

# Kingtronics®

# BKT

## High-Q RF Capacitor-SMD

### FEATURES

- High Q value, low ESR, high reliability
- Low loss, high capacitance stability, working frequency up to 3GHz
- Serialized in size, suitable for surface-mounted elements in hybrid integrated circuits and printed circuits
- Applicable for HF circuits, VHF-microwave circuits, RF circuits and amplifier circuits in various devices



### Product Part Number Identification

1. BKT High-Q RF Capacitor-SMD

<b>BKT</b>	<b>0805</b>	<b>COG</b>	<b>101</b>	<b>J</b>	<b>251</b>	<b>N</b>	<b>T</b>	<b>R</b>
Part No	a	b	c	d	e	f	g	h

a. Size:

0505, 0603, 0805, 1111, 2525, 3838

b. Dielectric: 0±30ppm/°C

c. Nominal Capacitance(pF):0R1=0.1pF, 1R0=1pF, 100=10pF, 101=100pF

d. Tolerance:

A=±0.05pF, B=±0.1pF, C=±0.25pF, D=±0.5pF, F=±1%

G=±2%, J=±5%, K=±10%, M=±20%, Z=+80%/-20%

e. Rated Voltage:

251=250V, 501=500V, 102=1000V, 152=1500V, 202=2000V, 362=3600V, 722=7200V

f. Termination: N=Nickel barrier termination

g. Packaging Style: T=Tape & Reel.

h. Pb: R=RoHS

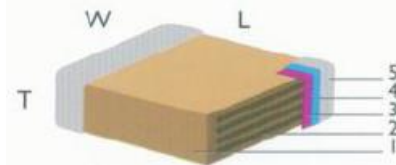
### Main Performance indices

Temperature Coefficient	COG: 0±30ppm/°C
Capacitance Drift	No more than ±0.2% or ±0.05pF, whichever is larger
Quality Factor (Q value)	Over 2000 at 1MHz/1KHz
Insulation Resistance	At 20°C C: ≥10000MΩ
Working Temperature	-55°C~125°C

### Structure and Dimension (Unit: Inches)

#### Structure

SN	Name
1	Ceramic Dielectric
2	Inner Electrode
3	Outer Electrode
4	Nickel Layer
5	Tin Layer



Size	Length	Width	Thickness max
0603	1.52±0.25	0.76±0.25	1.01
0805	2.00±0.25	1.25±0.25	1.45
0505	1.40 <sup>+0.38</sup> <sub>-0.25</sub>	1.40±0.38	1.45
1111	2.79 <sup>+0.51</sup> <sub>-0.25</sub>	2.79±0.38	2.59
2525	5.84 <sup>+0.51</sup> <sub>-0.25</sub>	6.35±0.38	3.68
3838	9.65 <sup>+0.38</sup> <sub>-0.25</sub>	8.89±0.25	4.50

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## High-Q RF Capacitor-SMD

### Capacitance Range

#### 0603 Capacitance Table

Capacitance (pF)	Accuracy	Max. DC working voltage (V)	Capacitance (pF)	Accuracy	Max. DC working voltage (V)	Capacitance (pF)	Accuracy	Max. DC working voltage (V)	Capacitance (pF)	Accuracy	Max. DC working voltage (V)
0.1	±0.10pF, ±0.25pF	250	1.7	±0.10pF, ±0.25pF, ±0.50pF	250	6.2	±0.10pF, ±0.25pF, ±0.50pF	250	30	±1.0%, ±2.0%, ±5.0%, ±10%, ±20%	250
0.2			1.8			6.8			33		
0.3			1.9			7.5			36		
0.4			2.0			8.2			39		
0.5	2.1		9.1			43					
0.6	2.2		10			47					
0.7	2.4		11			51					
0.8	2.7		12			56					
0.9	3.0		13			62					
1.0	3.3		15			68					
1.1	3.6		16			75					
1.2	3.9		18			82					
1.3	4.3		20			91					
1.4	4.7		22			100					
1.5	5.1		24			120					
1.6	5.6		27								

#### 0805 Capacitance Table

Capacitance (pF)	Accuracy	Max. DC working voltage (V)	Capacitance (pF)	Accuracy	Max. DC working voltage (V)	Capacitance (pF)	Accuracy	Max. DC working voltage (V)	Capacitance (pF)	Accuracy	Max. DC working voltage (V)
0.2	±0.10pF, ±0.25pF	250	1.9	±0.10pF, ±0.25pF, ±0.50pF	250	9.1	±0.10pF, ±0.25pF	250	51	±1.0%, ±2.0%, ±5.0%, ±10%, ±20%	250
0.3			2.0			10			56		
0.4			2.1			11			62		
0.5			2.2			12			68		
0.6	2.4		13			75					
0.7	2.7		15			82					
0.8	3.0		16			91					
0.9	3.3		18			100					
1.0	3.6		20			110					
1.1	3.9		22			120					
1.2	4.3		24			130					
1.3	4.7		27			150					
1.4	5.1		30			160					
1.5	5.6		33			180					
1.6	6.2		36			200					
1.7	6.8		39			220					
1.8	7.5		43			240					
	8.2		47								

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## High-Q RF Capacitor-SMD

### Capacitance Range

#### 0505 Capacitance Table

Capacitance (pF)	Accuracy	Max. DC working voltage (V)	Capacitance (pF)	Accuracy	Max. DC working voltage (V)	Capacitance (pF)	Accuracy	Max. DC working voltage (V)	Capacitance (pF)	Accuracy	Max. DC working voltage (V)
0.2	±0.10pF, ±0.25pF	250	1.9	±0.10pF, ±0.25pF, ±0.50pF	250	9.1	±0.10pF, ±0.25pF	250	51	±1.0%, ±2.0%, ±5.0%, ±10%, ±20%	250
0.3			2.0			10			56		
0.4			2.1			11			62		
0.5	2.2		12			68					
0.6	2.4		13			75					
0.7	2.7		15			82					
0.8	3.0		16			91					
0.9	3.3		18			100					
1.0	3.6		20			110					
1.1	3.9		22			120					
1.2	4.3		24			130					
1.3	4.7		27			150					
1.4	5.1		30			160					
1.5	5.6		33			180					
1.6	6.2		36			200					
1.7	6.8		39			220					
1.8	7.5		43								
	8.2		47								

#### 1111 Capacitance Table

Capacitance (pF)	Accuracy	Max. DC working voltage (V)	Capacitance (pF)	Accuracy	Max. DC working voltage (V)	Capacitance (pF)	Accuracy	Max. DC working voltage (V)	Capacitance (pF)	Accuracy	Max. DC working voltage (V)
0.2	±0.10pF, ±0.25pF	1500	2.4	±0.10pF, ±0.25pF, ±0.50pF	1500	20	±1.0%, ±2.0%, ±5.0%, ±10%, ±20%	1500	150	±1.0%, ±2.0%, ±5.0%, ±10%, ±20%	500
0.3			2.7			22			160		
0.4			3.0			24			180		
0.5	3.3		27			200					
0.6	3.6		30			220					
0.7	3.9		33			240					
0.8	4.3		36			270					
0.9	4.7		39			300					
1.0	5.1		43			330					
1.1	5.6		47			360					
1.2	6.2		51			390					
1.3	6.8		56			430					
1.4	7.5		62			470					
1.5	8.2		68			510					
1.6	9.1		75			560					
1.7	10		82			620					
1.8	11		91			680					
1.9	12		100			750					
2.0	13		110			820					
2.1	15		120			910					
2.2	16		130			1000					
	18										

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## High-Q RF Capacitor-SMD

### Capacitance Range

#### 2525 Capacitance Table

Capacitance (pF)	Accuracy	Max. DC working voltage (V)	Capacitance (pF)	Accuracy	Max. DC working voltage (V)	Capacitance (pF)	Accuracy	Max. DC working voltage (V)	Capacitance (pF)	Accuracy	Max. DC working voltage (V)
1.0	±0.10pF, ±0.25pF	3600	5.1	±0.10pF, ±0.25pF, ±0.50pF	3600	36	±1.0%, ±2.0%, ±5.0%, ±10%, ±20%	3600	240	±1.0%, ±2.0%, ±5.0%, ±10%, ±20%	2000
1.1			5.6			39			270		
1.2			6.2			43			300		
1.3			6.8			47			330		
1.4	7.5		51	360							
1.5	8.2		56	390							
1.6	±0.10pF, ±0.25pF, ±0.50pF		9.1	±1.0%, ±2.0%, ±5.0%, ±10%, ±20%		62			2000		430
1.7			10			68					470
1.8			11			75					510
1.9			12			82					560
2.0			13			91					620
2.1			15			100					680
2.2		16	110		750						
2.4		18	120		820						
2.7		20	130		910						
3.0		22	150		1000						
3.3	24	160	1100	500							
3.6	27	180	1200								
3.9	30	200	1500								
4.3	33	220	1800								
4.7											

#### 3838 Capacitance Table

Capacitance (pF)	Accuracy	Max. DC working voltage (V)	Capacitance (pF)	Accuracy	Max. DC working voltage (V)	Capacitance (pF)	Accuracy	Max. DC working voltage (V)	Capacitance (pF)	Accuracy	Max. DC working voltage (V)				
1.0	±0.10pF, ±0.25pF	7200	8.2	±0.10pF, ±0.25pF, ±0.50pF	7200	91	±1.0%, ±2.0%, ±5.0%, ±10%, ±20%	7200	1100	±1.0%, ±2.0%, ±5.0%, ±10%, ±20%	1000				
1.1			9.1			100			1200						
1.2			10			110			1500						
1.3			11			120			1800						
1.4	±0.10pF, ±0.25pF, ±0.50pF		12	±1.0%, ±2.0%, ±5.0%, ±10%, ±20%		130			3600		2000	2000	2200	±2.0%, ±5.0%, ±10%, ±20%	500
1.5			13			150					2400				
1.6			15			160					2700				
1.7			16			180					3000				
1.8			18			200					3300				
1.9			20			220					3600				
2.0			22			240					3900				
2.1			24			270					4300				
2.2		27	300		4700										
2.4		30	330		5100										
2.7	33	360	5600	250											
3.0	36	390	6200												
3.3	39	430	6800												
3.6	43	470													
3.9	47	510													
4.3	51	560													
4.7	56	620													
5.1	62	680													
5.6	68	750													
6.2	75	820													
6.8	82	910													
7.5		1000													

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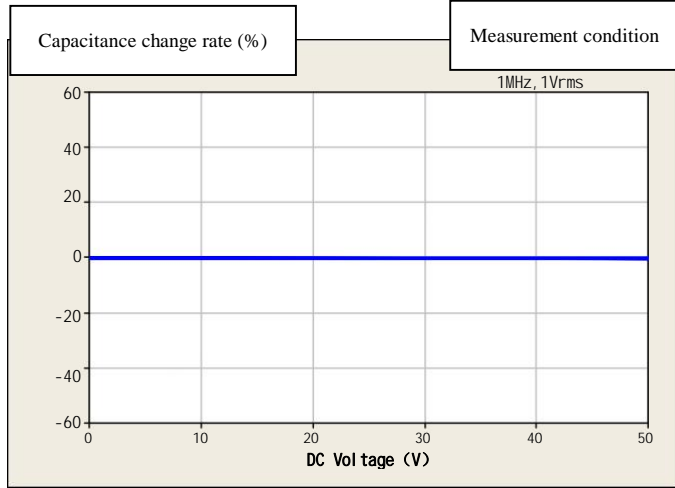
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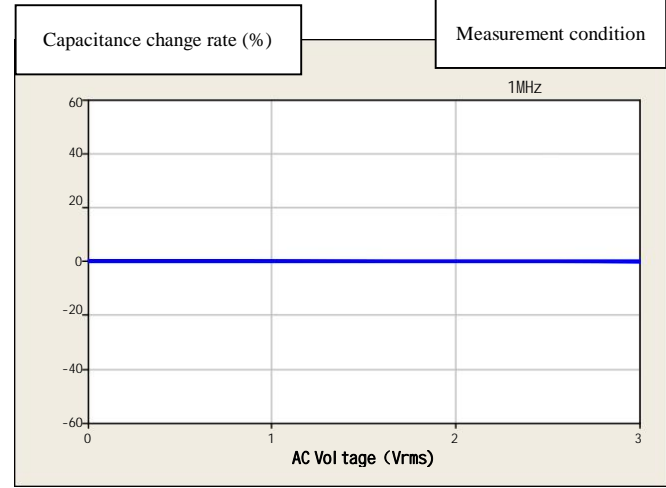
## High-Q RF Capacitor-SMD

### Characteristic Curve

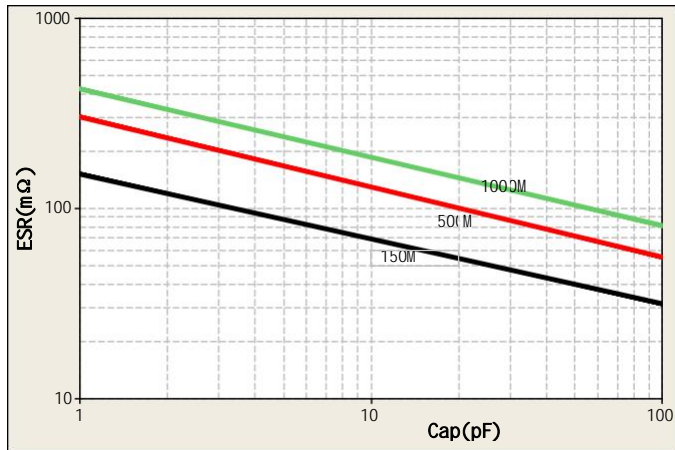
DC Voltage Characteristic



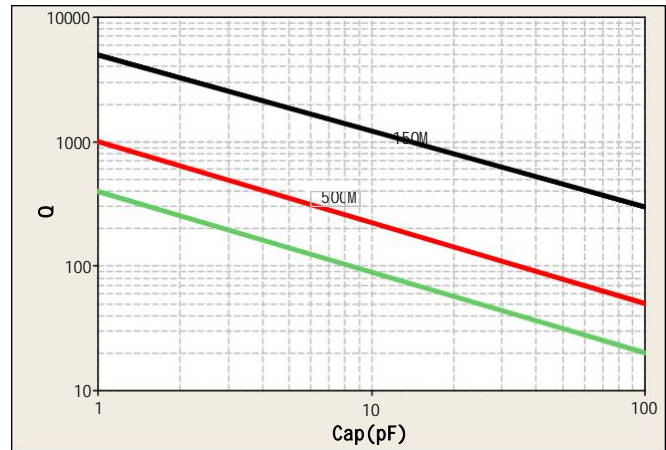
AC voltage characteristic



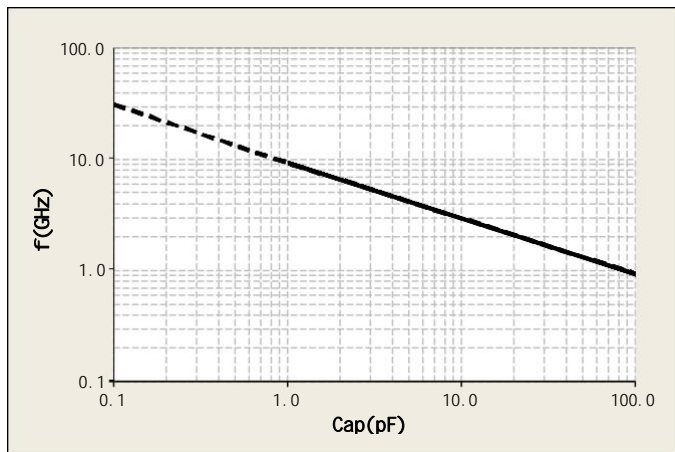
Relation between ESR and capacitance value



Relation between Q value and capacitance value



Relation between series resonance and capacitance



Specifications are subject to change without notice.

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