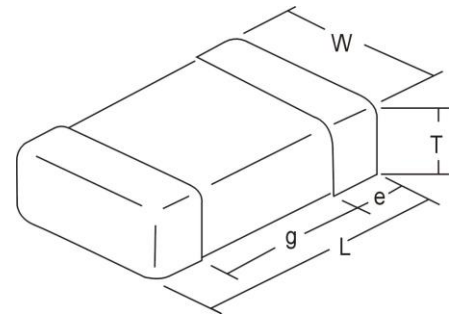


TS18



Size	Dimensions (mm)					T /Code
	L	W	e	g min	T /Code	
0201	0.60±0.03	0.30±0.03	0.1~0.2	0.2	0.30±0.3	Z
0201 ^{*2}	0.60-0.03/+0.1	0.30-0.03/+0.1	0.1~0.2	0.2	0.30-0.03/+0.1	Z
0402	1.00±0.10	0.50±0.10	0.15~0.3	0.4	0.50±0.10	A
0402 ^{*2}	1.00-0.05/+0.2	0.50-0.05/+0.2	0.15~0.3	0.4	0.50-0.05/+0.2	A
0603	1.60±0.10	0.80±0.10	0.2~0.6	0.5	0.80±0.10	C
0603 ^{*1}	1.60±0.20 ^{*1}	0.80±0.20 ^{*1}	0.2~0.6	0.5	0.80±0.20 ^{*1}	C
0603 ^{*3}	1.60-0/+0.3	0.80-0/+0.3	0.2~0.6	0.5	0.80-0/+0.3	C
0805	2.00±0.10	1.25±0.10	0.2~0.7	0.7	0.60±0.10	B
					0.85±0.10	D
					1.25±0.20	F
0805 ^{*1}	2.00±0.20 ^{*1}	1.25±0.20 ^{*1}	0.2~0.7	0.7	0.60±0.10	B
					0.85±0.20	D
					1.25±0.20	F
1206	3.20±0.20	1.60±0.20	0.3~0.8	1.6	0.85±0.10	D
					1.00±0.10	E
					1.25±0.20	F
					1.60±0.20	H
1206 ^{*1}	3.20±0.30 ^{*1}	1.60±0.30 ^{*1}	0.3~0.8	1.6	0.85±0.10	D
					1.00±0.10	E
					1.25±0.20	F
					1.60±0.30 ^{*1}	H
1210	3.20±0.30	2.5±0.20	0.3~0.8	1.6	0.85±0.10	D
					1.25±0.20	F
					1.60±0.20	H
					2.00±0.20	G
1210 ^{*1}	3.20±0.40 ^{*1}	2.5±0.30 ^{*1}	0.3~0.8	1.6	2.50±0.30	M
					0.85±0.10	D
					1.25±0.20	F
					1.60±0.30	H
					2.00±0.20	G
					2.50±0.30	M

*1 Stands for Capacitance Range: ≥1uF

*2 Stands for Capacitance Range: ≥100nF

*3 Stands for Capacitance Range: ≥10uF

Please do not hesitate to contact us if you have interested in the size of 2225, 2220, 1812 and 1808.

TS18

S P E C I F I C A T I O N S	
Dielectric & Values	NPO X7R X5R X7T X7S X6S Y5V consult product pages of catalog for cap ranges and voltage rating
Terminations	Tin / Nickel
Voltage	4, 6, 6.3, 10, 25, 50 VDC
Packing	tape and reel (0402, 0603, 0805, 1206, 1210)
Capacitance	0.1pF ~ 100uF
Tolerance	±0.1pF ~ +80-20%
Operating Temperature Range	NPO, X7R, X7T, X7S: -55 ~ +125°C ; X6S: -55 ~ +105°C ; X5R: -55 ~ +85°C ; Y5V: -30 ~ +85°C
Types of Capacitor and Dielectric Material	NPO: The capacitor of this kind dielectric material is considered as Class I capacitor, including general capacitor and high frequency NPO capacitor. The electrical properties of NPO capacitor are the most stable one and have little change with temperature, voltage and time. They are suited for applications where low losses and high stability are required, such as filters, oscillators, and timing circuits.
	X7R, X5R, X6S, X7T, X7S: material is a kind of material has high dielectric constant. The capacitor made of this kind material is considered as Class II capacitor whose capacitance is higher than that of class I . These capacitors are classified as having a semi stable temperature characteristic and used over a wide temperature range, such in these kinds of circuits, DC blocking, decoupling, bypassing, frequency discriminating etc.
	Y5V: The capacitor made of this kind of material is the highest dielectric constant of all ceramic capacitors. They are used over a moderate temperature range in application where high capacitance is required because of its unstable temperature coefficient, but where moderate losses and capacitance changes can be tolerated. Its capacitance and dissipation factors are sensible to measuring conditions, such as temperature and voltage, etc

TS18

General Product Capacitance Range:

Cp/VDC	0201																
	NPO		X7R		X5R				X6S				X7S		X7T		
	50	25	50	25	25	16	10	6.3	25	16	10	6.3	50	25	16	10	6.3
0R1	Z	Z															
0R2	Z	Z															
0R3	Z	Z															
0R4	Z	Z															
0R5	Z	Z															
0R6	Z	Z															
0R7	Z	Z															
0R8	Z	Z															
0R9	Z	Z															
1R0	Z	Z															
1R1	Z	Z															
1R2	Z	Z															
1R3	Z	Z															
1R5	Z	Z															
1R6	Z	Z															
1R8	Z	Z															
2R0	Z	Z															
2R2	Z	Z															
2R4	Z	Z															
2R7	Z	Z															
3R0	Z	Z															
3R3	Z	Z															
3R6	Z	Z															
3R9	Z	Z															
4R0	Z	Z															
4R3	Z	Z															
4R7	Z	Z															
5R0	Z	Z															
5R1	Z	Z															
5R6	Z	Z															
6R0	Z	Z															
6R2	Z	Z															
6R8	Z	Z															
7R0	Z	Z															
7R5	Z	Z															
8R0	Z	Z															
8R2	Z	Z															
9R0	Z	Z															
9R1	Z	Z															
100	Z	Z															
220	Z	Z															
330	Z	Z															
390	Z	Z															

TS18

General Product Capacitance Range:

	0201																
	NPO		X7R		X5R				X6S				X7S		X7T		
Cp/VDC	50	25	50	25	25	16	10	6.3	25	16	10	6.3	50	25	16	10	6.3
470	Z	Z															
680	Z	Z															
101	Z	Z															
181			Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
221			Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
241			Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
271			Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
331			Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
471			Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
681			Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
751			Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
102			Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
152			Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
222			Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
332			Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
472			Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
682			Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
103				Z	Z	Z	Z	Z	Z	Z	Z	Z		Z	Z	Z	Z
153				Z	Z	Z	Z	Z	Z	Z	Z	Z		Z	Z	Z	Z
223					Z	Z	Z	Z	Z	Z	Z	Z		Z	Z	Z	Z
473					Z	Z	Z	Z	Z	Z	Z	Z		Z	Z	Z	Z
863					Z	Z	Z	Z	Z	Z	Z	Z		Z	Z	Z	Z
104					Z	Z	Z	Z	Z	Z	Z	Z		Z	Z	Z	Z
224								Z	Z	Z	Z	Z		Z	Z	Z	Z
474								Z				Z					Z
105								Z									
	0402																
	NPO		X7R/X5R					X6S/X7S					X7T				
Cp/VDC	50	25	50	25	16	10	6	50	25	16	10	6	25	16	10	6.3	4
0R1	A	A															
0R2	A	A															
0R3	A	A															
0R4	A	A															
0R5	A	A															
0R6	A	A															
0R7	A	A															
0R8	A	A															
0R9	A	A															
1R0	A	A															
1R1	A	A															
1R2	A	A															
1R3	A	A															
1R5	A	A															

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General Product Capacitance Range:

Cp/VDC	0402																					
	NPO		X7R/X5R					X6S					X7S					X7T				
	50	25	50	25	16	10	6	50	25	16	10	6	50	25	16	10	6	25	16	10	6.3	4
1R6	A	A																				
1R8	A	A																				
2R0	A	A																				
2R2	A	A																				
2R4	A	A																				
2R7	A	A																				
3R0	A	A																				
3R3	A	A																				
3R6	A	A																				
3R9	A	A																				
4R0	A	A																				
4R3	A	A																				
4R7	A	A																				
5R0	A	A																				
5R1	A	A																				
5R6	A	A																				
6R0	A	A																				
6R2	A	A																				
6R8	A	A																				
7R0	A	A																				
7R5	A	A																				
8R0	A	A																				
8R2	A	A																				
9R0	A	A																				
9R1	A	A																				
100	A	A																				
120	A	A																				
150	A	A																				
180	A	A																				
200	A	A																				
220	A	A																				
270	A	A																				
300	A	A																				
330	A	A																				
390	A	A																				
470	A	A																				
560	A	A																				
680	A	A																				
820	A	A																				
101	A	A	A	A	A	A	A	A	A	A	A	A						A	A	A	A	A
121	A	A	A	A	A	A	A	A	A	A	A	A						A	A	A	A	A
151	A	A	A	A	A	A	A	A	A	A	A	A						A	A	A	A	A
181	A	A	A	A	A	A	A	A	A	A	A	A						A	A	A	A	A

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General Product Capacitance Range:

		0402																										
		NPO		X7R				X6S					X5R					X7S					X7T					
Cp/VDC		50	25	50	25	16	10	6	50	25	16	10	6	50	25	16	10	6	50	25	16	10	6	25	16	10	6.3	4
201		A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A						A	A	A	A	A
221		A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A						A	A	A	A	A
271		A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A						A	A	A	A	A
331		A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A						A	A	A	A	A
391		A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A						A	A	A	A	A
471		A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A						A	A	A	A	A
561		A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A						A	A	A	A	A
681		A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A						A	A	A	A	A
821		A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A						A	A	A	A	A
102		A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A						A	A	A	A	A
152				A	A	A	A	A	A	A	A	A	A	A	A	A	A	A						A	A	A	A	A
182				A	A	A	A	A	A	A	A	A	A	A	A	A	A	A						A	A	A	A	A
222				A	A	A	A	A	A	A	A	A	A	A	A	A	A	A						A	A	A	A	A
272				A	A	A	A	A	A	A	A	A	A	A	A	A	A	A						A	A	A	A	A
332				A	A	A	A	A	A	A	A	A	A	A	A	A	A	A						A	A	A	A	A
472				A	A	A	A	A	A	A	A	A	A	A	A	A	A	A						A	A	A	A	A
562				A	A	A	A	A	A	A	A	A	A	A	A	A	A	A						A	A	A	A	A
682				A	A	A	A	A	A	A	A	A	A	A	A	A	A	A						A	A	A	A	A
103				A	A	A	A	A	A	A	A	A	A	A	A	A	A	A						A	A	A	A	A
153				A	A	A	A	A	A	A	A	A	A	A	A	A	A	A						A	A	A	A	A
183				A	A	A	A	A	A	A	A	A	A	A	A	A	A	A						A	A	A	A	A
223				A	A	A	A	A	A	A	A	A	A	A	A	A	A	A						A	A	A	A	A
273				A	A	A	A	A	A	A	A	A	A	A	A	A	A	A						A	A	A	A	A
333				A	A	A	A	A	A	A	A	A	A	A	A	A	A	A						A	A	A	A	A
393				A	A	A	A	A	A	A	A	A	A	A	A	A	A	A						A	A	A	A	A
473				A	A	A	A	A	A	A	A	A	A	A	A	A	A	A						A	A	A	A	A
563				A	A	A	A	A	A	A	A	A	A	A	A	A	A	A						A	A	A	A	A
683				A	A	A	A	A	A	A	A	A	A	A	A	A	A	A						A	A	A	A	A
104				A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
154					A	A	A	A		A	A	A	A		A	A	A	A						A	A	A	A	A
184					A	A	A	A			A	A	A			A	A	A						A	A	A	A	A
224					A	A	A	A			A	A	A			A	A	A						A	A	A	A	A
274								A			A	A	A				A	A							A	A	A	A
334								A			A	A	A				A	A							A	A	A	A
474								A			A	A	A				A	A							A	A	A	A
684								A			A	A	A				A	A							A	A	A	A
105								A				A	A				A	A								A	A	A
225												A						A										

TS18

General Product Capacitance Range:

Cp/VDC	0603																						
	NPO		X7R					X6S/X7S					X5R					X7T					
	50	25	50	25	16	10	6	50	25	16	10	6.3	50	25	16	10	6.3	50	25	16	10	6.3	4
0R2	C	C																					
0R3	C	C																					
0R4	C	C																					
0R5	C	C																					
0R6	C	C																					
0R7	C	C																					
0R8	C	C																					
0R9	C	C																					
1R0	C	C																					
1R1	C	C																					
1R2	C	C																					
1R3	C	C																					
1R5	C	C																					
1R6	C	C																					
1R8	C	C																					
2R0	C	C																					
2R2	C	C																					
2R4	C	C																					
2R7	C	C																					
3R0	C	C																					
3R3	C	C																					
3R6	C	C																					
3R9	C	C																					
4R0	C	C																					
4R3	C	C																					
4R7	C	C																					
5R0	C	C																					
5R1	C	C																					
5R6	C	C																					
6R0	C	C																					
6R2	C	C																					
6R8	C	C																					
7R0	C	C																					
7R5	C	C																					
8R0	C	C																					
8R2	C	C																					
9R0	C	C																					
9R1	C	C																					
100	C	C																					
120	C	C																					
150	C	C																					
180	C	C																					
200	C	C																					
220	C	C																					
270	C	C																					
300	C	C																					
330	C	C																					

TS18

General Product Capacitance Range:

Cp/VDC	0603																						
	NPO		X7R					X6S/X5R					X7S					X7T					
	50	25	50	25	16	10	6	50	25	16	10	6.3	50	25	16	10	6.3	50	25	16	10	6.3	4
390	C	C																					
470	C	C																					
560	C	C																					
680	C	C																					
820	C	C																					
101	C	C																					
121	C	C																					
151	C	C																					
181	C	C																					
201	C	C																					
221	C	C	C	C	C	C	C	C	C	C	C	C						C	C	C	C	C	C
271	C	C	C	C	C	C	C	C	C	C	C	C						C	C	C	C	C	C
331	C	C	C	C	C	C	C	C	C	C	C	C						C	C	C	C	C	C
391	C	C	C	C	C	C	C	C	C	C	C	C						C	C	C	C	C	C
471	C	C	C	C	C	C	C	C	C	C	C	C						C	C	C	C	C	C
561	C	C	C	C	C	C	C	C	C	C	C	C						C	C	C	C	C	C
681	C	C	C	C	C	C	C	C	C	C	C	C						C	C	C	C	C	C
821	C	C	C	C	C	C	C	C	C	C	C	C						C	C	C	C	C	C
102	C	C	C	C	C	C	C	C	C	C	C	C						C	C	C	C	C	C
152	C	C	C	C	C	C	C	C	C	C	C	C						C	C	C	C	C	C
182	C	C	C	C	C	C	C	C	C	C	C	C						C	C	C	C	C	C
222	C	C	C	C	C	C	C	C	C	C	C	C						C	C	C	C	C	C
272	C	C	C	C	C	C	C	C	C	C	C	C						C	C	C	C	C	C
332	C	C	C	C	C	C	C	C	C	C	C	C						C	C	C	C	C	C
472	C	C	C	C	C	C	C	C	C	C	C	C						C	C	C	C	C	C
562		C	C	C	C	C	C	C	C	C	C	C						C	C	C	C	C	C
682		C	C	C	C	C	C	C	C	C	C	C						C	C	C	C	C	C
103		C	C	C	C	C	C	C	C	C	C	C						C	C	C	C	C	C
153			C	C	C	C	C	C	C	C	C	C						C	C	C	C	C	C
183			C	C	C	C	C	C	C	C	C	C						C	C	C	C	C	C
223			C	C	C	C	C	C	C	C	C	C						C	C	C	C	C	C
273			C	C	C	C	C	C	C	C	C	C						C	C	C	C	C	C
333			C	C	C	C	C	C	C	C	C	C						C	C	C	C	C	C
393			C	C	C	C	C	C	C	C	C	C						C	C	C	C	C	C
473			C	C	C	C	C	C	C	C	C	C						C	C	C	C	C	C
563			C	C	C	C	C	C	C	C	C	C						C	C	C	C	C	C

TS18

General Product Capacitance Range:

0603																												
Cp/VDC	NPO		X7R						X6S					X5R					X7S					X7T				
	50	25	50	25	16	10	6	50	25	16	10	6.3	50	25	16	10	6.3	50	25	16	10	6.3	50	25	16	10	6.3	4
683			C	C	C	C	C	C	C	C	C	C	C	C	C	C	C						C	C	C	C	C	C
104			C	C	C	C	C	C	C	C	C	C	C	C	C	C	C						C	C	C	C	C	C
154			C	C	C	C	C	C	C	C	C	C	C	C	C	C	C						C	C	C	C	C	C
184			C	C	C	C	C	C	C	C	C	C	C	C	C	C	C						C	C	C	C	C	C
224			C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
274			C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
334			C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
474			C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
684			C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
105			C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
225						C	C		C	C	C	C		C	C	C	C				C	C			C	C	C	C
475						C			C	C	C	C		C	C	C	C				C				C	C	C	C
106										C	C	C			C	C	C				C				C	C	C	C
226																C												C
0805																												
Cp/VDC	NPO			X7R						X6S					X5R					X7S					X7T			
	50	25	16	50	25	16	10	6.3	50	25	16	10	6.3	50	25	16	10	6.3	50	25	16	10	6.3	50	25	16	10	6.3
0R2	B	B	B																									
0R3	B	B	B																									
0R4	B	B	B																									
0R5	B	B	B																									
0R6	B	B	B																									
0R7	B	B	B																									
0R8	B	B	B																									
0R9	B	B	B																									
1R0	B	B	B																									
1R1	B	B	B																									
1R2	B	B	B																									
1R3	B	B	B																									
1R5	B	B	B																									
1R6	B	B	B																									
1R8	B	B	B																									
2R0	B	B	B																									
2R2	B	B	B																									
2R4	B	B	B																									
2R7	B	B	B																									

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General Product Capacitance Range:

Cp/VDC	0805																	
	NPO			X7R/X5R					X6S/X7S					X7T				
	50	25	16	50	25	16	10	6.3	50	25	16	10	6.3	25	16	10	6.3	4
3R0	B	B	B															
3R3	B	B	B															
3R6	B	B	B															
3R9	B	B	B															
4R0	B	B	B															
4R3	B	B	B															
4R7	B	B	B															
5R0	B	B	B															
5R1	B	B	B															
5R6	B	B	B															
6R0	B	B	B															
6R2	B	B	B															
6R8	B	B	B															
7R0	B	B	B															
7R5	B	B	B															
8R0	B	B	B															
8R2	B	B	B															
9R0	B	B	B															
9R1	B	B	B															
100	B	B	B															
120	B	B	B															
150	B	B	B															
180	B	B	B															
200	B	B	B															
220	B	B	B															
270	B	B	B															
300	B	B	B															
330	B	B	B															
390	B	B	B															
470	B	B	B															
560	B	B	B															
680	B	B	B															
820	B	B	B															
101	B	B	B															
121	B	B	B															
151	B	B	B															

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General Product Capacitance Range:

Cp/VDC	0805																						
	NPO			X7R/X5R					X6S					X7S					X7T				
	50	25	16	50	25	16	10	6.3	50	25	16	10	6.3	50	25	16	10	6.3	25	16	10	6.3	4
181	B	B	B																				
201	B	B	B																				
221	B	B	B	D	D	D	D	D	D	D	D	D	D						D	D	D	D	D
271	B	B	B	D	D	D	D	D	D	D	D	D	D						D	D	D	D	D
331	B	B	B	B/D	B/D	B/D	B/D	B/D	B/D	B/D	B/D	B/D	B/D						B/D	B/D	B/D	B/D	B/D
391	B	B	B	B/D	B/D	B/D	B/D	B/D	B/D	B/D	B/D	B/D	B/D						B/D	B/D	B/D	B/D	B/D
471	B	B	B	B/D	B/D	B/D	B/D	B/D	B/D	B/D	B/D	B/D	B/D						B/D	B/D	B/D	B/D	B/D
561	B	B	B	B/D	B/D	B/D	B/D	B/D	B/D	B/D	B/D	B/D	B/D						B/D	B/D	B/D	B/D	B/D
681	B	B	B	B/D	B/D	B/D	B/D	B/D	B/D	B/D	B/D	B/D	B/D						B/D	B/D	B/D	B/D	B/D
821	B	B	B	B/D	B/D	B/D	B/D	B/D	B/D	B/D	B/D	B/D	B/D						B/D	B/D	B/D	B/D	B/D
102	B	B	B	B/D	B/D	B/D	B/D	B/D	B/D	B/D	B/D	B/D	B/D						B/D	B/D	B/D	B/D	B/D
152	B	B	B	D	D	D	D	D	D	D	D	D	D						D	D	D	D	D
182	B	B	B	D	D	D	D	D	D	D	D	D	D						D	D	D	D	D
222	B	B	B	D	D	D	D	D	D	D	D	D	D						D	D	D	D	D
272	B	B	B	D	D	D	D	D	D	D	D	D	D						D	D	D	D	D
332	D	D	D	D	D	D	D	D	D	D	D	D	D						D	D	D	D	D
472	D	D	D	D	D	D	D	D	D	D	D	D	D						D	D	D	D	D
562	D	D	D	D	D	D	D	D	D	D	D	D	D						D	D	D	D	D
682	D	D	D	D	D	D	D	D	D	D	D	D	D						D	D	D	D	D
103	D	D	D	D	D	D	D	D	D	D	D	D	D						D	D	D	D	D
153	D	D	D	D	D	D	D	D	D	D	D	D	D						D	D	D	D	D
183	D	D	D	D	D	D	D	D	D	D	D	D	D						D	D	D	D	D
223	D	D	D	D	D	D	D	D	D	D	D	D	D						D	D	D	D	D
273	D	D	D	D	D	D	D	D	D	D	D	D	D						D	D	D	D	D
333	D	D	D	D	D	D	D	D	D	D	D	D	D						D	D	D	D	D
393	D	D	D	D	D	D	D	D	D	D	D	D	D						D	D	D	D	D
473	D	D	D	D	D	D	D	D	D	D	D	D	D						D	D	D	D	D
563	D	D	D	D	D	D	D	D	D	D	D	D	D						D	D	D	D	D
683	D	D	D	D	D	D	D	D	D	D	D	D	D						D	D	D	D	D
104	D	D	D	D	D	D	D	D	D	D	D	D	D						D	D	D	D	D
154	D	D	D	D	D	D	D	D	D	D	D	D	D						D	D	D	D	D
184	D	D	D	D	D	D	D	D	D	D	D	D	D						D	D	D	D	D
224	D	D	D/F	D/F	D	D	D	D	D/F	D	F	D	D	D/F	D	D	D	D	D/F	D	D	D	D
274	D	D/F	D	D/F	D	D	D	D	D/F	D	F	D	D	D/F	D	D	D	D	D/F	D	D	D	D
334	D	D/F	D	D/F	D	D	D	D	D/F	D	F	D	D	D/F	D	D	D	D	D/F	D	D	D	D
474	D	D/F	D/F	D/F	D/F	D/F	D	D	D/F	D/F	D/F	D	D	D/F	D/F	D/F	D	D	D/F	D/F	D/F	D	D

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General Product Capacitance Range:

0805																									
Cp/VDC	NPO			X7R/X7S					X6S					X5R					X7T						
	50	25	16	50	25	16	10	6.3	50	25	16	10	6.3	50	25	16	10	6.3	25	16	10	6.3	4		
684				D	D/F	D/F	D	D	D	D/F	D/F	D	D	D	D/F	D/F	D	D	D	D/F	D/F	D	D	D	D
105				F	D/F	D/F	D	D	F	D/F	D/F	D	D	F	D/F	D/F	D	D	F	D/F	D/F	D	D	D	D
225					F	F	F	F		F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F
475					F	F	F	F		F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F
106							F	F			F	F	F		F	F	F	F				F	F	F	F
226												F	F				F	F						F	F
1206																									
Cp/VDC	NPO			X7R/X7S					X6S					X5R					X7T						
	50	25	16	50	25	16	10	6.3	50	25	16	10	6.3	50	25	16	10	6.3	25	16	10	6.3	4		
0R5	D	D	D																						
1R0	D	D	D																						
1R1	D	D	D																						
1R2	D	D	D																						
1R3	D	D	D																						
1R5	D	D	D																						
1R6	D	D	D																						
1R8	D	D	D																						
2R0	D	D	D																						
2R2	D	D	D																						
2R4	D	D	D																						
2R7	D	D	D																						
3R0	D	D	D																						
3R3	D	D	D																						
3R6	D	D	D																						
3R9	D	D	D																						
4R0	D	D	D																						
4R3	D	D	D																						
4R7	D	D	D																						
5R0	D	D	D																						
5R1	D	D	D																						
5R6	D	D	D																						
6R0	D	D	D																						
6R2	D	D	D																						
6R8	D	D	D																						
7R0	D	D	D																						
7R5	D	D	D																						

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General Product Capacitance Range:

Cp/VDC	1206																		
	NPO			X7R/X5R/X6S					X7S					X7T					
	50	25	16	50	25	16	10	6.3	50	25	16	10	6.3	50	25	16	10	6.3	4
8R0	D	D	D																
8R2	D	D	D																
9R0	D	D	D																
9R1	D	D	D																
100	D	D	D																
120	D	D	D																
150	D	D	D																
180	D	D	D																
200	D	D	D																
220	D	D	D																
270	D	D	D																
300	D	D	D																
330	D	D	D																
390	D	D	D																
470	D	D	D																
560	D	D	D																
680	D	D	D																
820	D	D	D																
101	D	D	D																
121	D	D	D																
151	D	D	D																
181	D	D	D																
201	D	D	D																
101	D	D	D																
121	D	D	D																
151	D	D	D																
181	D	D	D																
221	D	D	D	D	D	D	D	D						D	D	D	D	D	D
271	D	D	D	D	D	D	D	D						D	D	D	D	D	D
331	D	D	D	D	D	D	D	D						D	D	D	D	D	D
391	D	D	D	D	D	D	D	D						D	D	D	D	D	D
471	D	D	D	D	D	D	D	D						D	D	D	D	D	D
561	D	D	D	D	D	D	D	D						D	D	D	D	D	D
681	D	D	D	D	D	D	D	D						D	D	D	D	D	D
821	D	D	D	D	D	D	D	D						D	D	D	D	D	D
102	D	D	D	D	D	D	D	D						D	D	D	D	D	D

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General Product Capacitance Range:

1206																													
Cp/VDC	NPO			X7R					X6S					X5R					X7S					X7T					
	50	25	16	50	25	16	10	6.3	50	25	16	10	6.3	50	25	16	10	6.3	50	25	16	10	6.3	50	25	16	10	6.3	4
152	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D						D	D	D	D	D	D
182	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D						D	D	D	D	D	D
222	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D						D	D	D	D	D	D
272	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D						D	D	D	D	D	D
332	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D						D	D	D	D	D	D
472	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D						D	D	D	D	D	D
562	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D						D	D	D	D	D	D
682	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D						D	D	D	D	D	D
103	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D						D	D	D	D	D	D
153				D	D	D	D	D	D	D	D	D	D	D	D	D	D	D						D	D	D	D	D	D
183				D	D	D	D	D	D	D	D	D	D	D	D	D	D	D						D	D	D	D	D	D
223				D	D	D	D	D	D	D	D	D	D	D	D	D	D	D						D	D	D	D	D	D
273				D	D	D	D	D	D	D	D	D	D	D	D	D	D	D						D	D	D	D	D	D
333				D	D	D	D	D	D	D	D	D	D	D	D	D	D	D						D	D	D	D	D	D
393				D	D	D	D	D	D	D	D	D	D	D	D	D	D	D						D	D	D	D	D	D
473				D	D	D	D	D	D	D	D	D	D	D	D	D	D	D						D	D	D	D	D	D
563				D	D	D	D	D	D	D	D	D	D	D	D	D	D	D						D	D	D	D	D	D
683				D	D	D	D	D	D	D	D	D	D	D	D	D	D	D						D	D	D	D	D	D
104				D	D	D	D	D	D	D	D	D	D	D	D	D	D	D						D	D	D	D	D	D
154				D	D	D	D	D	D	D	D	D	D	D	D	D	D	D						D	D	D	D	D	D
184				D	D	D	D	D	D	D	D	D	D	D	D	D	D	D						D	D	D	D	D	D
224				D	D	H	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
274				D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
334				D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
474				F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F
684				F/H	F	F	F	F	F/H	F	F	F	F	F/H	F	F	F	F	F/H	F	F	F	F	F/H	F/H	F	F	F	F
105				F/H	F	F	F	F	F/H	F	F	F	F	F/H	F	F	F	F	F/H	F	F	F	F	F/H	F/H	F	F	F	F
205				F/H	E	E	E	E	E	E	E	E	E	F/H	E	E	E	E	F/H	E	E	E	E	F/H	E	E	E	E	
225				H	F	F	F	F	H	F	F	F	F	H	F	F	F	F	H	F	F	F	F	H	F	F	F	F	F
475					H	H	H	H	H	H	H	H	H	H	H	H	H	H		H	H	H	H	H	H	H	H	H	H
106					H	H	H	H		H	H	H	H	H	H	H	H	H		H	H	H	H		H	H	H	H	H
226												H	H		H	H	H	H									H	H	H
476												H					H	H											H

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General Product Capacitance Range:

Cp/VDC	1210																						
	NPO	X7R/X7S					X6S					X5R					X7T						
	50	50	25	16	10	6.3	50	25	16	10	6.3	50	25	16	10	6.3	50	25	16	10	6.3	4	
101	D																						
121	D																						
151	D																						
181	D																						
201	D																						
221	D																						
271	D																						
331	D																						
391	D																						
471	D																						
561	D																						
681	D																						
821	D																						
102	D																						
152	D																						
182	D																						
222	D																						
272	D																						
332	D																						
472	D																						
474		G	G	G	G	G	G	G	G	G	G	G	G	G	G	G		G	G	G	G	G	G
684		H	H	H	H	H	H	H	H	H	H	H	H	H	H	H		H	H	H	H	H	H
105		H	H	H	H	H	H	H	H	H	H	H	H	H	H	H		H	H	H	H	H	H
225		H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	M	H	H	H	H	H	H
475			H/G	H	H	H	M	H/G	H	H	H		H/G	H	H	H	M	M	H/G	H	H	H	H
106			M	G	M	M	M	M	G	M	M		M	G	M	M	M	M	M	G	M	M	M
226				M	M	M		M	M	M	M			M	M	M		M	M	M	M	M	M
476					M	M				M	M				M	M						M	M
107											M					M							

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Specification and Test Condition:

1. Appearance

Dielectrics	Specification	Testing Condition
NPO/X7R/X5R/X7T/X6S/X7S	1/10L < L ≤ 1/8L, 1/10W < W ≤ 1/8W, 1/10T < T ≤ 1/8T (None is acceptable All judged unqualified)	Visual inspection.

2. Dimensions

Dielectrics	Specification	Testing Condition
NPO/X7R/X5R/X7T/X6S/X7S	Within the specified dimensions	Using calipers on micrometer

3. Capacitance

Dielectrics	Specification	Testing Condition
NPO	Within the specified tolerance A: ±0.05pF; B: ±0.1pF; C: ±0.25pF; D: ±0.5pF; J: ±5%	1.0±0.2Vrms, 1MHz±10% (C>1000 pF, 1.0±0.2Vrms, 1KHz±10%)
X7R/X5R/X7T/X6S/X7S	Within the specified tolerance J: ±5% ; K: ±10% ; M: ±20%	1.0±0.2Vrms, 1KHz±10% (Cp > 10uF, 0.5±0.1Vrms, 120±24Hz)

4. Dissipation Factor

Dielectrics	Specification				Testing Condition
NPO	Cp<30pF, Q≥400+20Cp; Cp≥30pF, Q≥1000				1.0±0.2Vrms, 1MHz±10% ,25°C (Cp>1000pF, 1.0±0.2Vrms, 1KHz±10%)
X7R/X5R/X7T/X6S/ X7S	0402	≤25V	C≤0.47uF	≤7.0%	1.0±0.2Vrms, 1KHz±10%, (Cp > 10uF, 0.5±0.1Vrms, 120±24Hz)
			C>0.47uF	≤10.0%	
	>25V	C≤0.1uF	≤7.0%		
		C>0.1uF	≤10.0%		
	0603	≤25V	C≤0.47uF	≤7.0%	
			C>0.47uF	≤10.0%	
		>25V	C≤0.1uF	≤5.0%	
			0.1uF<C≤0.22uF	≤7.0%	
	C>0.22uF	≤10.0%			
		0805	≤25V	C≤1uF	
	C>1uF		≤10.0%		
	>25V	C≤0.47uF	≤7.0%		
C>0.47uF		≤10.0%			
1206	≤25V	C<2.2uF	≤7.0%		
		2.2uF≤C<47uF	≤10.0%		
	>25V	C<1uF	≤7.0%		
		1uF≤C<47uF	≤10.0%		

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5. Insulation Resistance

Dielectrics	Specification	Testing Condition
NPO /X7R/ X5R/X7T/X6S/X7S	$U_R \leq 50V$, More than 10 GΩ or 100Ω·F/CR, whichever is smaller.	$U_R \leq 50V$ $U_{Test} = U_R$; Charge Time: 60±5 sec; Temperature: 25°C
NPO /X7R/X7T/X6S/ X7S	$U_R > 50V$, More than 4 GΩ or 100Ω·F/CR, whichever is smaller.	$U_R \leq 400V$ $U_{Test} = U_R$; $U_R > 400V$ $U_{Test} = 400V$; Charge Time: 60±5 sec; Temperature: 25°C
Test Temperature: 25°C ±3°C; Test Humidity: <70%RH.		

6. Dielectric Strength

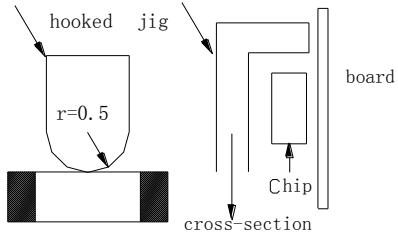
Dielectrics	Rated voltage range	Measuring Method
NPO	$U_R \leq 50V$	Force 300% Rated voltage for 5second. Max..current should not exceed 50mA.
X7R/X5R/X7T/X6S/X7S	$U_R \leq 50V$	Force 250% Rated voltage for 5second. Max..current should not exceed 50mA.
NPO /X7R/X7T/X7S	$100V \leq U_R < 500V$	Force 200% Rated voltage for 5second. Max..current should not exceed 50mA.
	$500V \leq U_R < 1000V$	Force 150% Rated voltage for 5second. Max..current should not exceed 50mA.
	$1000V \leq U_R < 2000V$	Force 150% Rated voltage for 5second. Max..current should not exceed 50mA.
	$U_R \geq 2000V$	Force 120% Rated voltage for 5second. Max..current should not exceed 50mA.

7. Temperature Coefficient of Capacitance

Dielectrics	Specification	Testing Condition																												
NPO	Temperature coefficient within ±30ppm/°C Cp drift within ±0.2% or ±0.05pF	Measure capacitance under follow table list																												
		<table border="1"> <thead> <tr> <th>STEP</th> <th>NPO, X7R, X7T</th> <th>X6S</th> <th>X5R</th> <th>X7S</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>25 ±2</td> <td>25 ±2</td> <td>25 ±2</td> <td>25 ±2</td> </tr> <tr> <td>2</td> <td>-55 ±3</td> <td>-55 ±3</td> <td>-55 ±3</td> <td>-55 ±3</td> </tr> <tr> <td>3</td> <td>25 ±2</td> <td>25 ±2</td> <td>25 ±2</td> <td>25 ±2</td> </tr> <tr> <td>4</td> <td>125 ±3</td> <td>105 ±3</td> <td>85 ±3</td> <td>125 ±3</td> </tr> <tr> <td>5</td> <td>25 ±2</td> <td>25 ±2</td> <td>25 ±2</td> <td>25 ±2</td> </tr> </tbody> </table>	STEP	NPO, X7R, X7T	X6S	X5R	X7S	1	25 ±2	25 ±2	25 ±2	25 ±2	2	-55 ±3	-55 ±3	-55 ±3	-55 ±3	3	25 ±2	25 ±2	25 ±2	25 ±2	4	125 ±3	105 ±3	85 ±3	125 ±3	5	25 ±2	25 ±2
STEP	NPO, X7R, X7T	X6S	X5R	X7S																										
1	25 ±2	25 ±2	25 ±2	25 ±2																										
2	-55 ±3	-55 ±3	-55 ±3	-55 ±3																										
3	25 ±2	25 ±2	25 ±2	25 ±2																										
4	125 ±3	105 ±3	85 ±3	125 ±3																										
5	25 ±2	25 ±2	25 ±2	25 ±2																										
X7R/X5R	Capacitance change within ±15%																													
X7T	Capacitance change within ±22%, -33%	1) NPO The capacitance drift is calculated by dividing the differences between the maximum and minimum measured values in the step 1, 3 and 5. The temperature coefficient is determined using the Capacitance measured in step 3 as a reference. 2) X7R, X5R, X7T, X6S and X7S																												
X6S/X7S	Capacitance change within ±22%	The ranges of capacitance change compared within the above 25°C value over the temperature ranges shall be within the specified ranges.																												

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8. Adhesion

Dielectrics	Specification	Testing Condition
NPO/X7R/X5R/ X7T/X6S/X7S	No removal of the terminations or other defect shall occur.	<p>The pressurizing force shall be 6N (=600g*f) and the duration of application shall be 10±1sec.</p> 

9. Solderability of Termination

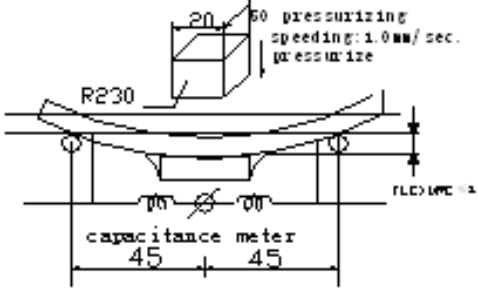
Dielectrics	Specification	Testing Condition
NPO/X7R/X5R/ X7T/X6S/X7S	95% min. coverage of both terminal electrodes and less than 5% have pin holes or rough spots.	<p>Solder temperature: 245±5°C Dipping time: 2±1 seconds. Completely soak both terminal electrodes in solder</p>

10. Resistance to leaching

Dielectrics	Specification	Testing Condition
NPO/X7R/X5R/ X7T/X6S/X7S	<p>95% min. coverage of both terminal electrodes and less than 5% have pin holes or rough spots. No remarkable visual damage.</p>	<p>Solder temperature: 270±5°C Preheated: 120°C~150°C/60sec Dipping time: 10±1 seconds. Completely soak both terminal electrodes in solder</p>

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11. Bending

Dielectrics	Specification	Testing Condition
NPO	No remarkable visual damage Cp change $\leq \pm 5\%$ or $\pm 0.5\text{pF}$, whichever is larger.	Solder the capacitor on testing substrate and put it on testing stand. The middle part of substrate shall successively be pressurized by pressuring rod at a rated of about 1.0mm/sec. Until the deflection become means of the 1.0mm.
X7R/X5R/X7T /X6S/X7S	No remarkable visual damage Cp change $\leq \pm 10\%$	

12. Resistance to Soldering Heat

Dielectrics	Specification	Testing Condition
NPO	No remarkable visual damage Cp change within $\pm 2.5\%$ or $\pm 0.25\text{pF}$, whichever is larger. DF meets initial standard value. IR meets initial standard value.	Soldering temperature: $270 \pm 5^\circ\text{C}$ Preheating: $120 \sim 150^\circ\text{C}$ 60sec. Dipping time: 10 ± 1 seconds. Measurement to be made after being kept at room temperature for 24 ± 2 (NPO) or 48 ± 4 (X7R, X5R, X7S, X7T, X6S) hours. Recovery for the following period under the standard condition after test.
X7R/X5R/X7T /X6S/X7S	No remarkable visual damage Cp change within $\pm 7.5\%$ DF meets initial standard value. IR meets initial standard value.	*Initial measurement for high dielectric constant type Perform a heat treatment at $140 \sim 150^\circ\text{C}$ for 1hr and let sit for 48 ± 4 hrs at room temperature. Perform the initial measurement.

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13. Temperature Cycle

Dielectrics	Specification	Testing Condition															
NPO	No remarkable visual damage Cp change within $\pm 2.5\%$ or $\pm 0.25\text{pF}$, whichever is larger.	To perform 5 cycles of the stated environment: <table border="1"> <thead> <tr> <th>Step</th> <th>Temperature</th> <th>Time</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Min. operating Temp. $+0/-3^{\circ}\text{C}$</td> <td>30min</td> </tr> <tr> <td>2</td> <td>25°C</td> <td>2~3 min</td> </tr> <tr> <td>3</td> <td>Max. operating Temp. $+3/-0^{\circ}\text{C}$</td> <td>30 min</td> </tr> <tr> <td>4</td> <td>25°C</td> <td>2~3 min</td> </tr> </tbody> </table>	Step	Temperature	Time	1	Min. operating Temp. $+0/-3^{\circ}\text{C}$	30min	2	25°C	2~3 min	3	Max. operating Temp. $+3/-0^{\circ}\text{C}$	30 min	4	25°C	2~3 min
Step	Temperature	Time															
1	Min. operating Temp. $+0/-3^{\circ}\text{C}$	30min															
2	25°C	2~3 min															
3	Max. operating Temp. $+3/-0^{\circ}\text{C}$	30 min															
4	25°C	2~3 min															
X7R/X5R/X7T /X6S/X7S	No remarkable visual damage Cp change within $\pm 7.5\%$	Measurement to be made after being kept at room temperature for $24 \pm 2\text{hrs}$ (NPO) or $48 \pm 4\text{hrs}$ (X7R, X5R, X7S, X7T, X6S) at room temperature, then measure. *Initial measurement for high dielectric constant type Perform a heat treatment at $140\sim 150^{\circ}\text{C}$ for 1hr and let sit for $48 \pm 4\text{hrs}$ at room temperature. Perform the initial measurement.															

14. Moisture Resistance, steady state

Dielectrics	Specification	Testing Condition
NPO	No remarkable visual damage Cp change within $\pm 5\%$ or $\pm 0.5\text{pF}$, whichever is larger. Cp < 10pF, Q $\geq 200 + 10\text{Cp}$; $10 \leq \text{Cp} < 30\text{pF}$, Q $\geq 275 + 2.5\text{Cp}$ Cp $\geq 30\text{pF}$, Q ≥ 350 R*C $\geq 1000\text{M}\Omega$ or $10\Omega \cdot \text{F}$, whichever is smaller	Test temperature: $40 \pm 2^{\circ}\text{C}$ Humidity: 90~95% RH Testing time: $500 \pm 12\text{hrs}$ Measurement to be made after being kept at room temperature for $24 \pm 2\text{hrs}$ (NPO) or $48 \pm 4\text{hrs}$ (X7R, X5R, X7S, X7T, X6S)
X7R/X5R/X7T /X6S/X7S	Cp change within $\pm 12.5\%$ DF: Not more than 2 times of initial value R*C $\geq 1000\text{M}\Omega$ or $10\Omega \cdot \text{F}$, whichever is smaller	*Initial measurement for high dielectric constant type Perform a heat treatment at $140\sim 150^{\circ}\text{C}$ for 1hr and let sit for $48 \pm 4\text{hrs}$ at room temperature. Perform the initial measurement.

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15. Damp heat with load

Dielectrics	Specification	Testing Condition
NPO	No remarkable visual damage Cp change $\leq \pm 7.5\%$ or $\pm 0.75\text{pF}$, whichever is larger. Cp < 30pF, Q $\geq 100 + 10/3 * \text{Cp}$ Cp $\geq 30\text{pF}$, Q ≥ 200 R*C $\geq 500\text{M}\Omega$ or $5\Omega \cdot \text{F}$, whichever is smaller	Test temperature: $40 \pm 2^\circ\text{C}$ Humidity: 90~95% RH Voltage: 100% of the rated voltage Testing time: 500 ± 12 hrs Measurement to be made after being kept at room temperature for 24 ± 2 hrs (NPO) or 48 ± 4 hrs (X7R, X5R, X7S, X7T, X6S)
X7R/X5R/X7T /X6S/X7S	No remarkable visual damage Cp change $\leq \pm 12.5\%$ DF: Not more than 2 times of initial value R*C $\geq 500\text{M}\Omega$ or $5\Omega \cdot \text{F}$, whichever is smaller	*Apply the rated DC voltage for 1 hour at $40 \pm 2^\circ\text{C}$. Remove and let sit for 48 ± 4 hrs at room temperature. Perform the initial measurement.

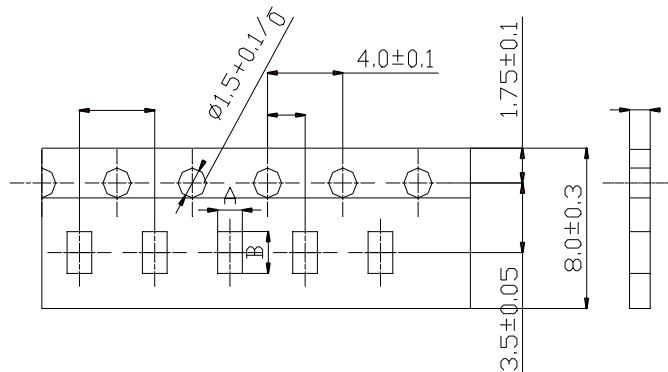
16. Life Test

Dielectrics	Specification	Testing Condition
NPO	No remarkable visual damage Cp change $\leq \pm 3\%$ or $\pm 0.3\text{pF}$, whichever is larger. Q ≥ 350 (Cp $\geq 30\text{pF}$) Q $\geq 275 + (2.5 * \text{Cp})$ ($10\text{pF} \leq \text{Cp} < 30\text{pF}$) Q $\geq 200 + 10 * \text{Cp}$ (Cp < 10pF) R*C $\geq 1000\text{M}\Omega$ or $50\Omega \cdot \text{F}$, whichever is smaller	Test temperature: Max. Operating Temp. $\pm 3^\circ\text{C}$ Voltage: U _R < 100V 150% of the rated voltage (*Remarks) Testing time: 1000 hrs
X7R/X5R/X7T /X6S/X7S	No remarkable visual damage Cp change $\leq \pm 12.5\%$ DF: Not more than 2 times of initial value R*C $\geq 1000\text{M}\Omega$ or $5\Omega \cdot \text{F}$, whichever is smaller	Measurement to be made after being kept at room temperature for 24 ± 2 hrs (NPO) or 48 ± 4 hrs (X7R, X5R, X7S, X7T, X6S) *Initial measurement for high dielectric constant type Apply 150% of the rated DC voltage for one hour at the maximum operating temperature $\pm 3^\circ\text{C}$. Remove and let sit for 48 ± 4 hrs at room temperature. Perform the initial measurement

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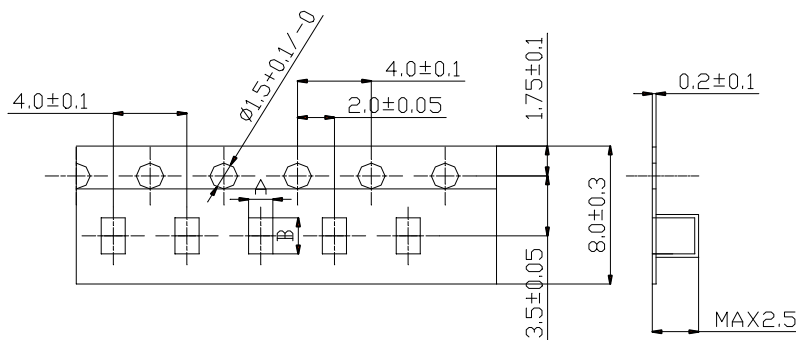
Packing

1. Dimensions of Packing Paper: (Unit: mm)



Type	A	B	C	D	T
0402	0.65±0.10	1.15±0.10	2.0±0.05	2.0±0.05	0.8max
0603	1.05±0.10	1.85±0.10	4.0±0.10	2.0±0.10	1.1max
0805	1.55±0.15	2.3±0.15	4.0±0.10	2.0±0.10	1.1max
1206	1.95±0.15	3.5±0.15	4.0±0.10	2.0±0.10	1.1max

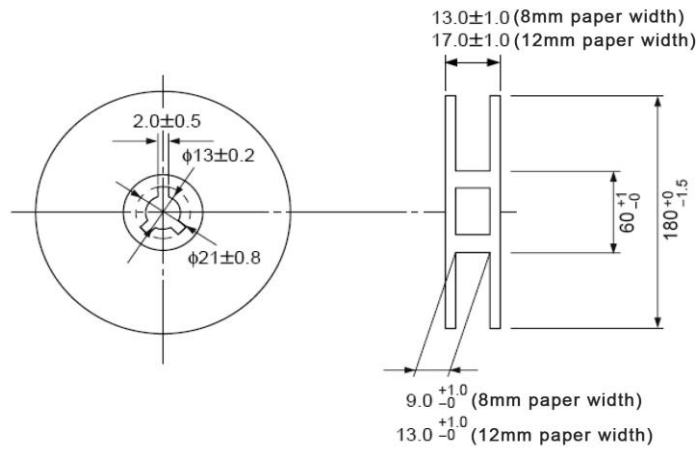
2. Dimensions of Embossed Packing



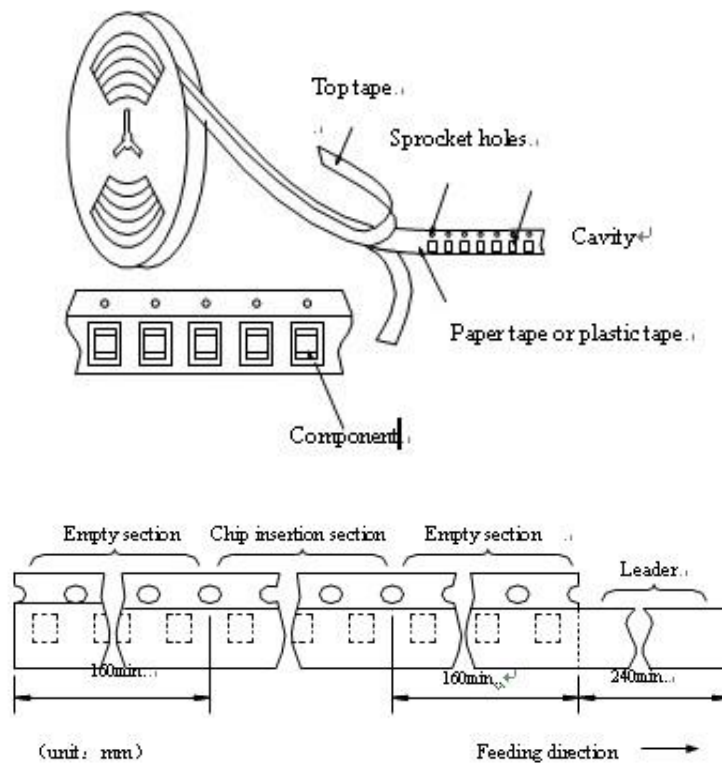
A : 1.45±0.20 B : 2.25±0.20 (0805)
 A : 1.95±0.20 B : 3.50±0.20 (1206)

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3. Dimensions of Reel:



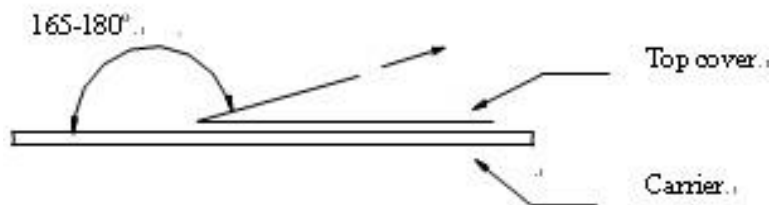
4. Taping Figure



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5. Taping Method

- ① Tapes for capacitors are wound clockwise. The sprocket holes are to the right as the tape is pulled toward the user.
- ② The top tape and base tape are not attached at the end of the tape for a minimum of 5 pitches.
- ③ Part of the leader and part of the empty tape shall be attached to the end of the tape as follows.
- ④ Missing capacitors number within 0.1% of the number per reel or 1pc, whichever is greater, and are not continuous.
- ⑤ The top tape and bottom tape shall not protrude beyond the edges of the tape and shall not cover sprocket holes.
- ⑥ Cumulative tolerance of sprocket holes, 10 pitches: $\pm 0.3\text{mm}$.
- ⑦ Peeling off force: 0.1 to 0.6N in the direction shown down.



Note: Specification are subject to change without notice. For more detail and update, please visit our website.