High Q Capacitors, High Power RF - Surface Mount & Ribbon Leaded

A range of ultra-low loss High Q ceramic capacitors with C0G/NP0 characteristics suitable for high power applications where minimal power loss and very low self heating is demanded.

Capacitance values
1pF to 27nF (High Q)

Chip sizes
2225 and 4040

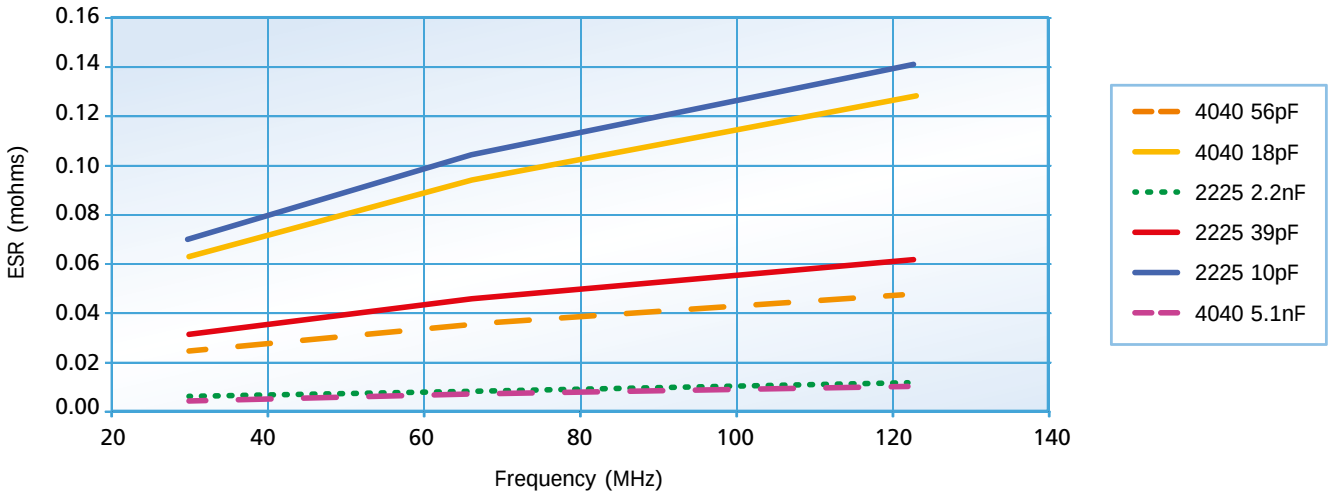
Operating temperature
-55ºC to +125ºC

High Q low ESR dielectrics
(other options available)

Insulation Resistance (IR)
100GΩ min @ 100 Vdc or 1000s (whichever is the less)

DWV up to 8400Vdc

Typical ESR vs Frequency



ESR Measurement

All ESR figures are measured using a VNA and 2m copper resonant tube and extrapolating to 30MHz by ratio. Measured data can be supplied on request. Measurement of ESR can vary with test method and components should only be compared when tested back-to-back on the same equipment under controlled conditions.

High Power RF capacitors - minimum / maximum capacitance values

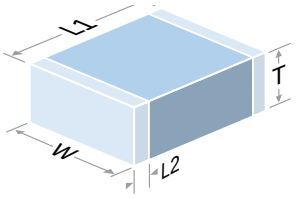
Chip size	Case size 25 - 2225		Case size 40 - 4040	
	Min.	Max.	Min.	Max.
200V	6.2nF	10nF	16nF	27nF
500V	5.1nF	5.6nF	13nF	15nF
630V	3.9nF	4.7nF	12nF	12nF
1kV	1.2nF	3.3nF	5.6nF	10nF
2kV	510pF	1.0nF	1.6nF	5.1nF
3kV	1pF	47pF* / 470pF	910pF	1.5nF
4kV	-	-	620pF	820pF
5kV	-	-	390pF	560pF
6kV	-	-	160pF	330pF
7.0kV/7.2kV	-	-	1pF	56pF** / 150pF

Note: *2225 - 47pF max. for dual rated @2.5kVac 30MHz **4040 - 56pF max. for dual rated @5kVac 30MHz.

Should be ordered as Syfer parts.

High Q Capacitors, High Power RF - Surface Mount & Ribbon Leaded

Surface Mount

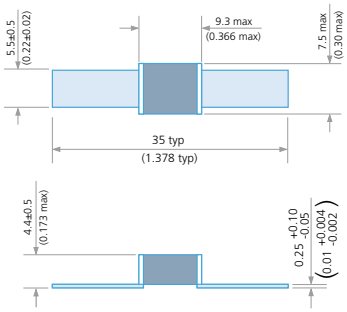


Plating finish:
Tin over Ni.

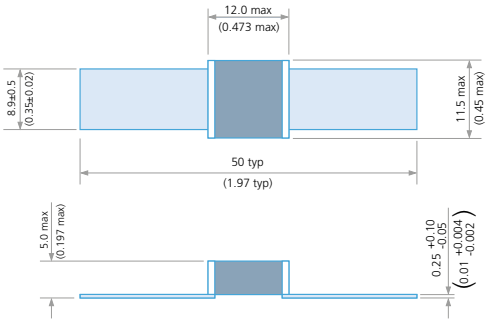
Ribbon Leaded

Silver plated copper ribbon attached with HMP solder - (MP greater than 260ºC)

2225



4040



Range dimensions - Surface Mount High Power RF capacitors

Chip size	Length (L1) mm/inches	Width (W) mm/inches	Max. Thickness (T) mm/inches	Termination Band L2 mm/inches	
				min	max
2225	5.7 ± 0.04 0.225 ± 0.016	6.3 ± 0.4 0.25 ± 0.016	4.2 0.16	0.25 0.01	1.0 0.04
4040	10.2 ± 0.5 0.402 ± 0.020	10.2 ± 0.5 0.402 ± 0.020	4.2 0.16	0.5 0.02	1.5 0.06

Ordering information - Surface Mount High Power RF capacitors

4040	J	7K0	0470	J	Q	B	AF7
Chip size	Termination	Voltage	Capacitance in picofarads (pF)	Capacitance tolerance	Dielectric	Packing	Varient Code
2225 **4040**	**J** = Nickel barrier (100% matte tin plating). RoHS compliant. Lead free.	**200** = 200V **500** = 500V **630** = 630V **1K0** = 1kV **2K0** = 2kV **3K0** = 3kV **4K0** = 4kV **5K0** = 5kV **6K0** = 6kV **7K0** = 7kV/ 7.2kV	<10pF Insert a P for the decimal point, eg **2P20** = 2.2pF. >10pF. 1st digit is 0. 2nd and 3rd digits are significant figures of capacitance code. The 4th digit is number of 0's following eg. **0470** = 47pF **0512** = 5100pF	<10pF **B** = ±0.10pF **C** = ±0.25pF **D** = ±0.50pF ≥10pF **G** = ±2% **J** = ±5% **K** = ±10% **M** = ±20%	**Q** = High Q version of C0G/NP0	**B** = Bulk packed	**AF7** = Standard Variant for High Power applications

Ordering information - Ribbon Leaded High Power RF capacitors

4040	B	7K0	0470	G	Q	B	Lead options	Variant code
Chip size	Coating	Voltage	Capacitance in picofarads (pF)	Capacitance tolerance	Dielectric	Packing	R	W001
2225 **4040**	**B** = Uncoated **V** = Coated with modified silicone lacquer	**200** = 200V **500** = 500V **630** = 630V **1K0** = 1kV **2K0** = 2kV **3K0** = 3kV **4K0** = 4kV **5K0** = 5kV **6K0** = 6kV **7K0** = 7kV/ 7.2kV	<10pF Insert a P for the decimal point, eg **2P20** = 2.2pF. >10pF. 1st digit is 0. 2nd and 3rd digits are significant figures of capacitance code. The 4th digit is number of 0's following eg. **0470** = 47pF **0512** = 5100pF	<10pF **B** = ±0.10pF **C** = ±0.25pF **D** = ±0.50pF ≥10pF **G** = ±2% **J** = ±5% **K** = ±10% **M** = ±20%	**Q** = High Q version of C0G/NP0	**B** = Bulk packed	**R** = Ribbon Leaded	**W001** = Standard Variant **W**1** = Marked

Note: For non-magnetic see page 69.