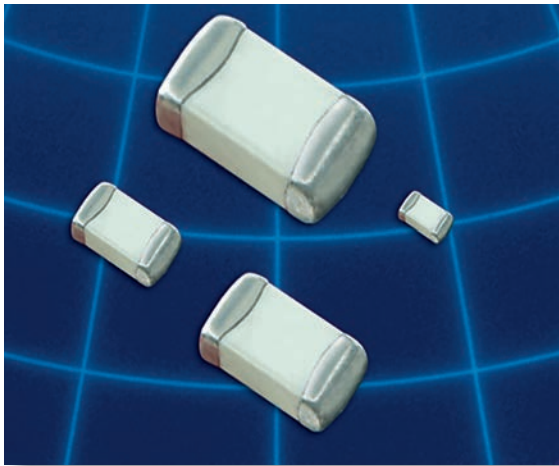


# MULTI-LAYER HIGH-Q CAPACITORS



These lines of multilayer capacitors have been developed for High-Q and microwave applications.

- The **S-Series** (R07S, R14S, R15S) capacitors give an ultra-high Q performance, and exhibit NPO temperature characteristics.
- The **L-Series** (R05L) capacitors give mid-high Q performance, and exhibit NPO temperature characteristics.
- The **E-Series** (S42E, S48E, S58E) capacitors give excellent high-Q performance from HF to Microwave frequencies. Typical uses are high voltage, high current applications. They are offered in chip (Ni barrier or Non-Magnetic Pt.-Ag) or in Non-Magnetic leaded form.
- RoHS compliance is standard for all unleaded parts (see termination options box).

## HOW TO ORDER

<b>252</b>	<b>S48</b>	<b>E</b>	<b>470</b>	<b>K</b>	<b>V</b>	<b>4</b>	<b>E</b>
<b>WVDC<sup>2</sup></b> 250 = 25 V 201 = 200 V 251 = 250 V 501 = 500 V 102 = 1000 V 152 = 1500 V 252 = 2500 V 362 = 3600 V 722 = 7200 V	<b>CASE SIZE</b> R05 (0201) R07 (0402) R14 (0603) R15 (0805) S42 (1111) S48 (2525) S58 (3838)	<b>CAPACITANCE (pF)</b> 1st two digits are significant; third digit denotes number of zeros, R = decimal. 100 = 10 pF 101 = 100 pF	<b>DIELECTRIC</b> S = Ultra High Q NPO L = High Q NPO E = Ultra High Q NPO, High Voltage, High Power, T <sup>1</sup> = High Temp (175C) Ultra High Q NPO	<b>TOLERANCE</b> A = ± 0.05 pF B = ± 0.10 pF C = ± 0.25 pF D = ± 0.50 pF F = ±1 % G = ±2% J = ±5% K = ± 10%  For tolerance availability, see chart.	<b>TERMINATION</b> <b>Nickel Barrier</b> V = Ni/Sn (Green) T = Ni/SnPb G = Ni/Au (Green) <b>Non-Mag<sup>1</sup></b> U = Cu/Sn (Green) C = Cu/SnPb <b>Leaded (All Non-Mag)<sup>1</sup></b> 1 = Microstrip 2 = Axial Ribbon 3 = Axial Wire 4 = Radial Ribbon 5 = Radial Wire	<b>PACKAGING</b> S = Bulk W = Waffle Pack <b>0201 - 0603</b> Y = Paper 5" Reel T = Paper 7" Reel R <sup>1</sup> = Paper 13" Reel J <sup>1</sup> = Paper 5" Reel - Horizontally Oriented Electrodes N <sup>1</sup> = Paper 5" Reel - Vertically Oriented Electrodes L <sup>1</sup> = Paper 7" Reel - Horizontally Oriented Electrodes V <sup>1</sup> = Paper 7" Reel - Vertically Oriented Electrodes <b>0805 - 3838</b> Z = Embossed 5" Reel E = Embossed 7" Reel U <sup>1</sup> = Embossed 13" Reel M <sup>1</sup> = Embossed 5" Reel - Horizontally Oriented Electrodes Q <sup>1</sup> = Embossed 5" Reel - Vertically Oriented Electrodes G <sup>1</sup> = Embossed 7" Reel - Horizontally Oriented Electrodes P <sup>1</sup> = Embossed 7" Reel - Vertically Oriented Electrodes Tape specifications conform to EIA RS481	
Part Number written: <b>252S48E470KV4E</b>							
<b>MARKING</b> 3 = Cap Code & Tolerance 4 = No Marking 6 = EIA Code (Marking option is only available on 0805 and larger case sizes)							

<sup>1</sup> - Not available for all MLCC - Call factory for info.  
<sup>2</sup> - WVDC - Working Voltage DC.

## LOW ESR / HIGH-Q CAPACITOR SELECTION CHART

EIA Size Cap. Value		RF Power Applications												
		0201 (R05)		0402	0603	0805	0805	1111	2525	3838				
		NPO (R05L)	NPO (R05G)	(R07S)	(R14S)	(R15S)	(R15G)	(S42E)	(S48E)	(S58E)				
Capacitance pF	Code													
0.1	0R1													
0.2	0R2	25 V	25 V	200 V	250 V			500V	1500V					
0.3	0R3	25 V	25 V	200 V	250 V	250 V	1000V	500V	1500V					
0.4	0R4	25 V	25 V	200 V	250 V	250 V	1000V	500V	1500V					
0.5	0R5	25 V	25 V	200 V	250 V	250 V	1000V	500V	1500V	2500V				
0.6	0R6	25 V	25 V	200 V	250 V	250 V	1000V	500V	1500V	2500V	3600V	7200V		
0.7	0R7	25 V	25 V	200 V	250 V	250 V	1000V	500V	1500V	2500V	3600V	7200V		
0.8	0R8	25 V	25 V	200 V	250 V	250 V	1000V	500V	1500V	2500V	3600V	7200V		
0.9	0R9	25 V	25 V	200 V	250 V	250 V	1000V	500V	1500V	2500V	3600V	7200V		
1.0	1R0	25 V	25 V	200 V	250 V	250 V	1000V	500V	1500V	2500V	3600V	7200V		
1.1	1R1	25 V	25 V	200 V	250 V	250 V	1000V	500V	1500V	2500V	3600V	7200V		
1.2	1R2	25 V	25 V	200 V	250 V	250 V	1000V	500V	1500V	2500V	3600V	7200V		
1.3	1R3	25 V	25 V	200 V	250 V	250 V	1000V	500V	1500V	2500V	3600V	7200V		
1.4	1R4	25 V	25 V	200 V	250 V	250 V	1000V	500V	1500V	2500V	3600V	7200V		
1.5	1R5	25 V	25 V	200 V	250 V	250 V	1000V	500V	1500V	2500V	3600V	7200V		
1.6	1R6	25 V	25 V	200 V	250 V	250 V	1000V	500V	1500V	2500V	3600V	7200V		
1.7	1R7	25 V	25 V	200 V	250 V	250 V	1000V	500V	1500V	2500V	3600V	7200V		
1.8	1R8	25 V	25 V	200 V	250 V	250 V	1000V	500V	1500V	2500V	3600V	7200V		
1.9	1R9	25 V	25 V	200 V	250 V	250 V	1000V	500V	1500V	2500V	3600V	7200V		
2.0	2R0	25 V	25 V	200 V	250 V	250 V	1000V	500V	1500V	2500V	3600V	7200V		
2.1	2R1	25 V	25 V	200 V	250 V	250 V	1000V	500V	1500V	2500V	3600V	7200V		
2.2	2R2	25 V	25 V	200 V	250 V	250 V	1000V	500V	1500V	2500V	3600V	7200V		
2.4	2R4	25 V	25 V	200 V	250 V	250 V	1000V	500V	1500V	2500V	3600V	7200V		
2.7	2R7	25 V	25 V	200 V	250 V	250 V	1000V	500V	1500V	2500V	3600V	7200V		
3.0	3R0	25 V	25 V	200 V	250 V	250 V	1000V	500V	1500V	2500V	3600V	7200V		
3.3	3R3	25 V	25 V	200 V	250 V	250 V	1000V	500V	1500V	2500V	3600V	7200V		
3.6	3R6	25 V	25 V	200 V	250 V	250 V	1000V	500V	1500V	2500V	3600V	7200V		
3.9	3R9	25 V	25 V	200 V	250 V	250 V	1000V	500V	1500V	2500V	3600V	7200V		
4.3	4R3	25 V	25 V	200 V	250 V	250 V	1000V	500V	1500V	2500V	3600V	7200V		
4.7	4R7	25 V	25 V	200 V	250 V	250 V	1000V	500V	1500V	2500V	3600V	7200V		
5.1	5R1	25 V	25 V	200 V	250 V	250 V	1000V	500V	1500V	2500V	3600V	7200V		
5.6	5R6	25 V	25 V	200 V	250 V	250 V	1000V	500V	1500V	2500V	3600V	7200V		
6.2	6R2	25 V	25 V	200 V	250 V	250 V	1000V	500V	1500V	2500V	3600V	7200V		
6.8	6R8	25 V	25 V	200 V	250 V	250 V	1000V	500V	1500V	2500V	3600V	7200V		
7.5	7R5	25 V	25 V	200 V	250 V	250 V	1000V	500V	1500V	2500V	3600V	7200V		
8.2	8R2	25 V	25 V	200 V	250 V	250 V	1000V	500V	1500V	2500V	3600V	7200V		
9.1	9R1	25 V	25 V	200 V	250 V	250 V	1000V	500V	1500V	2500V	3600V	7200V		
10	100	25 V	25 V	200 V	250 V	250 V	1000V	500V	1500V	2500V	3600V	7200V		
11	110	25 V	25 V	200 V	250 V	250 V	1000V	500V	1500V	2500V	3600V	7200V		
12	120	25 V	25 V	200 V	250 V	250 V	1000V	500V	1500V	2500V	3600V	7200V		
13	130	25 V	25 V	200 V	250 V	250 V	1000V	500V	1500V	2500V	3600V	7200V		
15	150	25 V	25 V	200 V	250 V	250 V	1000V	500V	1500V	2500V	3600V	7200V		
16	160	25 V	25 V	200 V	250 V	250 V	1000V	500V	1500V	2500V	3600V	7200V		
18	180	25 V	25 V	200 V	250 V	250 V	1000V	500V	1500V	2500V	3600V	7200V		
20	200	25 V		200 V	250 V	250 V	1000V	500V	1500V	2500V	3600V	7200V		
22	220	25 V		200 V	250 V	250 V	1000V	500V	1500V	2500V	3600V	7200V		
24	240	25 V		200 V	250 V	250 V	1000V	500V	1500V	2500V	3600V	7200V		
27	270	25 V		200 V	250 V	250 V	1000V	500V	1500V	2500V	3600V	7200V		
30	300	25 V		200 V	250 V	250 V	1000V	500V	1500V	2500V	3600V	7200V		
33	330	25 V		200 V	250 V	250 V	1000V	500V	1500V	2500V	3600V	7200V		

Consult factory for Non-Standard values.

\*\*A tolerance only available for R07S (0402) and R14S(0603) caps

## LOW ESR / HIGH-Q CAPACITOR SELECTION CHART

EIA Size Cap. Value			RF Power Applications													
			0201 (R05)		0402	0603	0805	0805	1111	2525	3838					
			NPO (R05L)	NPO (R05G)	(R07S)	(R14S)	(R15S)	(R15G)	(S42E)	(S48E)	(S58E)					
Capacitance pF	Code	Tolerance														
36	360	F	25 V			250 V	250 V	1000V	500V	1500V	2500V	3600V	7200V			
39	390		25 V			250 V	250 V	1000V	500V	1500V	2500V	3600V	7200V			
43	430		25 V			250 V	250 V	1000V	500V	1500V	2500V	3600V	7200V			
47	470		25 V			250 V	250 V	1000V	500V	1500V	2500V	3600V	7200V			
51	510		25 V			250 V	250 V	1000V	500V	1500V	2500V	3600V	7200V			
56	560		25 V			250 V	250 V	1000V	500V	1500V	2500V	3600V	7200V			
62	620		25 V			250 V	250 V	1000V	500V	1500V	2500V	3600V	7200V			
68	680		25 V			250 V	250 V	1000V	500V	1500V	2500V	3600V	7200V			
75	750		25 V			250 V	250 V	1000V	500V	1500V	2500V	3600V	7200V			
82	820		25 V			250 V	250 V	1000V	500V	1500V	2500V	3600V	7200V			
91	910	G	25 V			250 V	250 V	1000V	500V	1500V	2500V	3600V	7200V			
100	101		25 V			250 V	250 V	1000V	500V	1500V	2500V	3600V	7200V			
110	111						250 V		300V	1500V	2500V	3600V	7200V			
120	121							250 V	300V	1000V	2500V	3600V	7200V			
130	131		J						250 V		300V	1000V	2500V	3600V	7200V	
150	151									250 V		300V	1000V	2500V	3600V	7200V
160	161									250 V		300V	1000V	2500V	3600V	7200V
180	181									250 V		300V	1000V	2500V	3600V	7200V
200	201									250 V		300V	1000V	2500V	3600V	
220	221									250 V		200V	1000V	2500V	3600V	
240	241										200V	1000V	2500V	3600V		
270	271										200V	1000V	2500V	3600V		
300	301										200V	1000V	1500V	3600V		
330	331										200V	1000V	1500V	3600V		
360	361	K								200V	1000V	1500V	3600V			
390	391										200V	500V	1500V	3600V		
430	431										200V	500V	1500V	2500V		
470	471										200V	500V	1500V	2500V		
510	511										100V	500V	1000V	2500V		
560	561										100V	500V	1000V	2500V		
620	621										100V	500V	1000V	2500V		
680	681										50V		1000V	2500V		
750	751										50V		1000V	2500V		
820	821		G								50V		1000V	2500V		
910	911										50V		1000V	1000V		
1000	102										50V		1000V	1000V		
1200	122												1000V	1000V		
1500	152												500V	1000V		
1800	182												500V	1000V		
2200	222												300V	1000V		
2700	272												300V	500V		
3300	332													500V		
3900	392													500V		
4700	472												500V			
5100	512												500V			
10000	103															

Consult factory for Non-Standard values.

## DIELECTRIC CHARACTERISTICS

## NPO

TEMPERATURE COEFFICIENT:	0 ± 30ppm /°C, -55 to 125°C
QUALITY FACTOR / DF:	Q >1,000 @ 1KHz (C>1,000pF), Typical 10,000 (C<1,000 pF)
INSULATION RESISTANCE:	>100 GΩ @ 25°C, WVDC <sup>1</sup> ; 125°C IR is 10% of 25°C rating
DIELECTRIC STRENGTH:	500 V ≤ 2.5 X WVDC <sup>1</sup> Min., 25°C, 50 mA max 1000 V ≤ 1.5 X WVDC <sup>1</sup> Min., 25°C, 50 mA max > 1500 = 1 X WVDC <sup>1</sup> Min., 25°C, 50 mA max
TEST PARAMETERS::	1MHz ±50kHz, 1.0±0.2 VRMS, 25°C
AVAILABLE CAPACITANCE:	
Size 0201:	0.2 - 100 pF
Size 0402:	0.2 - 33 pF
Size 0603:	0.2 - 100 pF
Size 0805:	0.3 - 220 pF
Size 1111:	0.2 - 1000 pF
Size 2525:	1.0 - 2700 pF
Size 3838:	1.0 - 5100 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 DWW <sup>2</sup> : 2.5 x WVDC <sup>1</sup>	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 <sup>3</sup> exerted on axial leads soldered to each terminal.
PCB DEFLECTION:	No mechanical damage. Capacitance change: 2% or 0.5pF Max	Glass epoxy PCB: 0.5 mm deflection
LIFE TEST:	MIL-STD-202, Method 108I No mechanical damage Capacitance change: ±3.0% or 0.3 pF Q>500 I.R. >1 G Ohms DWW <sup>2</sup> : 2.5 x WVDC <sup>1</sup>	Applied voltage: 200% of WVDC <sup>1</sup> for capacitors rated at 500 volts DC or less. 100% of WVDC <sup>1</sup> for capacitors rated at 1250 volts DC or less. 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 DWW <sup>2</sup> : 2.5 x WVDC <sup>1</sup>	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 DWW <sup>2</sup> : 2.5 x WVDC <sup>1</sup>	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. DWW <sup>2</sup> : 2.5 x WVDC <sup>1</sup>	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 DWW <sup>2</sup> : 2.5 x WVDC <sup>1</sup>	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

<sup>1</sup> - WVDC - Working Voltage DC.

<sup>2</sup> - DWV - Dielectric Withstanding Voltage.

<sup>3</sup> - 0402 ≥ 2.0lbs, 0603 ≥ 4.0lbs (min).

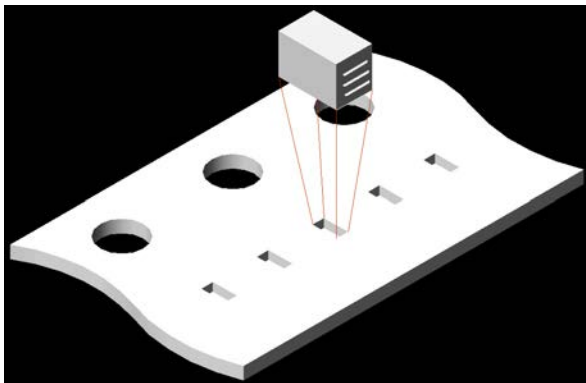
<sup>4</sup> - Whichever is less.

## MECHANICAL CHARACTERISTICS

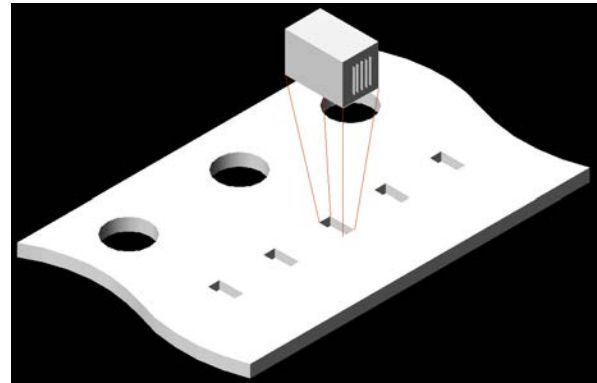
Size	Units	Length	Width	Thickness	End Band
EIA 0201	In	.024 ±.001	.012 ±.001	.012 ±.001	.008 Max.
Metric (0603)	mm	(0.60 ±0.03)	(0.30 ±0.03)	(0.30 ±0.03)	(0.20 Max.)
EIA 0402	In	.040 ±.004	.020 ±.004	.020 ±.004	.010 ±.006
Metric (1005)	mm	(1.02 ±0.1)	(0.51 ±0.1)	(0.51 ±0.1)	(0.25 ±.15)
EIA 0603	In	.062 ±.006	.032 ±.006	.030 +.005/-.003	.014 ±.006
Metric (1608)	mm	(1.57 ±0.15)	(0.81 ±0.15)	(0.76 +.13-.08)	(0.35 ±.15)
EIA 0805	In	.080 ±.008	.050 ±.008	.040 ±.006	.020 ±.010
Metric (2012)	mm	(2.03 ±0.20)	(1.27 ±0.20)	(1.02 ±.15)	(0.50 ±.25)

## HORIZONTAL AND VERTICAL ORIENTED CAPACITORS

### Horizontal Electrode Orientation



### Vertical Electrode Orientation



## APPLICATIONS & FEATURES

Size:	EIA 0201, 0402
Performance:	SRF's up to 20 GHz, Ultra High Q, Tight tolerance, Ultralow ESR
Termination:	Ni/Au, Ni/Sn, Ni/SnPb
Applications:	High Frequency Wireless Communications, Portable Wireless Products, Battery Powered Products

RoHS Compliant

## BENEFITS OF USING ORIENTED CAPACITORS

- Consistent Orientation - Improved repeatability of production circuits.
- Consistent Orientation - More consistent filter performance.
- Vertical Orientation - The elimination of parallel frequencies.
- Vertical Orientation - Lower inductance for a given capacitor.
- Horizontal Orientation - Lower coupling between adjacent capacitors.

# E-SERIES TERMINATIONS AND LEADS

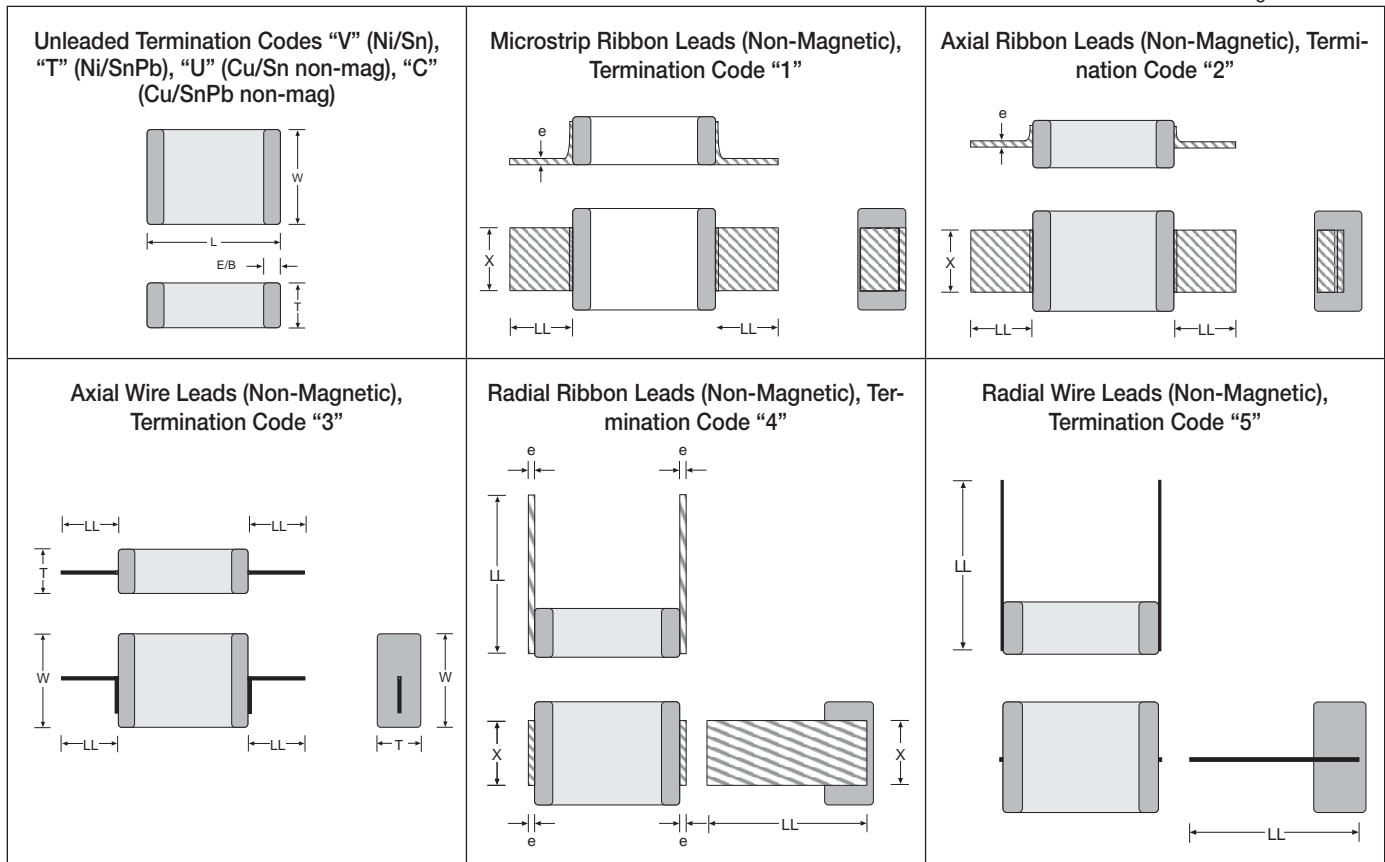
## CHIP DIMENSIONS

Termination	Size	Units	L	Tol	W	Tol	T	E / B	Tol
V, T U, C	S42E	In	0.110	+0.020 -0.010	0.110	+/- .015	0.102 Max.	0.015 Typ.	+/- 0.008
		mm	2.79	+0.51 -0.25	2.79	+/- 0.38	2.59 Max.	0.38 Typ.	+/- 0.20
	S48E	In	0.230	+0.025 -0.010	0.250	+/- .015	0.150 Max.	0.025 Typ.	
		mm	5.84	+0.63 -0.25	6.35	+/- 0.38	3.81 Max.	0.63 Typ.	
	S58E	In	0.380	+0.015 -0.010	0.380	+/- .010	0.170 Max.	0.025 Typ.	
		mm	9.65	+0.38 -0.25	9.65	+/- 0.25	4.32 Max.	0.63 Typ.	

For all E-Series Models:

**OPERATING TEMP. :** -55 to +125°C  
**INSULATION RESISTANCE:** >10G Ω @ 25°C  
**TEMPERATURE COEFFICIENT:** 0 ± 30ppm /°C, -55 to 125°C  
**DISSIPATION FACTOR (TYP):** < 0.05% @ 1 MHz

Drawings not to scale

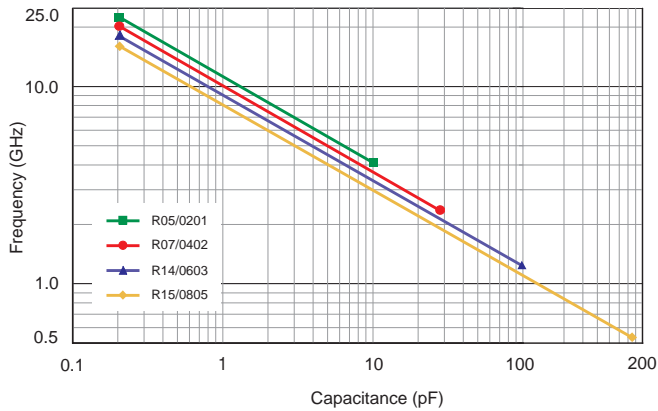


Lead	Size	LL(min)	X	Tol	e	e-Tol
1	S42E	0.25	0.093	+/-0.005	0.004	+/- 0.002
		6.40	2.36	+/- 0.13	0.102	+/- 0.051
	S48E	0.394	0.217	+/- 0.02	0.009	- 0.0019/+ 0.0031
		10.0	5.5	+/- 0.50	0.220	- 0.050/+ 0.080
	S58E	0.748	0.35	+/- 0.02	0.010	- 0.0019/+ 0.0039
		19.00	8.90	+/- 0.50	0.250	- 0.050/+ 0.100
2	S42E	0.25	0.093	+/-0.005	0.004	+/- 0.002
		6.40	2.36	+/- 0.13	0.102	+/- 0.051
	S48E	0.394	0.217	+/- 0.02	0.009	- 0.0019/+ 0.0031
		10.00	5.50	+/- 0.50	0.220	- 0.050/+ 0.080
	S58E	0.748	0.35	+/- 0.02	0.010	- 0.0019/+ 0.0039
		19.00	8.90	+/- 0.50	0.25	- 0.050/+ 0.100
3	S42E	0.25	0.020in (0.511) diameter wire			
		6.40				
	S48E	0.394				
		10.00				
S58E	0.748					
	19.00					

Lead	Size	LL(min)	X	Tol	e	e-Tol
4	S42E	0.352	0.093	+/-0.005	0.004	+/- 0.002
		8.90	2.36	+/- 0.13	0.102	+/- 0.051
	S48E	0.501	0.217	+/- 0.02	0.009	- 0.0019/+ 0.0031
		12.70	5.50	+/- 0.50	0.220	- 0.050/+ 0.080
	S58E	0.886	0.35	+/- 0.02	0.010	- 0.0019/+ 0.0039
		22.50	8.90	+/- 0.50	0.25	- 0.050/+ 0.100
5	S42E	0.25	0.020in (0.511) diameter wire			
		6.40				
	S48E	0.394				
		10.00				
S58E	0.748					
	19.00					

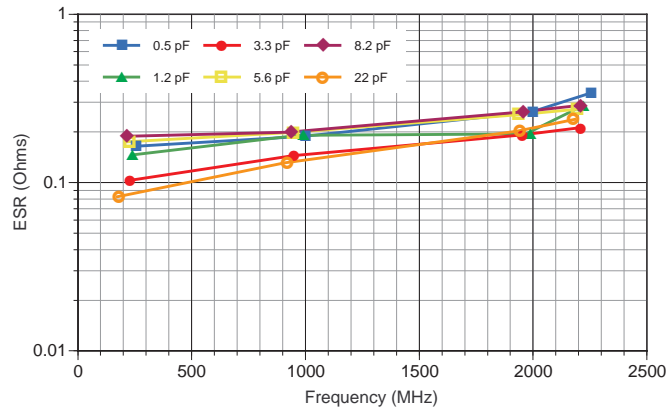
# SERIES RESONANCE CHART

Typical Series Resonant Frequency (Series Mounted)

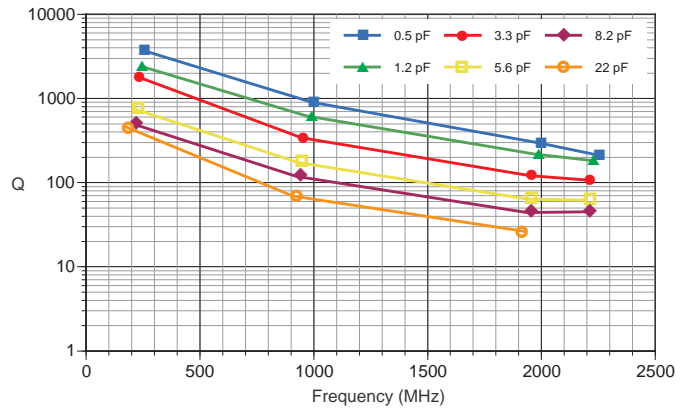


# RF CHARACTERISTICS - L-SERIES

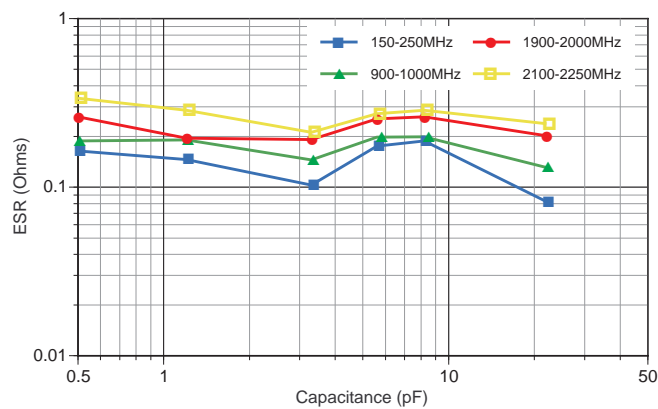
ESR vs Frequency: 0201/R05L



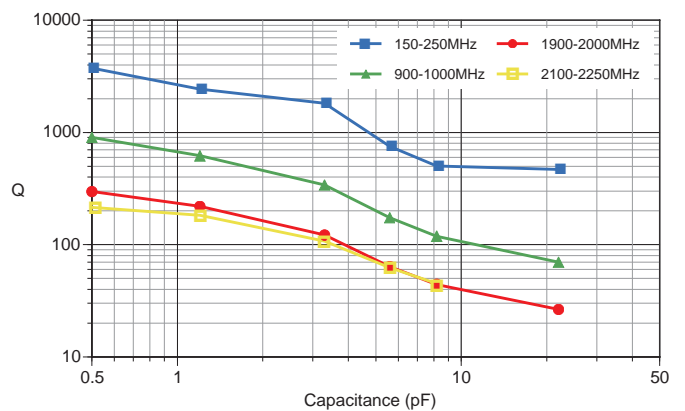
Q vs Frequency: 0201/R05L



ESR vs Capacitance: 0201/R05L



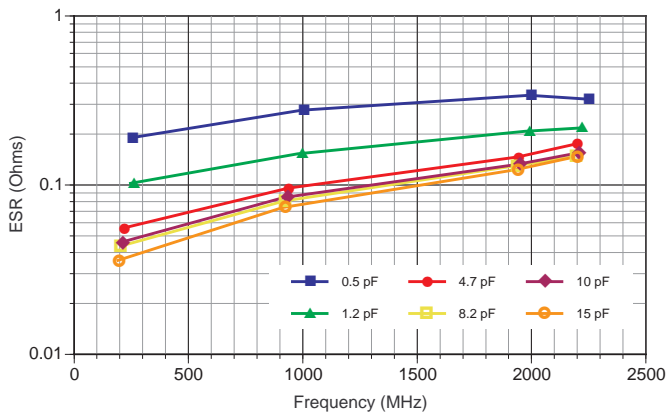
Q vs Capacitance: 0201/R05L



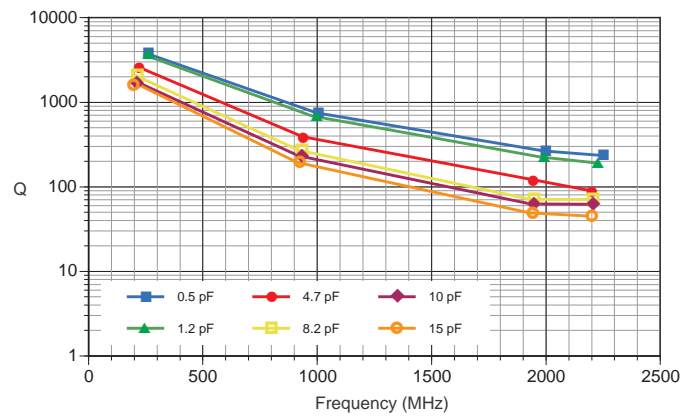


# S-SERIES RF CHARACTERISTICS VERSUS FREQUENCY

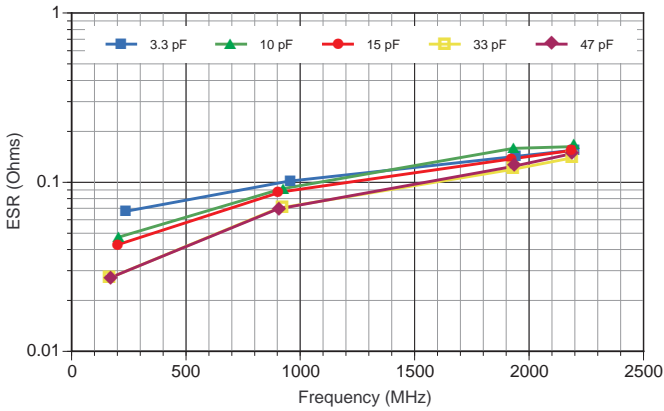
Equivalent Series Resistance: 0402/R07S



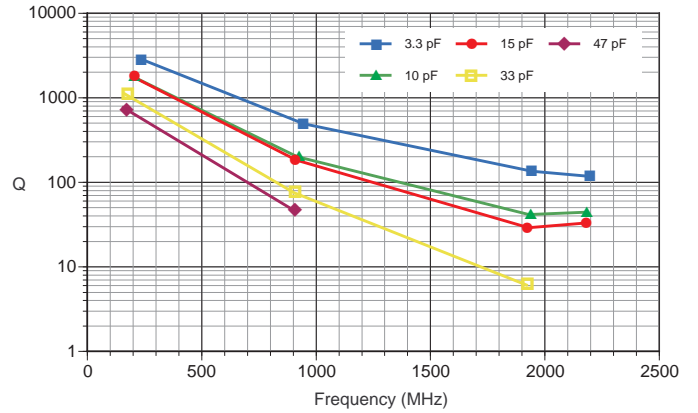
Q Factor: 0402/R07S



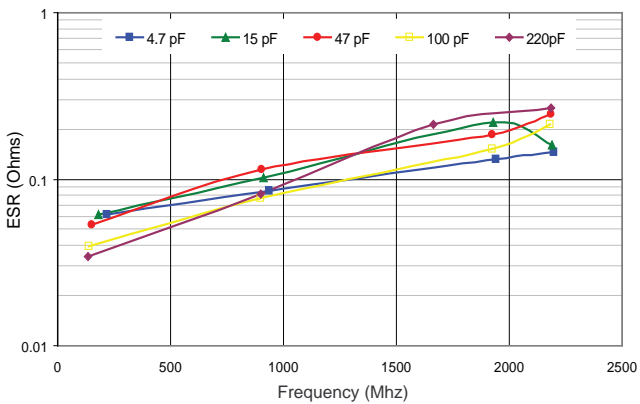
Equivalent Series Resistance: 0603/R14S



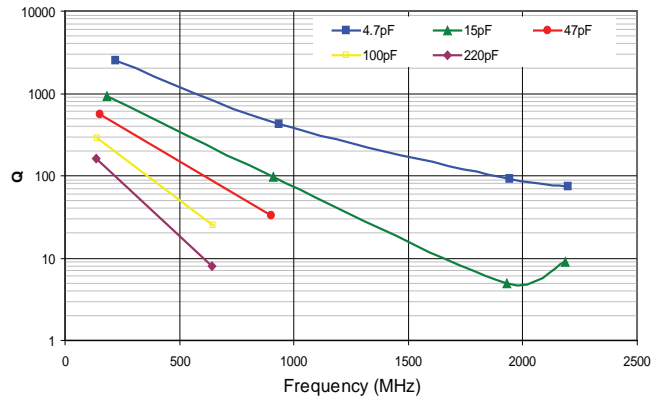
Q Factor: 0603/R14S



Equivalent Series Resistance: 0805/R15S



Q Factor: 0805/R15S

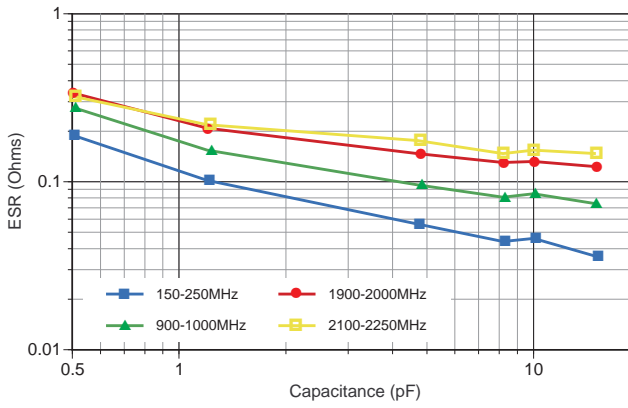


Measurements performed on a Boonton 34A Resonant Coaxial Line and represent typical capacitor performance.

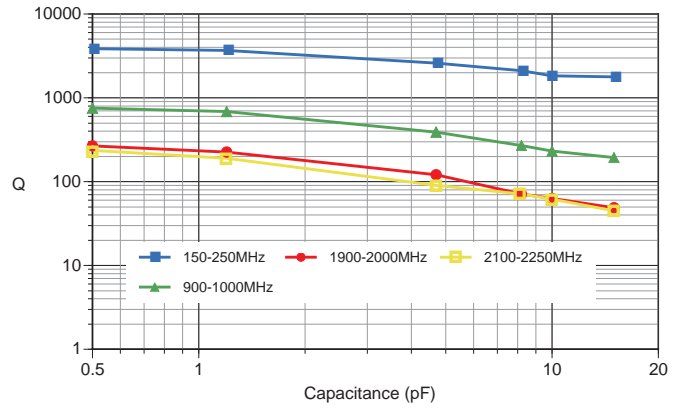


# S-SERIES RF CHARACTERISTICS VERSUS CAPACITANCE

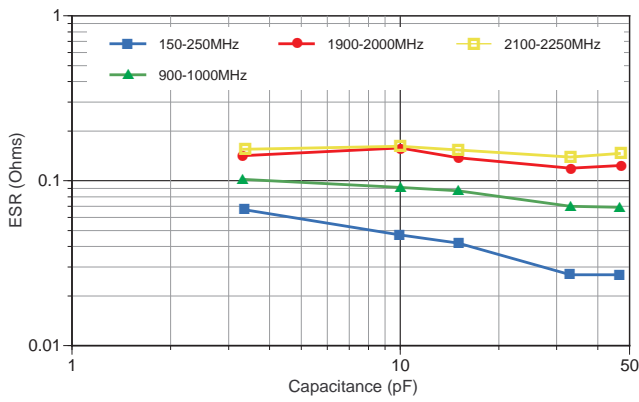
Equivalent Series Resistance: 0402/R07S



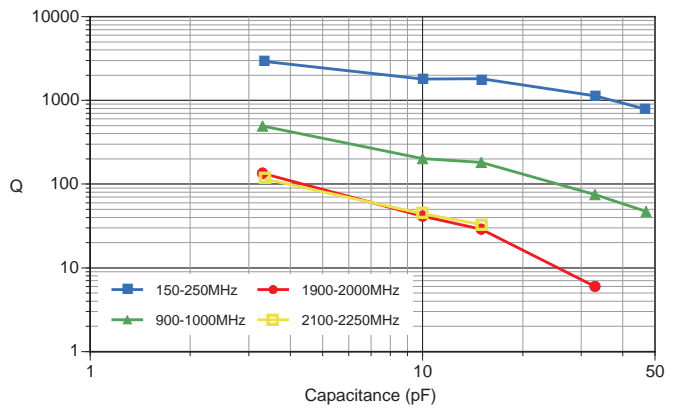
Q Factor: 0402/R07S



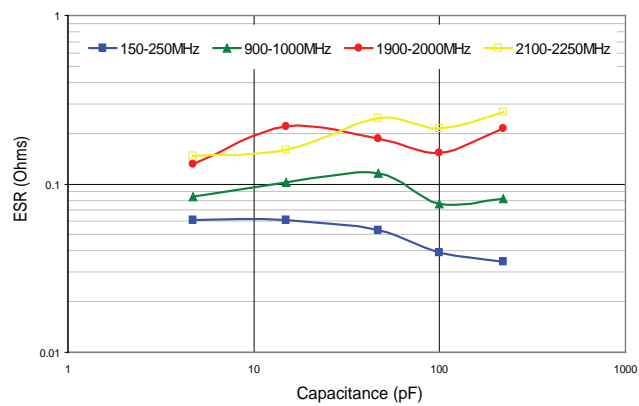
Equivalent Series Resistance: 0603/R14S



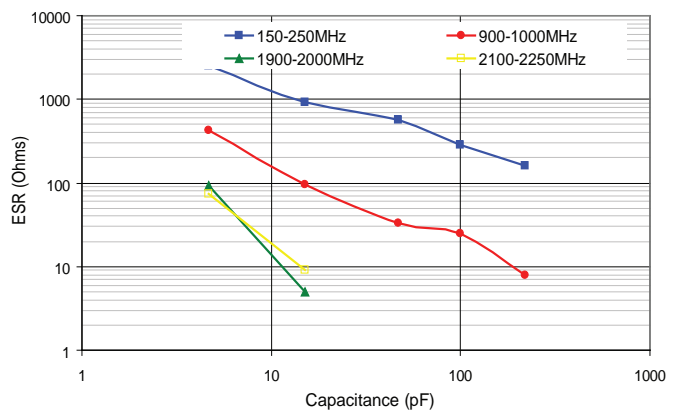
Q Factor: 0603/R14S



Equivalent Series Resistance: 0805/R15S



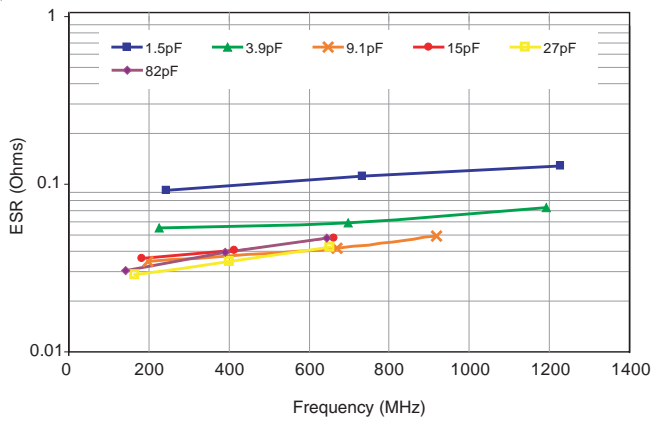
Q Factor: 0805/R15S



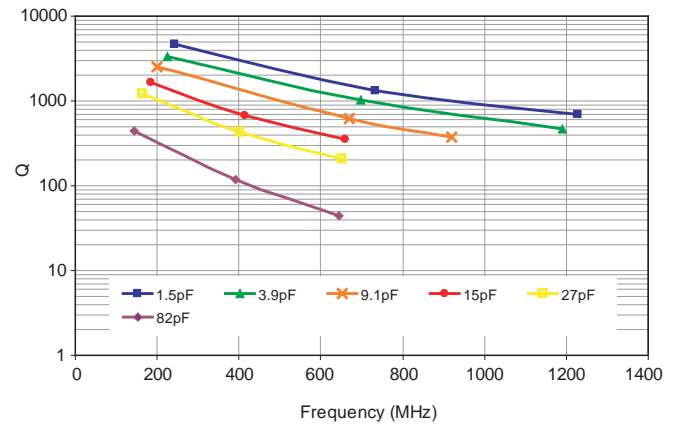
Measurements performed on a Boonton 34A Resonant Coaxial Line and represent typical capacitor performance.

## S42E SERIES RF CHARACTERISTICS VERSUS FREQUENCY

Equivalent Series Resistance: 1111/S42E

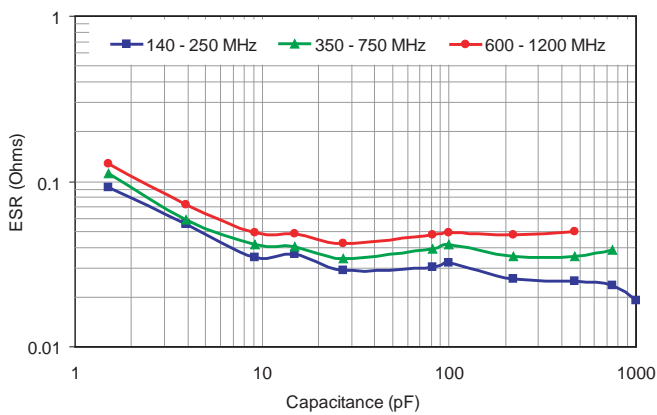


Q Factor: 1111/S42E

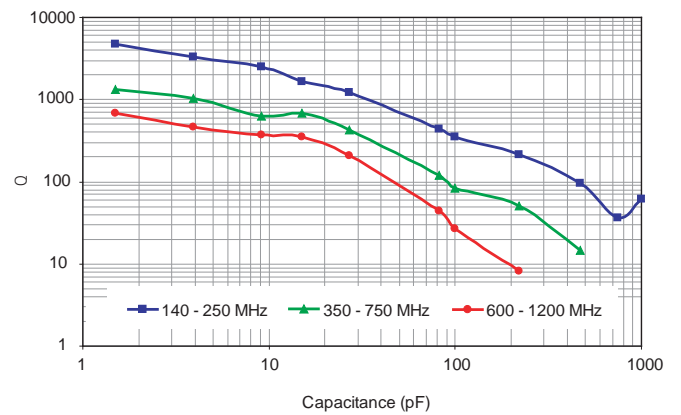


## S42E SERIES RF CHARACTERISTICS VERSUS CAPACITANCE

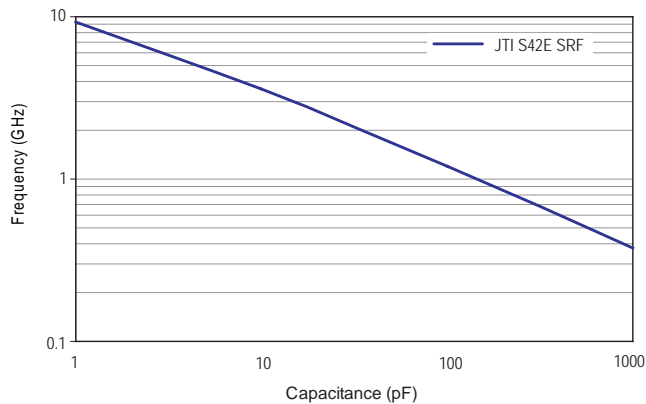
S42E Equivalent Series Resistance vs Capacitance, Typical



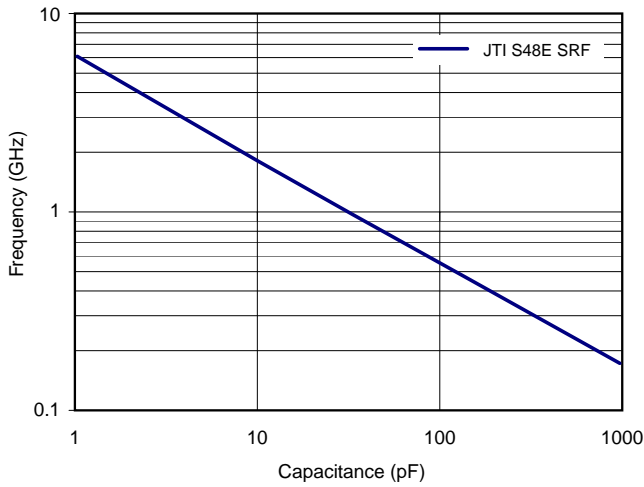
S42E Q vs. Capacitance, Typical



S42E SRF (Series Mount), Typical

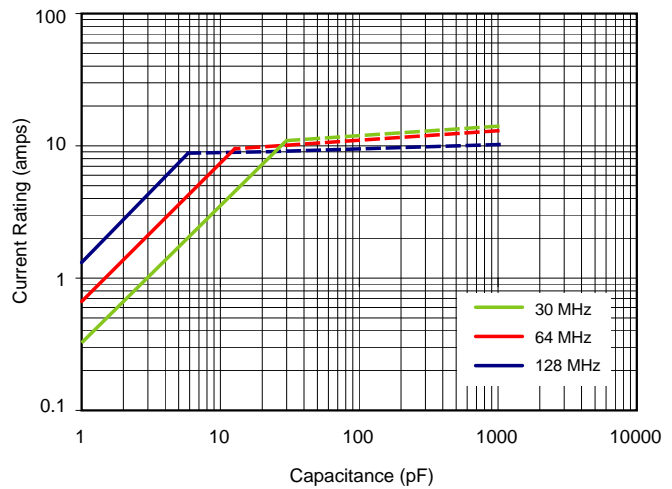


SRF (Shunt Mount), S48E, Typical (Preliminary)



As measured on a 8720C VNA, using a Shunt-Through fixture, and using the S11 magnitude dip to determine the SRF

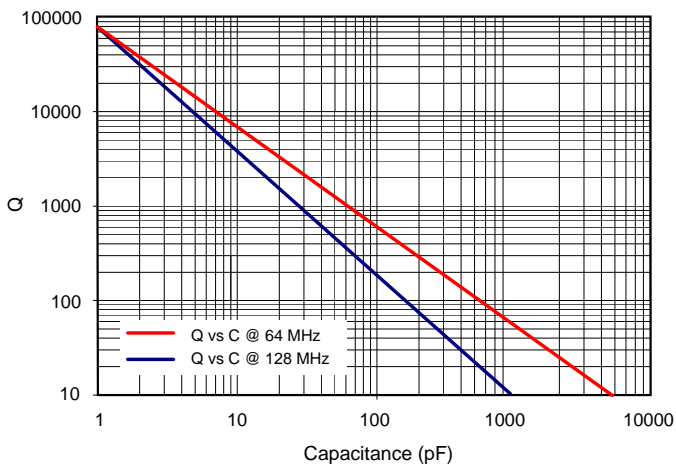
Current Rating vs. Capacitance, S48E, Typical (Preliminary)



Solid traces show voltage limited current (Vrms)

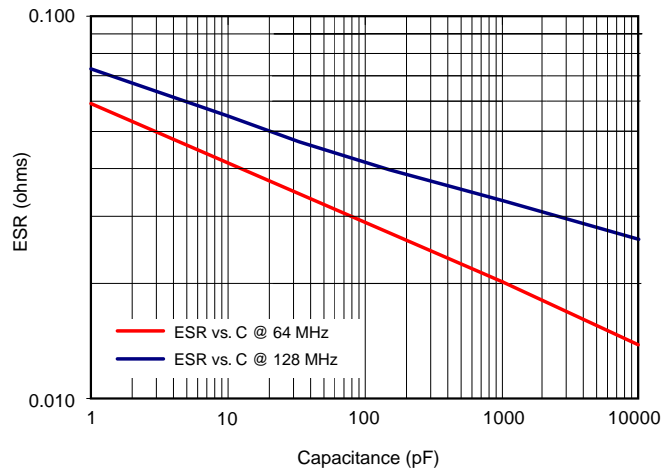
Dotted traces show power dissipation limited current (Based on 4 Watts Power Dissipation, and 125 degrees C case temp.)

S48E Q vs. Capacitance, Typical (Preliminary)



As measured on a 4287A LCR meter, using a 16092A fixture

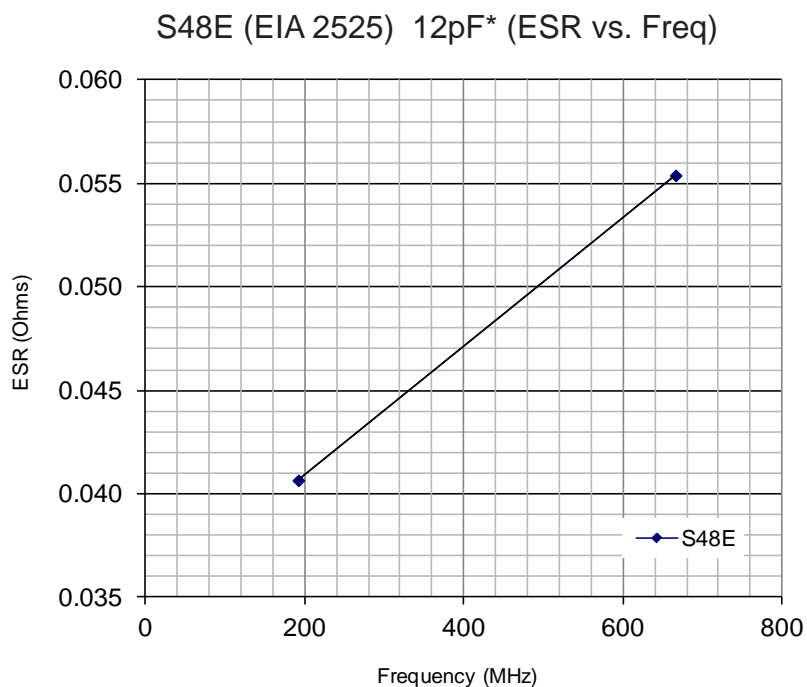
S48E ESR vs. Capacitance, Typical (Preliminary)



As measured on a 4287A LCR meter, using a 16092A fixture

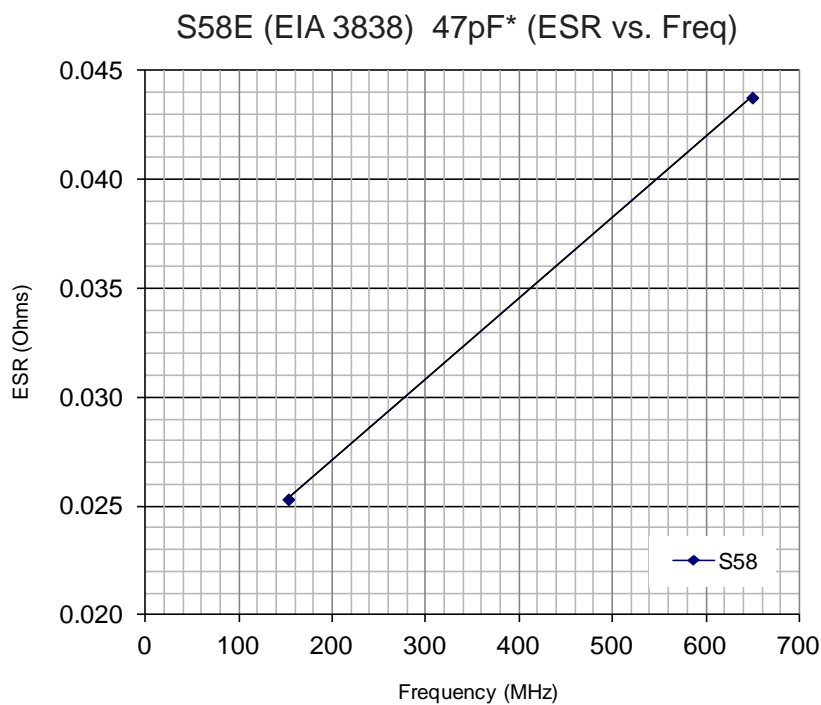
## JTI S48E GRAPHICAL DATA

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## JTI S58E GRAPHICAL DATA

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# Mouser Electronics

Authorized Distributor

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## Johanson:

[250R05L1R8BV4T](#) [500R07S100FV4T](#) [500R07S2R0BV4T](#) [251R14S2R2BV4T](#) [251R14S0R6BV4T](#)  
[500R07S0R4AV4T](#) [500R07S0R3BV4T](#) [500R07S150FV4T](#) [251R14S1R8BV4T](#) [250R05L1R0BV4T](#)  
[251R14S1R2BV4T](#) [251R14S2R0BV4T](#) [251R14S1R0BV4T](#) [250R05L1R5BV4T](#) [500R07S1R2BV4T](#)  
[500R07S3R0BV4T](#) [500R07S4R7BV4T](#) [251R14S3R0BV4T](#) [500R07S100GV4T](#) [500R07S270JV4T](#) [500R07S0R9BV4T](#)  
[251R14S3R9BV4T](#) [500R07S2R2BV4T](#) [250R05L3R6CV4T](#) [500R07S5R6BV4T](#) [251R14S0R5BV4T](#)  
[500R07S2R7BV4T](#) [500R07S1R3BV4T](#) [500R07S100JV4T](#) [500R07S2R4BV4T](#) [251R14S120GV4T](#)  
[500R07S5R6CV4T](#) [500R07S1R2AV4T](#) [250R05L1R2BV4T](#) [500R07S1R5BV4T](#) [500R07S6R8CV4T](#)  
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[500R07S0R5AV4T](#) [102S42E1R3AV4E](#) [251R14S180JV4T](#) [250R05L5R1DV4T](#) [500R07S1R7BV4T](#) [501S42E2R4BV4E](#)  
[501S42E910KV4E](#) [301S42E111JV4E](#) [102S42E5R1CV4E](#) [251R15S2R0DV4E](#) [501S42E270FV4E](#)  
[251R15S820KV4E](#) [251R14S1R3CV4T](#) [251R14S470KV4T](#) [102S42E5R6CV4E](#) [501S42E910FV4E](#) [250R05L180JV4T](#)  
[251R15S131JV4E](#) [500S42E751JV4E](#) [201S42E241FV4E](#) [251R15S120GV4E](#) [250R05L5R6DV4T](#)  
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[251R14S3R3DV4T](#) [501S42E240GV4E](#) [201R07S2R1DV4T](#) [251R15S101FV4E](#) [251R14S160KV4T](#)  
[500R07S8R2BV4T](#) [501S42E750GV4E](#) [102S42E1R2AV4E](#) [201R07S2R1AV4T](#) [250R05L4R3CV4T](#)  
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