDC	↑
2R7	2.7pF	100 VDC	100 VDC	250 VDC	2500 VDC	161	160pF	50 VDC	100 VDC	250 VDC	↑
3R0	3.0pF	100 VDC	100 VDC	250 VDC	2500 VDC	181	180pF	50 VDC	100 VDC	250 VDC	↑
3R3	3.3pF	100 VDC	100 VDC	250 VDC	2500 VDC	201	200pF	50 VDC	100 VDC	250 VDC	↑
3R6	3.6pF	100 VDC	100 VDC	250 VDC	2500 VDC	221	220pF	50 VDC	100 VDC	250 VDC	↑
3R9	3.9pF	100 VDC	100 VDC	250 VDC	2500 VDC	241	240pF	50 VDC	100 VDC	250 VDC	↑
4R3	4.3pF	100 VDC	100 VDC	250 VDC	2500 VDC	271	270pF	50 VDC	100 VDC	250 VDC	↑
4R7	4.7pF	100 VDC	100 VDC	250 VDC	2500 VDC	301	300pF	50 VDC	100 VDC	250 VDC	↑
5R1	5.1pF	100 VDC	100 VDC	250 VDC	2500 VDC	331	330pF	50 VDC	100 VDC	250 VDC	↑
5R6	5.6pF	100 VDC	100 VDC	250 VDC	2500 VDC	361	360pF	50 VDC	100 VDC	250 VDC	↑
6R2	6.2pF	100 VDC	100 VDC	250 VDC	2500 VDC	391	390pF	50 VDC	100 VDC	250 VDC	↑
6R8	6.8pF	100 VDC	100 VDC	250 VDC	2500 VDC	431	430pF	50 VDC	100 VDC	250 VDC	↑
7R5	7.5pF	100 VDC	100 VDC	250 VDC	2500 VDC	471	470pF	50 VDC	100 VDC	250 VDC	↑
8R2	8.2pF	100 VDC	100 VDC	250 VDC	2500 VDC	511	510pF	50 VDC	100 VDC	250 VDC	↑
9R1	9.1pF	100 VDC	100 VDC	250 VDC	2500 VDC	561	560pF	50 VDC	100 VDC	250 VDC	↑
100	10pF	100 VDC	100 VDC	250 VDC	2500 VDC	621	620pF	50 VDC	100 VDC	250 VDC	↑
110	11pF	100 VDC	100 VDC	250 VDC	2500 VDC	681	680pF	50 VDC	100 VDC	250 VDC	↑
120	12pF	100 VDC	100 VDC	250 VDC	2500 VDC	751	750pF	50 VDC	100 VDC	250 VDC	↑
130	13pF	100 VDC	100 VDC	250 VDC	2500 VDC	821	820pF	50 VDC	100 VDC	250 VDC	↑
150	15pF	100 VDC	100 VDC	250 VDC	2500 VDC	911	910pF	50 VDC	100 VDC	250 VDC	↑
160	16pF	100 VDC	100 VDC	250 VDC	2500 VDC	102	1000pF	50 VDC	100 VDC	250 VDC	↑

