

# C-SERIES HIGH FREQUENCY CHIP CAPACITORS

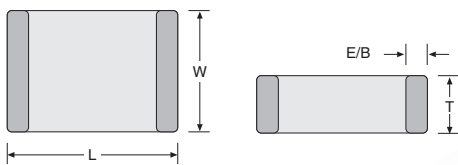


## KEY FEATURES

- High-Q / Low ESR
- Self Resonant Frequencies to 23.0 GHz
- Lead-Free Terminations
- Free MLCSoft® for SPICE & S-Parameter Modeling Data

## APPLICATIONS

- Cellular Products
- Cable Components
- RF Transceivers
- Wireless LAN
- RF Integrated Circuits
- Custom Applications

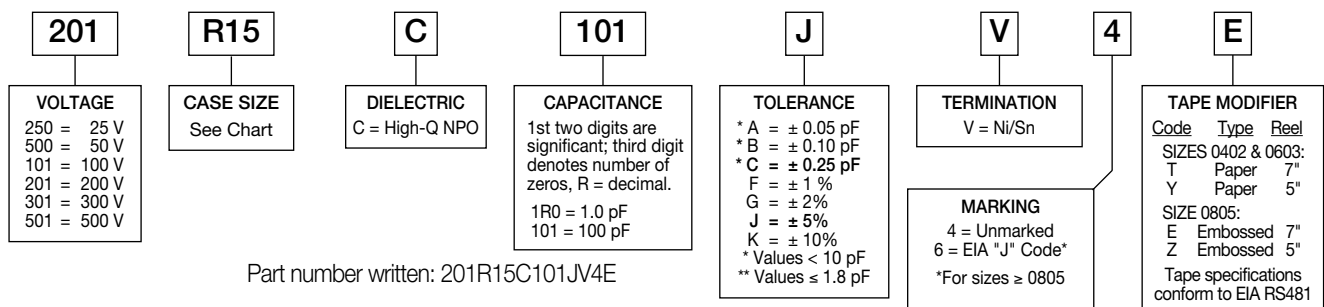


Dielectric RF Performance	
S Series	BEST
C Series	BETTER
L Series	GOOD
NPO	?

## MECHANICAL CHARACTERISTICS

	R07 / 0402		R14 / 0603		R15 / 0805		S41 / 1210	
	Inches	(mm)	Inches	(mm)	Inches	(mm)	Inches	(mm)
L	.040 ±.004	(1.02 ±0.1)	.062 ±.006	(1.57 ±.15)	.080 ±.008	(2.03 ±.20)	.125 ±.010	(3.18 ±.25)
W	.020 ±.004	(0.51 ±0.1)	.032 ±.006	(0.81 ±.15)	.050 ±.008	(1.27 ±.20)	.095 ±.010	(2.41 ±.25)
T	.020 ±.004	(0.51 ±0.1)	.030 ±.003	(0.76 ±.08)	.040 ±.006	(1.02 ±.15)	.060 Max	(1.52)
E/B	.010 ±.006	(0.25 ±.15)	.014 ±.006	(0.35 ±.15)	.020 ±.010	(0.50 ±.25)	.020 ±.010	(0.50 ±.25)

## HOW TO ORDER



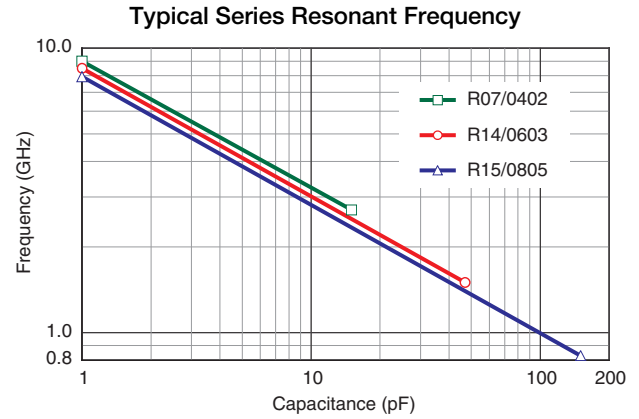
## AVAILABLE CAPACITANCE SELECTION

	R07/ 0402	R14 / 0603	R15 / 0805		S41 / 1210	
0.2 pF	25 V	200 V			0.5 pF	500 V
0.3 pF	25 V	200 V			0.6 pF	500 V
0.4 pF	25 V	200 V			0.7 pF	500 V
0.5 pF	25 V	200 V		200 V	0.8 pF	500 V
0.6 pF	25 V	200 V		200 V	0.9 pF	500 V
0.7 pF	25 V	200 V		200 V	1.0 pF	500 V
0.8 pF	25 V	200 V		200 V	1.1 pF	500 V
0.9 pF	25 V	200 V		200 V	1.2 pF	500 V
1.0 pF	25 V	200 V		200 V	1.3 pF	500 V
1.1 pF	25 V	200 V		200 V	1.5 pF	500 V
1.2 pF	25 V	200 V		200 V	1.6 pF	500 V
1.3 pF	25 V	200 V		200 V	1.8 pF	500 V
1.5 pF	25 V	200 V		200 V	2.0 pF	500 V
1.6 pF	25 V	200 V		200 V	2.2 pF	500 V
1.8 pF	25 V	200 V		200 V	2.4 pF	500 V
2.0 pF	25 V	200 V		200 V	2.7 pF	500 V
2.2 pF	25 V	200 V		200 V	3.0 pF	500 V
2.4 pF	25 V	200 V		200 V	3.3 pF	500 V
2.7 pF	25 V	200 V		200 V	3.6 pF	500 V
3.0 pF	25 V	200 V		200 V	3.9 pF	500 V
3.3 pF	25 V	200 V		200 V	4.3 pF	500 V
3.6 pF	25 V	200 V		200 V	4.7 pF	500 V
3.9 pF	25 V	200 V		200 V	5.1 pF	500 V
4.3 pF	25 V	200 V		200 V	5.6 pF	500 V
4.7 pF	25 V	200 V		200 V	6.2 pF	500 V
5.1 pF	25 V	200 V		200 V	6.8 pF	500 V
5.6 pF	25 V	200 V		200 V	7.5 pF	500 V
6.2 pF	25 V	200 V		200 V	8.2 pF	500 V
6.8 pF	25 V	200 V		200 V	9.1 pF	500 V
7.5 pF	25 V	200 V		200 V	10 pF	500 V
8.2 pF	25 V	200 V		200 V	12 pF	500 V
9.1 pF	25 V	200 V		200 V	15 pF	500 V
10 pF	25 V	200 V		200 V	18 pF	500 V
11 pF	25 V	200 V		200 V	20 pF	500 V
12 pF	25 V	200 V		200 V	22 pF	500 V
13 pF	25 V	200 V		200 V	27 pF	500 V
15 pF	25 V	200 V		200 V	33 pF	500 V
16 pF		200 V		200 V	39 pF	500 V
18 pF		200 V		200 V	47 pF	500 V
20 pF		100 V		200 V	56 pF	500 V
22 pF		100 V		200 V	68 pF	500 V
24 pF		100 V		200 V	82 pF	500 V
27 pF		100 V		200 V	100 pF	500 V
30 pF		100 V		200 V	120 pF	300 V
33 pF		100 V		200 V	150 pF	300 V
36 pF		100 V		200 V	180 pF	200 V
39 pF		100 V		200 V	220 pF	200 V
43 pF		100 V		200 V	270 pF	200 V
47 pF		100 V		200 V	330 pF	100 V
56 pF				200 V	390 pF	100 V
68 pF				200 V	470 pF	100 V
82 pF				200 V	560 pF	100 V
100 pF				200 V	680 pF	50 V
120 pF				100 V	820 pF	50 V
150 pF				100 V	1000 pF	50 V

This selection chart represents basic C/V capability in this series. Please contact the factory for capacitance, voltage, case size combinations not shown.

## DIELECTRIC CHARACTERISTICS

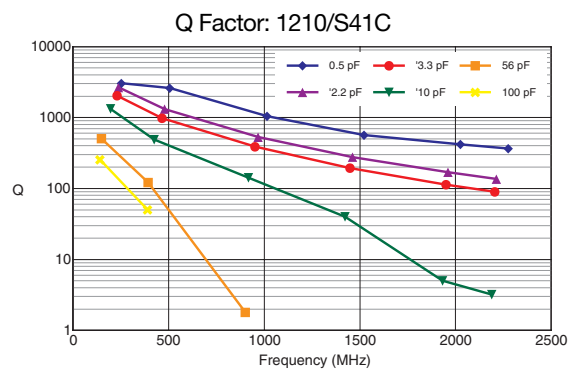
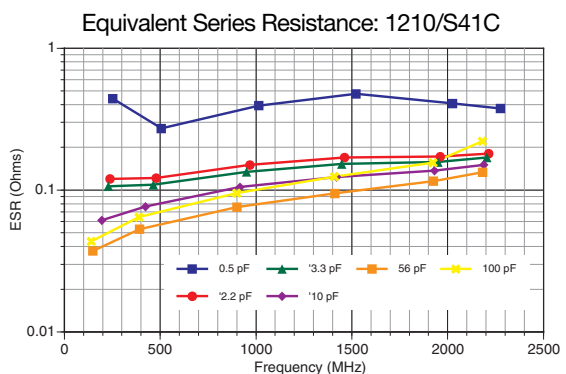
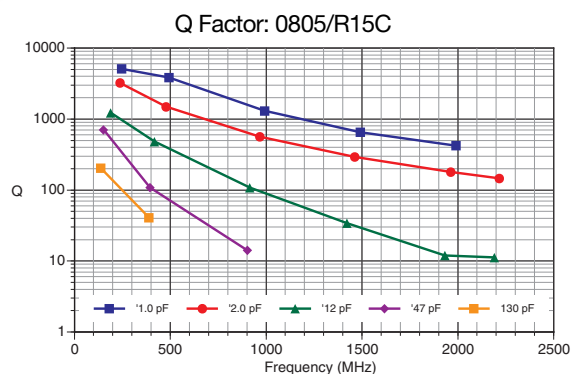
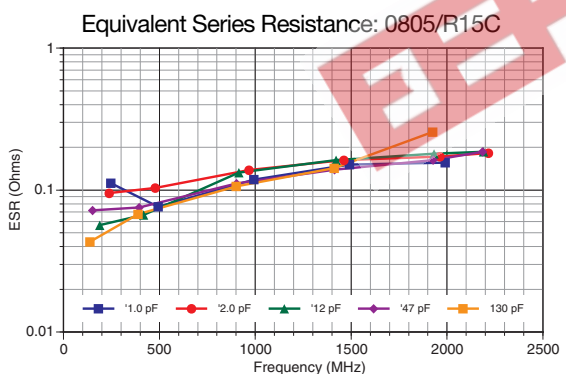
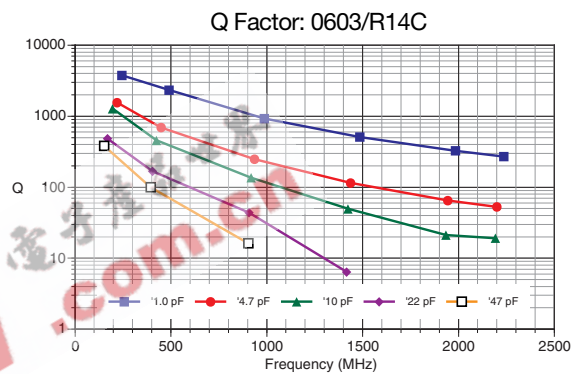
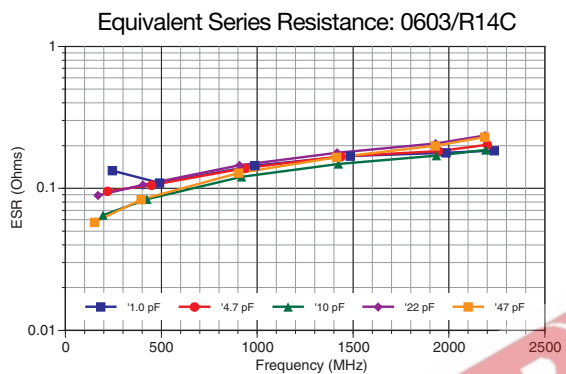
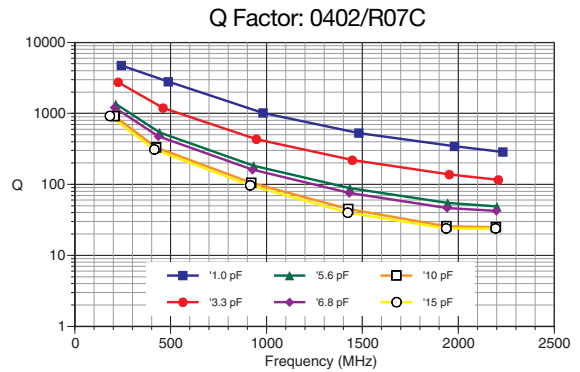
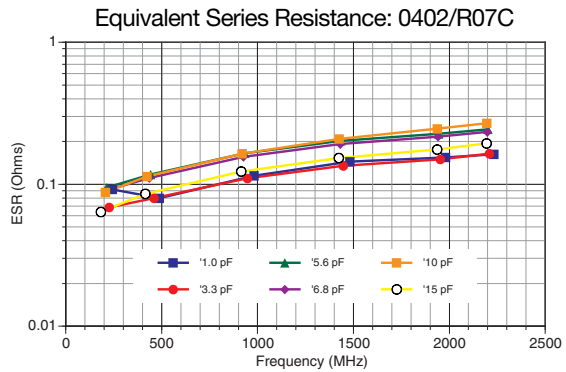
<b>TEMPERATURE COEFFICIENT:</b>	0 ± 30ppm /°C, -55 to 125°C
<b>QUALITY FACTOR:</b>	2,500 min., 10,000 typical
<b>INSULATION RESISTANCE:</b>	>1,000 GΩ @ 25°C, WVDC; 125°C IR is 10% of 25°C rating.
<b>DIELECTRIC STRENGTH:</b>	2.5 X WVDC Min., 25°C, 50 mA max
<b>TEST PARAMETERS:</b>	1MHz ±50kHz, 1.0±0.2 VRMS, 25°C
<b>AVAILABLE CAPACITANCE:</b>	Size 0402: 0.2 - 15 pF Size 0603: 0.2 - 47 pF Size 0805: 0.2 - 150 pF Size 1210: 0.5 - 1000 pF



## MECHANICAL & ENVIRONMENTAL CHARACTERISTICS

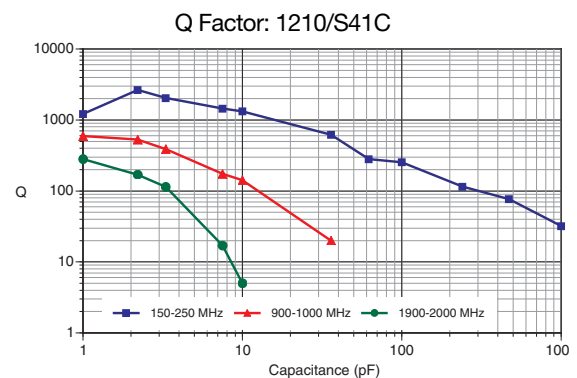
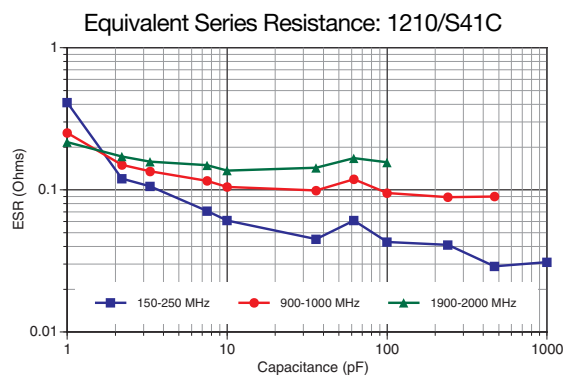
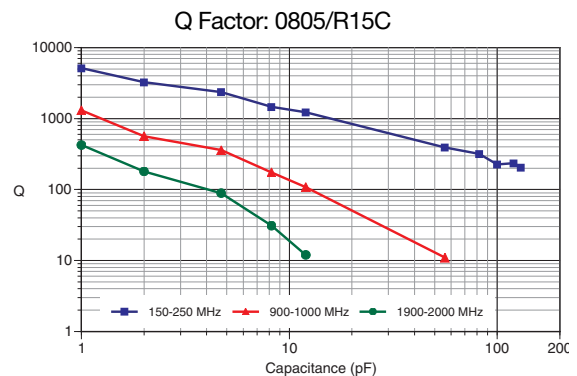
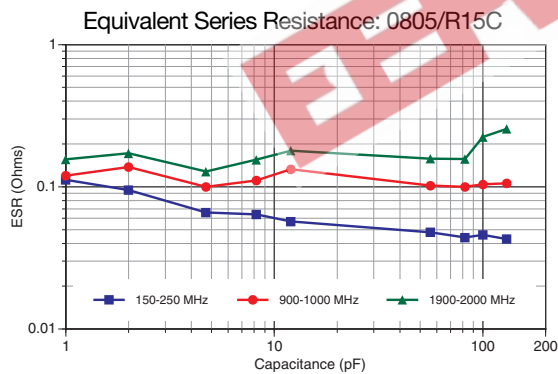
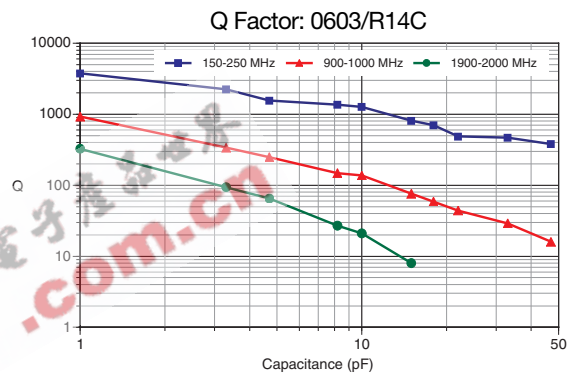
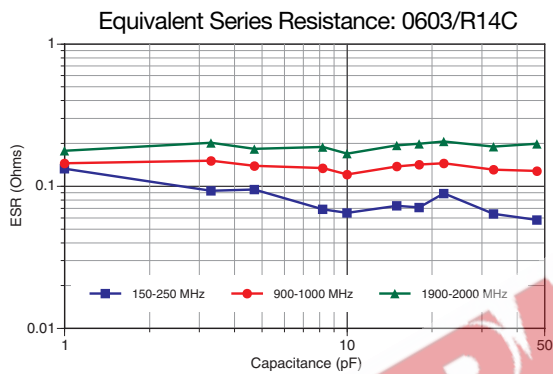
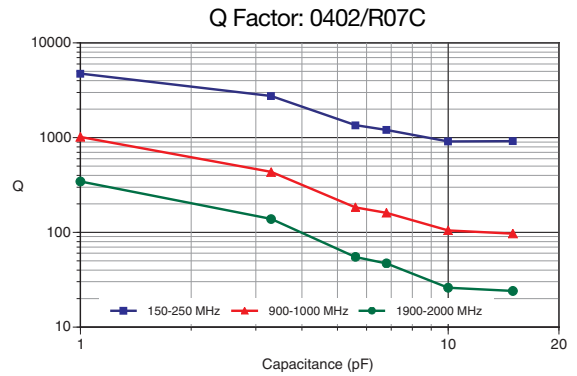
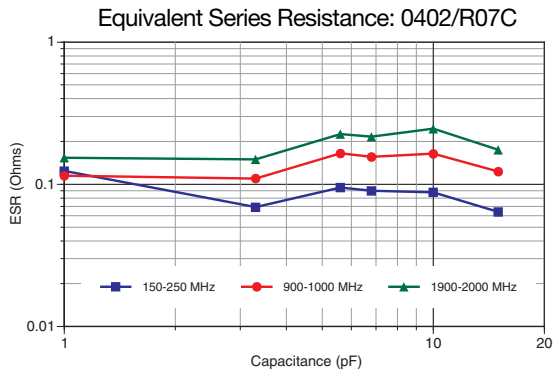
	SPECIFICATION	TEST PARAMETERS
<b>SOLDERABILITY:</b>	Solder coverage ≥ 90% of metalized areas	Preheat chip to 120°-150°C for 60 sec. Dip terminals in rosin flux then dip in 62Sn/36Pb/2Ag solder @ 240±5°C Dip time = 5±1 sec.
<b>RESISTANCE TO SOLDERING HEAT:</b>	Chip should not crack. Solder coverage ≥ 80%	Preheat chip to 120°-150°C for 60 sec. Dip terminals in rosin flux then dip in 62Sn/36Pb/2Ag solder @ 260±5°C Dip time = 10±1 sec.
<b>TERMINAL ADHESION:</b>	Termination should not pull off. Ceramic should remain undamaged.	Linear pull force exerted on axial leads soldered to each terminal. Terminal strength: For 0402: ≥2.0Lbs For 0603: ≥2.0Lbs For 0805: ≥5.0Lbs
<b>PCB DEFLECTION:</b>	No mechanical damage. Cap. change: 2% or .5pF Max	Glass Epoxy PCB: 1 mm deflection
<b>LIFE TEST:</b>	Cap. change: 2% or .5pF Max I.R. = Initial value	1000 Hours, 125°C, 200% rated voltage
<b>THERMAL SHOCK:</b>	Cap. change: 2% or .5pF Max I.R. = 70% of initial value	5 CYCLES: 30±3 minutes @ -55°C, 3 min. @ 25°C 30±3 min. @ +125°C, 3 min. @ 25°C
<b>MOISTURE RESISTANCE:</b>	Cap. change: 2% or .5pF Max I.R. = 70% of initial value	240 Hours, 85% Relative Humidity, 85°C, 1.5 VDC

## RF CHARACTERISTICS VERSUS FREQUENCY



Measurements performed on a Boonton 34A Resonant Coaxial Line and represent typical capacitor performance.

## RF CHARACTERISTICS VERSUS CAPACITANCE



Measurements performed on a Boonton 34A Resonant Coaxial Line and represent typical capacitor performance.