

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

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

a. Size:

0505, 0603, 0805, 1111, 2525, 3838

b. Dielectric: $0 \pm 30 \text{ppm}/^\circ\text{C}$

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

d. Tolerance:

A= $\pm 0.05 \text{pF}$, B= $\pm 0.1 \text{pF}$, C= $\pm 0.25 \text{pF}$, D= $\pm 0.5 \text{pF}$, E= $\pm 1 \text{pF}$, F= $\pm 1\%$

G= $\pm 2\%$, J= $\pm 5\%$, K= $\pm 10\%$, M= $\pm 20\%$, 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

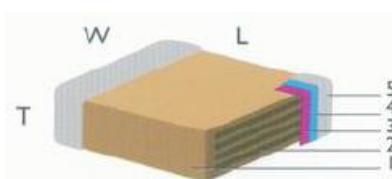
Main Performance indices

Temperature Coefficient	COG: $0 \pm 30 \text{ppm}/^\circ\text{C}$
Capacitance Drift	No more than $\pm 0.2\%$ or $\pm 0.05 \text{pF}$, whichever is larger
Quality Factor (Q value)	Over 2000 at 1MHz/1KHz
Insulation Resistance	At 20°C C: $\geq 10000 \text{M}\Omega$
Working Temperature	$-55^\circ\text{C} \sim 125^\circ\text{C}$

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 $\begin{matrix} +0.38 \\ -0.25 \end{matrix}$	1.40 ± 0.38	1.45
1111	2.79 $\begin{matrix} +0.51 \\ -0.25 \end{matrix}$	2.79 ± 0.38	2.59
2525	5.84 $\begin{matrix} +0.51 \\ -0.25 \end{matrix}$	6.35 ± 0.38	3.68
3838	9.65 $\begin{matrix} +0.38 \\ -0.25 \end{matrix}$	8.89 ± 0.25	4.50

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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					

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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	±0.10pF, ±0.25pF, ±0.50pF		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	±5.0%, ±10%		150		
1.8			7.5			43			100		
						8.2	47		220		

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			1000			560		
1.7	10		82						620		
1.8	11		91						680		
1.9	12		100			500			750		
2.0	13		110						820		
2.1	15		120						910		
2.2	16		130			1000			100		

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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	9.1		62	430							
1.7	10		68	470							
1.8	11		75	510		1000					
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	500							
3.0	22	150	1000								
3.3	24	160	1100								
3.6	27	180	1200								
3.9	30	200	1500								
4.3	33	220	1800								

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	12		130	2000		500					
1.5	13		150	2200							
1.6	15		160	2400							
1.7	16		180	2700							
1.8	18		200	3000							
1.9	20		220	3300							
2.0	22		240	3600		250					
2.1	24		270	3900							
2.2	27	300	4300								
2.4	30	330	4700								
2.7	33	360	5100								
3.0	36	390	5600								
3.3	39	430	6200	1500							
3.6	43	470	6800								
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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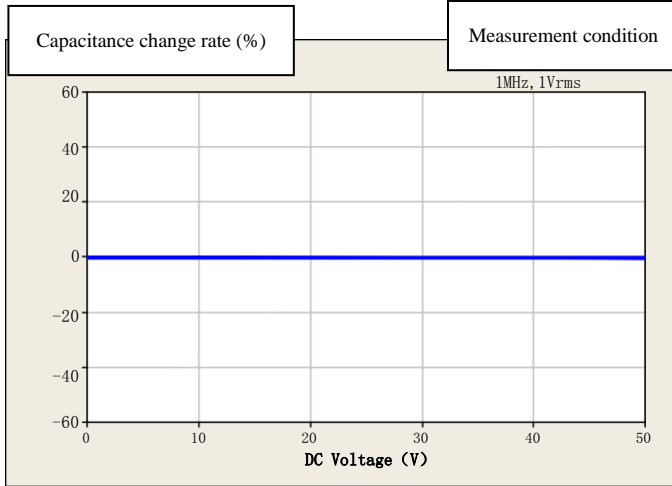
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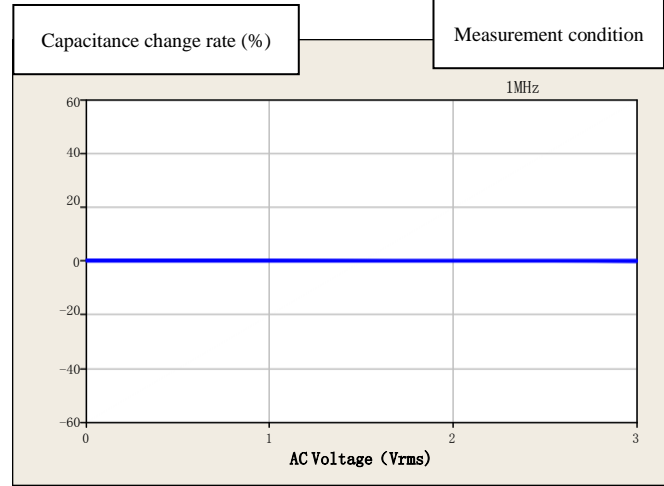
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Characteristic Curve

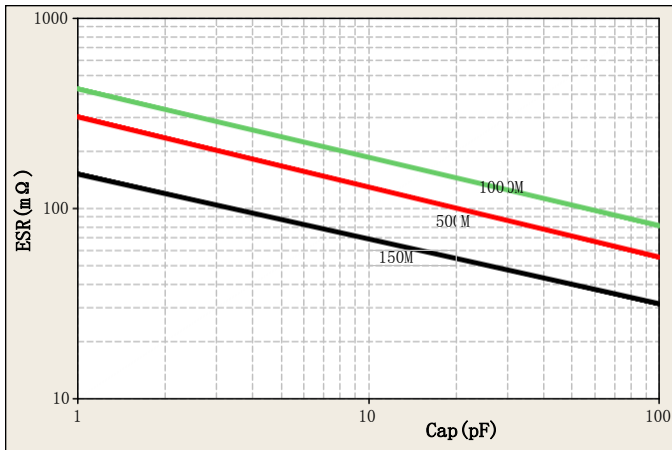
DC Voltage Characteristic



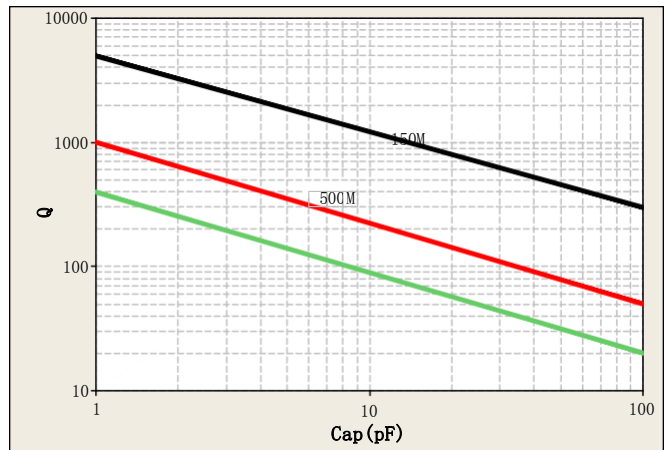
AC voltage characteristic



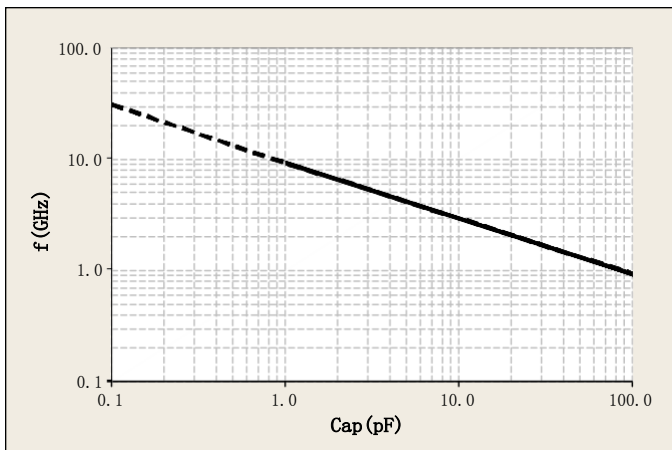
Relation between ESR and capacitance value



Relation between Q value and capacitance value



Relation between series resonance and capacitance



Specifications are subject to change without notice.

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