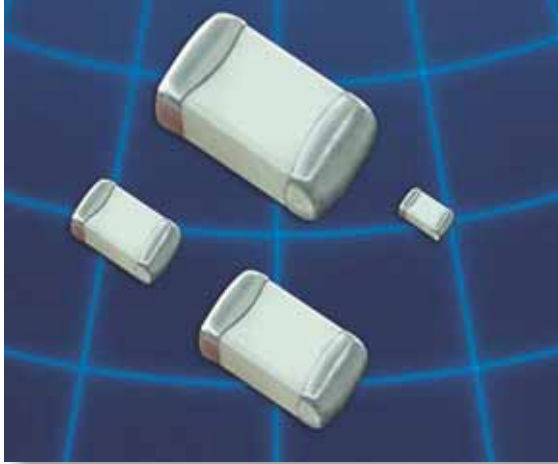


S-SERIES ULTRA-LOW ESR CAPACITORS

Dielectric
RF Performance

S Series	BEST
C Series	BETTER
L Series	BETTER
NPO	?



KEY FEATURES

- RoHS Compliant
- Lowest available ESR
- Custom Values & Tolerances Available
- Self Resonant Frequencies to 25.0 GHz
- Lead Free Terminations Standard ("V" Code)
- Sn/Pb Terminations Optional ("T" Code)
- Free MLCSoft® for SPICE & S-Parameter Modeling Data

APPLICATIONS

- Base station Products
- Wireless LAN
- RF Integrated Circuits
- Decoupling, By-pass, DC Blocking
- Portable Wireless Products
- Cable Components
- RF Matching Networks

AVAILABLE CAPACITANCE SELECTION

R07 / 0402 (1005)

	Inches	Length	Width	Thickness	End Band
	(mm)	.040 ±.004 (1.02 ±0.1)	.020 ±.004 (0.51 ±0.1)	.020 ±.004 (0.51 ±0.1)	.010 ±.006 (0.25 ±.15)

Capacitance values (pF): 0.2, 0.3, 0.4, 0.5, 0.6, 0.7, 0.8, 0.9, 1.0, 1.1, 1.2, 1.3, 1.5, 1.8, 2.0, 2.2, 2.4, 2.7, 3.0, 3.3, 3.6, 3.9, 4.3, 4.7, 5.1, 5.6, 6.2, 6.8, 7.5, 8.2, 9.1, 10, 11, 12, 13, 15, 16, 18, 20, 22, 24, 27, 30, 33

50 VDC

25 V

25 V

R14 / 0603 (1608)

	Inches	Length	Width	Thickness	End Band
	(mm)	.062 ±.006 (1.57 ±0.15)	.032 ±.006 (0.81 ±0.15)	.030 +.005 -.003 (0.76 +.13-.08)	.014 ±.006 (0.35 ±.15)

Capacitance values (pF): 0.2, 0.3, 0.4, 0.5, 0.6, 0.7, 0.8, 0.9, 1.0, 1.1, 1.2, 1.3, 1.5, 1.8, 2.0, 2.2, 2.4, 2.7, 3.0, 3.3, 3.6, 3.9, 4.3, 4.7, 5.1, 5.6, 6.2, 6.8, 7.5, 8.2, 9.1, 10, 11, 12, 13, 15, 16, 18, 20, 22, 24, 27, 30, 33, 36, 39, 43, 47, 56, 68, 82, 100

250 VDC

R15 / 0805 (2012)

	Inches	Length	Width	Thickness	End Band
	(mm)	.080 ±.008 (2.03 ±0.20)	.050 ±.008 (1.27 ±0.20)	.040 ±.006 (1.02 ±.15)	.020 ±.010 (0.50 ±.25)

Capacitance values (pF): 0.3, 0.5, 0.7, 1.0, 1.1, 1.2, 1.3, 1.5, 1.8, 2.0, 2.2, 2.4, 2.7, 3.0, 3.3, 3.6, 3.9, 4.3, 4.7, 5.1, 5.6, 6.2, 6.8, 7.5, 8.2, 9.1, 10, 11, 12, 13, 15, 16, 18, 20, 22, 24, 27, 30, 33, 36, 39, 43, 47, 56, 68, 82, 100, 120, 150, 180, 220

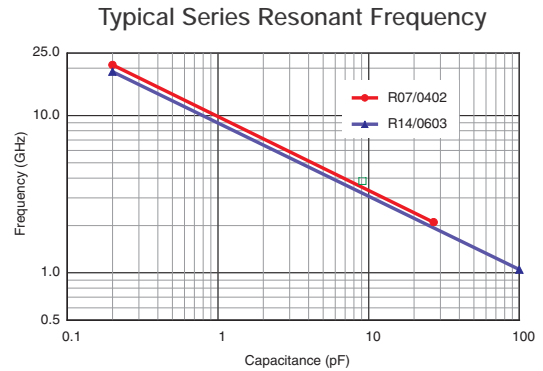
250 VDC

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



DIELECTRIC CHARACTERISTICS

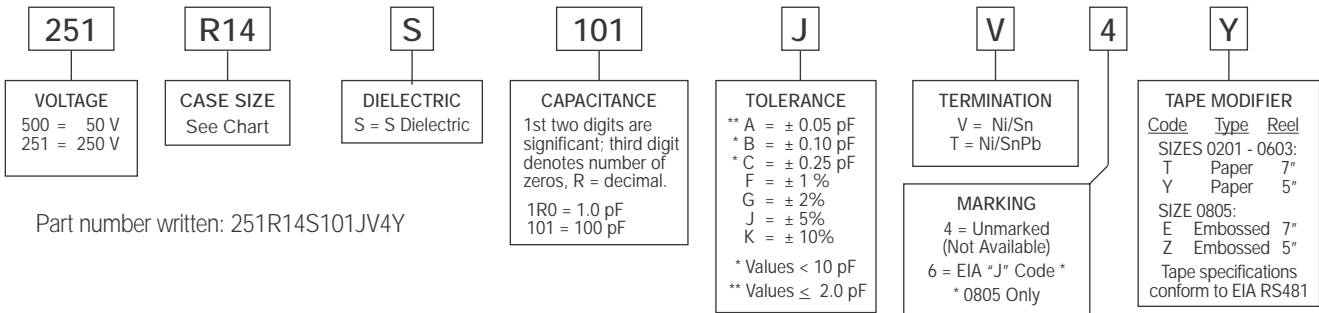
TEMPERATURE COEFFICIENT:	0 ± 30ppm /°C, -55 to 125°C
QUALITY FACTOR:	2,500 min., 10,000 typical
INSULATION RESISTANCE:	>10 G @ 25°C, WVDC; 125°C IR is 10% of 25°C rating.
DIELECTRIC STRENGTH:	2.5 X WVDC Min., 25°C, 50 mA max
TEST PARAMETERS:	1MHz ±50kHz, 1.0±0.2 VRMS, 25°C
AVAILABLE CAPACITANCE:	Size 0402: 0.2 - 33 pF Size 0603: 0.2 - 100 pF Size 0805: 0.3 - 220 pF



MECHANICAL & ENVIRONMENTAL CHARACTERISTICS

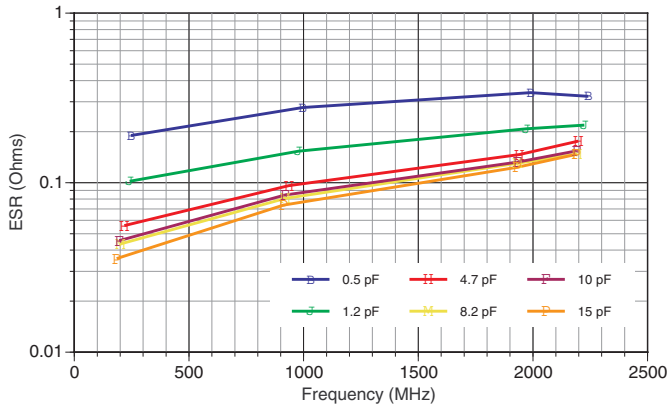
	SPECIFICATION	TEST PARAMETERS
SOLDERABILITY:	Solder coverage 90% of metalized areas No termination degradation	Preheat chip to 120°-150°C for 60 sec., dip terminals in rosin flux then dip in Sn62 solder @ 240°±5°C for 5±1 sec
RESISTANCE TO SOLDERING HEAT:	No mechanical damage Capacitance change: ±2.5% or 0.25pF Q>500 I.R. >10 G Ohms Breakdown voltage: 2.5 x WVDC	Preheat device to 80°-100°C for 60 sec. followed by 150°-180°C for 60 sec. Dip in 260°±5°C solder for 10±1 sec. Measure after 24±2 hour cooling period
TERMINAL ADHESION:	Termination should not pull off. Ceramic should remain undamaged.	Linear pull force* exerted on axial leads soldered to each terminal. *0402 2.0lbs, 0603 2.0lbs (min.)
PCB DEFLECTION:	No mechanical damage. Capacitance change: 2% or 0.5pF Max	Glass epoxy PCB: 0.5 mm deflection
LIFE TEST:	No mechanical damage Capacitance change: ±3.0% or 0.3 pF Q>500 I.R. >1 G Ohms Breakdown voltage: 2.5 x WVDC	Applied voltage: 200% rated voltage, 50 mA max. Temperature: 125°±3°C Test time: 1000+48-0 hours
THERMAL CYCLE:	No mechanical damage. Capacitance change: ±2.5% or 0.25pF Q>2000 I.R. >10 G Ohms Breakdown voltage: 2.5 x WVDC	5 cycles of: 30±3 minutes @ -55°+0/-3°C, 2-3 min. @ 25°C, 30±3 min. @ +125°+3/-0°C, 2-3 min. @ 25°C Measure after 24±2 hour cooling period
HUMIDITY, STEADY STATE:	No mechanical damage. Capacitance change: ±5.0% or 0.50pF max. Q>300 I.R. 1 G-Ohm Breakdown voltage: 2.5 x WVDC	Relative humidity: 90-95% Temperature: 40°±2°C Test time: 500 +12/-0 Hours Measure after 24±2 hour cooling period
HUMIDITY, LOW VOLTAGE:	No mechanical damage. Capacitance change: ±5.0% or 0.50pF max. Q>300 I.R. = 1 G-Ohm min. Breakdown voltage: 2.5 x WVDC	Applied voltage: 1.5 VDC, 50 mA max. Relative humidity: 85±2% Temperature: 40°±2°C Test time: 240 +12/-0 Hours Measure after 24±2 hour cooling period
VIBRATION:	No mechanical damage. Capacitance change: ±2.5% or 0.25pF Q>1000 I.R. 10 G-Ohm Breakdown voltage: 2.5 x WVDC	Cycle performed for 2 hours in each of three perpendicular directions Frequency range 10Hz to 55 Hz to 10 Hz traversed in 1 minute. Harmonic motion amplitude: 1.5mm

HOW TO ORDER

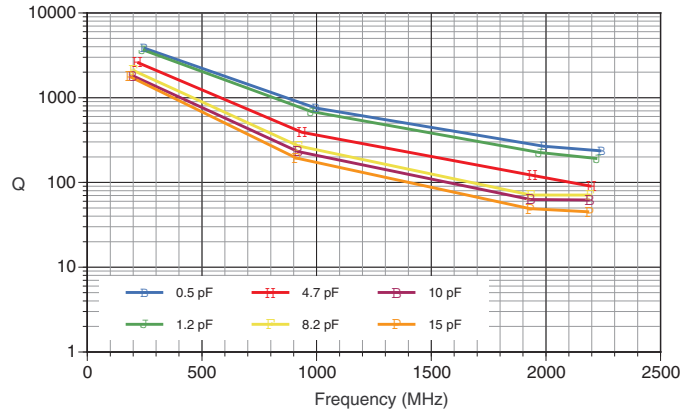


RF CHARACTERISTICS VERSUS FREQUENCY

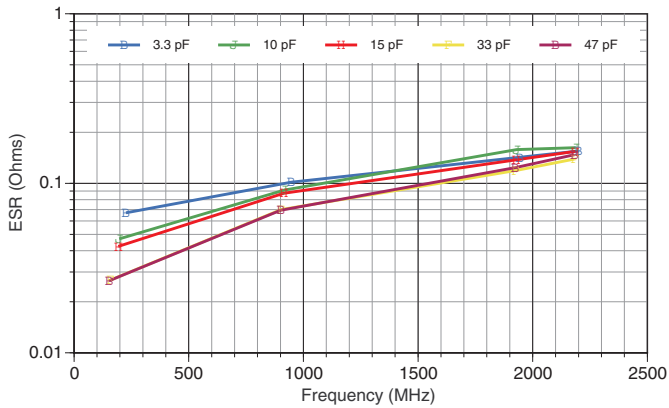
Equivalent Series Resistance: 0402/R07S



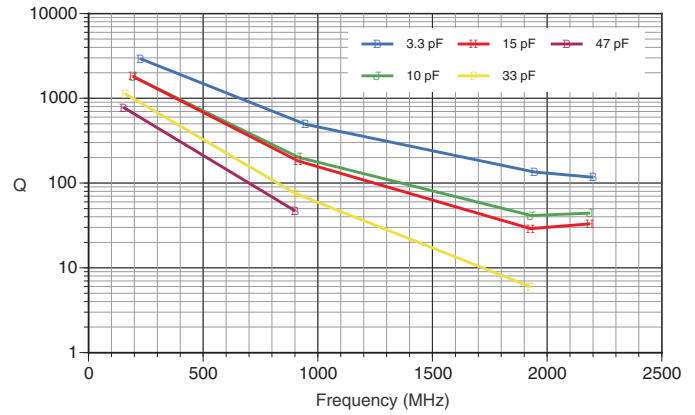
Q Factor: 0402/R07S



Equivalent Series Resistance: 0603/R14S



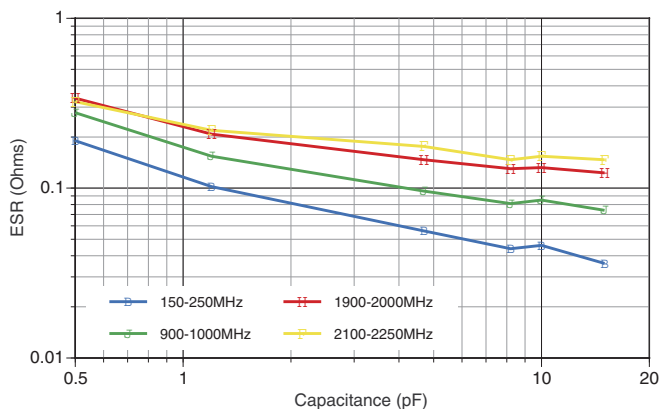
Q Factor: 0603/R14S



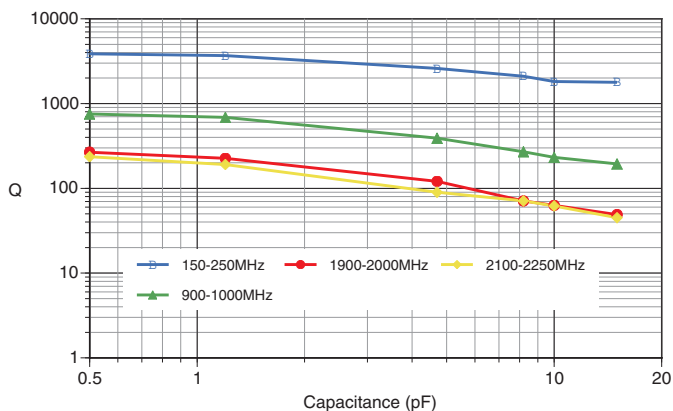
Measurements performed on a Boonton 34A Resonant Coaxial Line and represent typical capacitor performance.

RF CHARACTERISTICS VERSUS CAPACITANCE

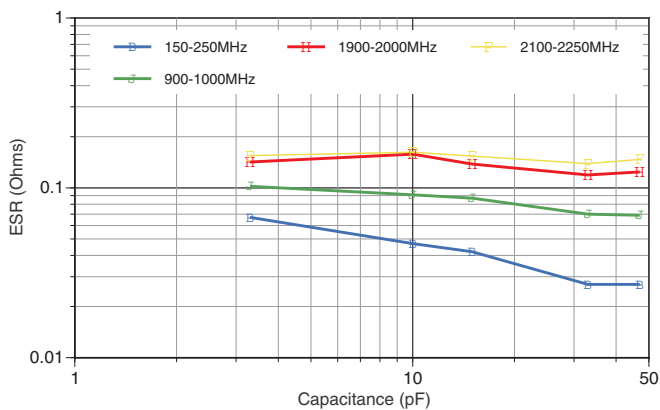
Equivalent Series Resistance: 0402/R07S



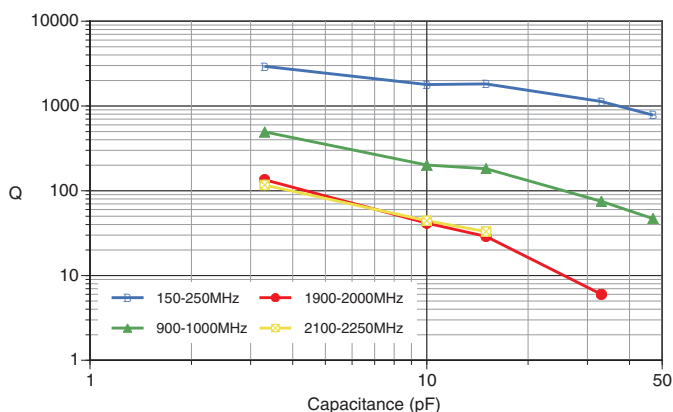
Q Factor: 0402/R07S



Equivalent Series Resistance: 0603/R14S



Q Factor: 0603/R14S



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