

Multilayer Ceramic Capacitors

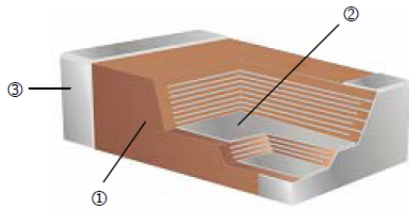
ND Series

■ Features

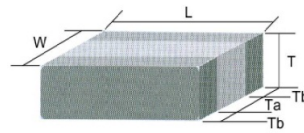
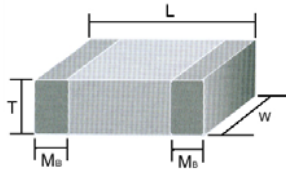
- Wide capacitance range, extremely compact size
- Low inductance of capacitor for high frequency application
- Excellent solderability and resistance to soldering heat, suitable for flow and reflow soldering
- Adaptable to high-speed surface mount assembly
- Conform to EIAJ-RC3402, and also compatible with EIA-RS198 and IEC PUB.384-10



■ Construction



1	Ceramic Material	3	Termination:
2	Inner Electrodes		NPO: Ag/Ni/Sn dielectric X7R, Y5V, X5R: Cu/Ni/Sn dielectric



■ Dimensions

ND Type

Unit:
mm

Type	Size (Inch)	L	W	T/Symbol		MB	Packaging (7" Reel)	
							Paper Tape	Plastic Tape
01	0201	0.6±0.03	0.3±0.03	0.3±0.03	L	0.15±0.05	15K	-
02	0402	1.00±0.05	0.50±0.05	0.50±0.05	N	0.25 +0.05/-0.10	10K	-
03	0603	1.60±0.10	0.80±0.10	0.80±0.07	S	0.40±0.15	4K	-
		1.60 +0.15/-0.10	0.80 +0.15/-0.10	0.80 +0.05/-0.10	X		4K	-
05	0805	2.00±0.15	1.25±0.10	0.60±0.10	A	0.50±0.20	4K	-
				0.80±0.10	B		4K	-
		1.25±0.10	D	-	3K			
		0.85±0.10	T	4K	-			
06	1206	3.20±0.15	1.60±0.15	1.25±0.20	I	0.60±0.20	-	3K
				0.80±0.10	B		4K	-
		0.95±0.10	C	-	3K			
		1.25±0.10	D	-	3K			
06	1206	3.20±0.20	1.60±0.20	1.15±0.15	J	0.75±0.25	-	3K
				1.60±0.20	G		-	2K
		3.20+0.3/-0.1	1.60+0.3/-0.1	1.60+0.3/-0.1	P		-	2K
10	1210	3.20±0.30	2.50±0.20	0.95±0.10	C	0.75±0.25	-	3K
				1.25±0.10	D		-	3K
		1.60±0.20	G	-	2K			
		2.00±0.20	K	-	1K			
08	1808	4.50±0.40	2.03±0.25	2.50±0.30	M	0.75±0.25	-	1K
				1.25±0.10	D		-	2K
				2.00±0.20	K		-	1K
12	1812	4.50±0.40	3.20±0.30	1.25±0.10	D	0.75±0.25	-	1K
				2.00±0.20	K		-	1K
			3.20±0.40	2.50±0.30	M		-	0.5K

Low Inductance Capacitors for NDMJ Type

Unit:mm

Type	Size (Inch)	L	W	T/Symbol		Ta min.	Tb min.	Packaging (7" Reel)	
								Paper Tape	Plastic Tape
NDMJ	0612	3.20±0.15	1.60±0.15	0.80±0.10	B	0.5	0.13	4K	-

• Design and specifications are each subject to change without notice.

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Part Numbering

ND	03	J	T	N	250	3R9
Product Type	Dimensions (L x W)	Capacitance Tolerance	Packaging	Dielectric	Voltage (VDCW)	Capacitance
ND: General; Ultra-small Middle and High Voltage	01: 0201 02: 0402 03: 0603 05: 0805 06: 1206 10: 1210 08: 1808 12: 1812 43: 0612	B: $\pm 0.1\mu\text{F}$ (Cap $\leq 5\mu\text{F}$) C: $\pm 0.25\mu\text{F}$ (Cap $\leq 5\mu\text{F}$) D: $\pm 0.5\mu\text{F}$ (5 μF < Cap < 10 μF) F: $\pm 1\%$ G: $\pm 2\%$ J: $\pm 5\%$ K: $\pm 10\%$ M: $\pm 20\%$ Z: +80/-20%	T: Tape Reel	N: NPO (COG) B: X7R F: Y5V X: X5R	6V3: 6.3V 250: 25V 500: 50V 101: 100V 102: 1000V 202: 2000V 302: 3000V	3R9: 3.9 μF 150: 15 μF 181: 180 μF 225: 2.2 μF 476: 47 μF 107: 100 μF

General Capacitance & Voltage

Capacitance & Voltage (NPO) (10V, 16V, 25V, 50V, 100V)

Dielectric		NPO														
EIA	Size	0402					0603					0805				
Code	VDCW	10V	16V	25V	50V	100V	10V	16V	25V	50V	100V	10V	16V	25V	50V	100V
0R5	0.5pF	N^	N^	N^	N^	N^	S	S	S	S	S	A	A	A	A	A
0R6	0.6	N^	N^	N^	N^	N^	S	S	S	S	S	A	A	A	A	A
0R7	0.7	N^	N^	N^	N^	N^	S	S	S	S	S	A	A	A	A	A
0R8	0.8	N^	N^	N^	N^	N^	S	S	S	S	S	A	A	A	A	A
0R9	0.9	N^	N^	N^	N^	N^	S	S	S	S	S	A	A	A	A	A
1R0	1.0	N^	N^	N^	N^	N^	S	S	S	S	S	A	A	A	A	A
1R2	1.2	N^	N^	N^	N^	N^	S	S	S	S	S	A	A	A	A	A
1R5	1.5	N^	N^	N^	N^	N^	S	S	S	S	S	A	A	A	A	A
1R8	1.8	N^	N^	N^	N^	N^	S	S	S	S	S	A	A	A	A	A
2R2	2.2	N^	N^	N^	N^	N^	S	S	S	S	S	A	A	A	A	A
2R7	2.7	N^	N^	N^	N^	N^	S	S	S	S	S	A	A	A	A	A
3R3	3.3	N^	N^	N^	N^	N^	S	S	S	S	S	A	A	A	A	A
3R9	3.9	N^	N^	N^	N^	N^	S	S	S	S	S	A	A	A	A	A
4R7	4.7	N^	N^	N^	N^	N^	S	S	S	S	S	A	A	A	A	A
5R6	5.6	N^	N^	N^	N^	N^	S	S	S	S	S	A	A	A	A	A
6R8	6.8	N^	N^	N^	N^	N^	S	S	S	S	S	A	A	A	A	A
8R2	8.2	N^	N^	N^	N^	N^	S	S	S	S	S	A	A	A	A	A
100	10pF	N	N	N	N	N	S	S	S	S	S	A	A	A	A	A
120	12	N	N	N	N	N	S	S	S	S	S	A	A	A	A	A
150	15	N	N	N	N	N	S	S	S	S	S	A	A	A	A	A
180	18	N	N	N	N	N	S	S	S	S	S	A	A	A	A	A
220	22	N	N	N	N	N	S	S	S	S	S	A	A	A	A	A
270	27	N	N	N	N	N	S	S	S	S	S	A	A	A	A	A
330	33	N	N	N	N	N	S	S	S	S	S	A	A	A	A	A
390	39	N	N	N	N	N	S	S	S	S	S	A	A	A	A	A
470	47	N	N	N	N	N	S	S	S	S	S	A	A	A	A	A
560	56	N	N	N	N	N	S	S	S	S	S	A	A	A	A	A
680	68	N	N	N	N	N	S	S	S	S	S	A	A	A	A	A
820	82	N	N	N	N	N	S	S	S	S	S	A	A	A	A	A
101	100pF	N	N	N	N	N	S	S	S	S	S	A	A	A	A	A
121	120	N	N	N	N	N	S	S	S	S	S	A	A	A	A	A
151	150	N	N	N	N	N	S	S	S	S	S	A	A	A	A	A
181	180	N	N	N	N	N	S	S	S	S	S	A	A	A	A	A
221	220	N	N	N	N	N	S	S	S	S	S	A	A	A	A	A
271	270	N	N	N	N	N	S	S	S	S	S	A	A	A	A	A
331	330	N	N	N	N	N	S	S	S	S	S	A	A	A	A	A
391	390	N	N	N	N	N	S	S	S	S	S	B	B	B	B	B
471	470	N	N	N	N	N	S	S	S	S	S	B	B	B	B	B
561	560	N	N	N	N	N	S	S	S	S	S	B	B	B	B	B
681	680	N	N	N	N	N	S	S	S	S	S	B	B	B	B	B
821	820						S	S	S	S	S	B	B	B	B	B
102	1000pF						S	S	S	S	S	B	B	B	B	B
122	1200						X	X	X	X		B	B	B	B	B
152	1500						X	X	X	X		B	B	B	B	B
182	1800						X	X	X	X		B	B	B	B	B
222	2200						X	X	X	X		B	B	B	B	B
272	2700						X	X	X	X		D	D	D	D	D
332	3300						X	X	X	X		D	D	D	D	D
392	3900											D	D	D	D	D
472	4700											D	D	D	D	D
562	5600											D^	D^			
682	6800											D^	D^			
822	8200											D^	D^			
103	0.01uF											D^	D^			
123	0.012											D^	D^			

* The letter in cell is expressed the symbol of product thickness
 * The "" mark is expressed product with Ag/Ni/Sn.

•Capacitance & Voltage (NPO) (10V, 16V, 25V, 50V, 100V)

Dielectric		NPO												
EIA	Size	1206					1210					1812		
Code	VDCW	10V	16V	25V	50V	100V	10V	16V	25V	50V	100V	16V	50V	100V
1R8	1.8	B	B	B	B	B								
2R2	2.2	B	B	B	B	B								
2R7	2.7	B	B	B	B	B								
3R3	3.3	B	B	B	B	B							C^	
3R9	3.9	B	B	B	B	B							C^	
4R7	4.7	B	B	B	B	B							C^	
5R6	5.6	B	B	B	B	B							C^	
6R8	6.8	B	B	B	B	B							C^	
8R2	8.2	B	B	B	B	B							C^	
100	10pF	B	B	B	B	B							C^	D^
120	12	B	B	B	B	B							C^	D^
150	15	B	B	B	B	B							C^	D^
180	18	B	B	B	B	B							C^	D^
220	22	B	B	B	B	B	C^	C^	C^	C^	C^			D^
270	27	B	B	B	B	B	C^	C^	C^	C^	C^			D^
330	33	B	B	B	B	B	C^	C^	C^	C^	C^			D^
390	39	B	B	B	B	B	C^	C^	C^	C^	C^			D^
470	47	B	B	B	B	B	C^	C^	C^	C^	C^			D^
560	56	B	B	B	B	B	C^	C^	C^	C^	C^			D^
680	68	B	B	B	B	B	C^	C^	C^	C^	C^			D^
820	82	B	B	B	B	B	C^	C^	C^	C^	C^			D^
101	100pF	B	B	B	B	B	C^	C^	C^	C^	C^			D^
121	120	B	B	B	B	B	C^	C^	C^	C^	C^			D^
151	150	B	B	B	B	B	C^	C^	C^	C^	C^			D^
181	180	B	B	B	B	B	C^	C^	C^	C^	C^			D^
221	220	B	B	B	B	B	C^	C^	C^	C^	C^			D^
271	270	B	B	B	B	B	C^	C^	C^	C^	C^			D^
331	330	B	B	B	B	B	C^	C^	C^	C^	C^			D^
391	390	B	B	B	B	B	C^	C^	C^	C^	C^			D^
471	470	B	B	B	B	B	C^	C^	C^	C^	C^			D^
561	560	B	B	B	B	B	C^	C^	C^	C^	C^			D^
681	680	B	B	B	B	B	C^	C^	C^	C^	C^			D^
821	820	B	B	B	B	B	C^	C^	C^	C^	C^			D^
102	1000pF	B	B	B	B	B	C^	C^	C^	C^	C^	D^	D^	D^
122	1200	B	B	B	B	B	C^	C^	C^	C^	C^	D^	D^	D^
152	1500	B	B	B	B	B	C^	C^	C^	C^	C^	D^	D^	D^
182	1800	B	B	B	B	B	C^	C^	C^	C^	C^	D^	D^	D^
222	2200	B	B	B	B	B	C^	C^	C^	C^	C^	D^	D^	D^
272	2700	B	B	B	B	B	C^	C^	C^	C^	C^	D^	D^	D^
332	3300	B	B	B	B	B	C^	C^	C^	C^	C^	D^	D^	D^
392	3900	B	B	B	B	B	C^	C^	C^	C^	C^	D^	D^	D^
472	4700	B	B	B	B	B	C^	C^	C^	C^	C^	D^	D^	D^
562	5600	B	B	B	B	B	C^	C^	C^	C^	C^	D^	D^	D^
682	6800	C	C	C	C	C	C^	C^	C^	C^	C^	D^	D^	D^
822	8200	D	D	D	D	D	C^	C^	C^	C^	C^	D^	D^	D^
103	0.01uF	D	D	D	D	D	C^	C^	C^	C^	C^	D^	D^	D^
123	0.012	D^	D^				C^	C^	D^	D^	D^	D^	D^	D^
153	0.015	D^	D^				C^	C^	D^	D^	D^	D^	D^	D^
183	0.018	D^	D^									D^	D^	D^
223	0.022	D^	D^									D^	D^	D^
273	0.027	D^	D^									D^	D^	D^
333	0.033	D^	D^									D^	D^	D^
393	0.039	G^	G^											

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 • The “^” mark is expressed product with Ag/Ni/Sn

-Capacitance & Voltage (X7R) (6.3V, 10V, 16V, 25V, 50V, 100V)

Dielectric		X7R															
EIA	Size	0402				0603						0805					
Code	VDCW	10V	16V	25V	50V	6.3V	10V	16V	25V	50V	100V	6.3V	10V	16V	25V	50V	100V
101	100pF	N	N	N	N		S	S	S	S	S		B	B	B	B	B
121	120	N	N	N	N		S	S	S	S	S		B	B	B	B	B
151	150	N	N	N	N		S	S	S	S	S		B	B	B	B	B
181	180	N	N	N	N		S	S	S	S	S		B	B	B	B	B
221	220	N	N	N	N		S	S	S	S	S		B	B	B	B	B
271	270	N	N	N	N		S	S	S	S	S		B	B	B	B	B
331	330	N	N	N	N		S	S	S	S	S		B	B	B	B	B
391	390	N	N	N	N		S	S	S	S	S		B	B	B	B	B
471	470	N	N	N	N		S	S	S	S	S		B	B	B	B	B
561	560	N	N	N	N		S	S	S	S	S		B	B	B	B	B
681	680	N	N	N	N		S	S	S	S	S		B	B	B	B	B
821	820	N	N	N	N		S	S	S	S	S		B	B	B	B	B
102	1000pF	N	N	N	N		S	S	S	S	S		B	B	B	B	B
122	1200	N	N	N	N		S	S	S	S	S		B	B	B	B	B
152	1500	N	N	N	N		S	S	S	S	S		B	B	B	B	B
182	1800	N	N	N	N		S	S	S	S	S		B	B	B	B	B
222	2200	N	N	N	N		S	S	S	S	S		B	B	B	B	B
272	2700	N	N	N	N		S	S	S	S	S		B	B	B	B	B
332	3300	N	N	N	N		S	S	S	S	S		B	B	B	B	B
392	3900	N	N	N	N		S	S	S	S	S		B	B	B	B	B
472	4700	N	N	N	N		S	S	S	S	S		B	B	B	B	B
562	5600	N	N	N	N		S	S	S	S	S		B	B	B	B	B
682	6800	N	N	N	N		S	S	S	S	S		B	B	B	B	B
822	8200	N	N	N	N		S	S	S	S	S		B	B	B	B	B
103	0.01 μ F	N	N	N	N		S	S	S	S	S		B	B	B	B	B
123	0.012	N	N	N			S	S	S	S			B	B	B	B	B
153	0.015	N	N	N			S	S	S	S			B	B	B	B	B
183	0.018	N	N	N			S	S	S	S			B	B	B	B	B
223	0.022	N	N	N			S	S	S	S			B	B	B	B	B
273	0.027	N	N	N			S	S	S	S			B	B	B	B	D
333	0.033	N	N	N			S	S	S	X			B	B	B	B	D
393	0.039	N	N	N			S	S	S	X			B	B	B	B	D
473	0.047	N	N	N			S	S	S	X			B	B	B	B	D
563	0.056	N	N				S	S	S	X			B	B	B	B	D
683	0.068	N	N				S	S	S	X			B	B	B	B	D
823	0.082	N	N				S	S	S	X			B	B	B	B	D
104	0.10 μ F	N	N				S	S	S	X			B	B	B	B	D
124	0.12						S	X	X				D	D	D	D	
154	0.15						S	X	X				D	D	D	D	
184	0.18						S	X	X				D	D	D	D	
224	0.22					X	S	X	X				D	D	D	D	
274	0.27					X	X	X	X				D	D	D	I	
334	0.33					X	X	X	X				D	D	D	I	
394	0.39					X	X	X	X				D	D	D	I	
474	0.47					X	X	X	X				D	D	D	I	
564	0.56					X	X						D	D	D		
684	0.68					X	X						D	D	D		
824	0.82					X	X						D	D	D		
105	1.0 μ F					X	X						D	D	D		
155	1.5												I	I			
225	2.2											I	I	I	I		
335	3.3																
475	4.7																

• The letter in cell is expressed the symbol of product thickness

-Capacitance & Voltage (X7R) (6.3V, 10V, 16V, 25V, 50V, 100V)

Dielectric		X7R															
EIA	Size	1206					1210					1812					
Code	VDCW	6.3V	10V	16V	25V	50V	100V	10V	16V	25V	50V	100V	10V	16V	25V	50V	100V
101	100pF																
121	120																
151	150		B	B	B	B	B										
181	180		B	B	B	B	B										
221	220		B	B	B	B	B										
271	270		B	B	B	B	B										
331	330		B	B	B	B	B										
391	390		B	B	B	B	B										
471	470		B	B	B	B	B										
561	560		B	B	B	B	B										
681	680		B	B	B	B	B										
821	820		B	B	B	B	B										
102	1000pF		B	B	B	B	B	C	C	C	C	C	D	D	D	D	D
122	1200		B	B	B	B	B	C	C	C	C	C	D	D	D	D	D
152	1500		B	B	B	B	B	C	C	C	C	C	D	D	D	D	D
182	1800		B	B	B	B	B	C	C	C	C	C	D	D	D	D	D
222	2200		B	B	B	B	B	C	C	C	C	C	D	D	D	D	D
272	2700		B	B	B	B	B	C	C	C	C	C	D	D	D	D	D
332	3300		B	B	B	B	B	C	C	C	C	C	D	D	D	D	D
392	3900		B	B	B	B	B	C	C	C	C	C	D	D	D	D	D
472	4700		B	B	B	B	B	C	C	C	C	C	D	D	D	D	D
562	5600		B	B	B	B	B	C	C	C	C	C	D	D	D	D	D
682	6800		B	B	B	B	B	C	C	C	C	C	D	D	D	D	D
822	8200		B	B	B	B	B	C	C	C	C	C	D	D	D	D	D
103	0.01 μF		B	B	B	B	B	C	C	C	C	C	D	D	D	D	D
123	0.012		B	B	B	B	B	C	C	C	C	C	D	D	D	D	D
153	0.015		B	B	B	B	B	C	C	C	C	C	D	D	D	D	D
183	0.018		B	B	B	B	B	C	C	C	C	C	D	D	D	D	D
223	0.022		B	B	B	B	B	C	C	C	C	C	D	D	D	D	D
273	0.027		B	B	B	B	B	C	C	C	C	C	D	D	D	D	D
333	0.033		B	B	B	B	B	C	C	C	C	C	D	D	D	D	D
393	0.039		B	B	B	B	B	C	C	C	C	C	D	D	D	D	D
473	0.047		B	B	B	B	B	C	C	C	C	C	D	D	D	D	D
563	0.056		B	B	B	B	B	C	C	C	C	C	D	D	D	D	D
683	0.068		B	B	B	B	B	C	C	C	C	C	D	D	D	D	D
823	0.082		B	B	B	B	D	C	C	C	C	C	D	D	D	D	D
104	0.10 μF		B	B	B	B	D	C	C	C	C	C	D	D	D	D	D
124	0.12		B	B	B	B	D	C	C	C	C	C	D	D	D	D	D
154	0.15		C	C	C	C	G	C	C	C	C	D	D	D	D	D	D
184	0.18		C	C	C	C	G	C	C	C	C	D	D	D	D	D	D
224	0.22		C	C	C	C	G	C	C	C	C	D	D	D	D	D	D
274	0.27		C	C	C	D		C	C	C	C	G	D	D	D	D	D
334	0.33		C	C	C	D		C	C	C	D	G	D	D	D	D	D
394	0.39		C	C	J	P		C	C	C	D	M	D	D	D	D	D
474	0.47		J	J	J	P		C	C	C	D	M	D	D	D	D	K
564	0.56		J	J	J	P		D	D	D	D	M	D	D	D	D	K
684	0.68		J	J	J	P		D	D	D	D	K	D	D	D	K	K
824	0.82		J	J	J	P		D	D	D	D	K	D	D	D	K	K
105	1.0 μF		J	J	J	P		D	D	D	D	K	D	D	D	K	K
155	1.5	J	J	J													K
225	2.2	J	J	J	P				K	G						M	M
335	3.3	P	P	P	P												
475	4.7	P	P	P	P			K	K								
106	10	P	P					K	K								

• The letter in cell is expressed the symbol of product thickness

-Capacitance & Voltage (X5R) (6.3V, 10V, 16V, 25V)

Dielectric		X5R																			
EIA	Size	0402				0603				0805				1206				1210			
Code	VDCW	6.3V	10V	16V	25V	6.3V	10V	16V	25V	6.3V	10V	16V	25V	6.3V	10V	16V	25V	6.3V	10V	16V	
273	0.027 μ F			N																	
333	0.033			N																	
393	0.039			N																	
473	0.047			N																	
563	0.056		N	N																	
683	0.068		N	N																	
823	0.082	N	N	N																	
104	0.10 μ F	N	N	N	N																
224	0.22	N	N					X	X												
274	0.27						X	X													
334	0.33	N				X	X	X	X												
394	0.39						X	X													
474	0.47	N					X	X	X												
684	0.68	N					X	X	X												
824	0.82					X	X	X													
105	1.0 μ F	N	N			X	X	X	X												
155	1.5					X				I	I				J	J			K	K	
225	2.2	N				X	X			I	I	I	I		J	J	P		K	K	
335	3.3									I	I	I	I		P	P	P				
475	4.7					X				I	I	I	I	P	P	P	P		K	K	
685	6.8													P	P						
106	10 μ F									I	I			P	P	P	P	K	K	K	
226	22													P	P						

-Capacitance & Voltage (Y5V) (6.3V, 10V, 16V, 25V, 50V, 100V)

Dielectric		Y5V																																	
EIA	Size	0402					0603					0805					1206					1210					1812								
Code	VDCW	6.3	10V	16V	25V	50V	6.3	10V	16V	25V	50V	6.3	10V	16V	25V	50V	100	10V	16V	25V	35V	50V	100	6.3	10V	16V	25V	35V	50V	100	10V	16V	25V	50V	100
103	0.010 μ		N	N	N	N	S	S	S	S		A	A	A	A	B	B	B	B		B	B								C					D
153	0.015		N	N	N	N	S	S	S	S		A	A	A	A	B	B	B	B		B	B								C					D
223	0.022		N	N	N	N	S	S	S	S		A	A	A	A	B	B	B	B		B	B								C					D
333	0.033		N	N	N	N	S	S	S	S		A	A	A	A	B	B	B	B		B	B								C					D
473	0.047		N	N	N		S	S	S	S		A	A	A	A	B	B	B	B		B	B								C					D
683	0.068		N	N	N		S	S	S	S		A	A	A	A	B	B	B	B		B	B								C					D
104	0.10 μ F		N	N	N		S	S	S	S		A	A	A	A	B	B	B	B		B	B		C	C	C		C	C	D	D	D	D	D	
154	0.15		N				S	S	S	S		A	A	A	A	B	B	B		B	C		C	C	C		C	C	D	D	D	D	D		
224	0.22	N	N				S	S	S	S		A	A	A	A	B	B	B		B	C		C	C	C		C	C	D	D	D	D	D		
334	0.33	N	N				S	S	S		B	B	B	B	B	B	B	B		B			C	C	C		C	C	D	D	D	D	D		
474	0.47	N	N				S	S	X		B	B	B	D	D	B	B	B		B			C	C	C		C	C	D	D	D	D	D		
684	0.68	N					S	X			B	B	D	D		B	B	B		B			C	C	C		C	C	D	D	D	D	D		
105	1.0 μ F	N	N				S	X	X		B	B	D	D		C	C	C		C/D			C	C	C		C	C	D	D	D	D	D		
155	1.5						S				D	D				C	C	C					C	C	C				D	D	D	D			
225	2.2						S	S	X		D	D	I			C	C	C		J			C	C	C		G		D	D	D	D			
335	3.3										D	D				J	J	J					C	C	C				D	D	D	D			
475	4.7						X				D	D	I			J	J	J	J				C	C	D		G		D	D	D	D			
685	6.8										I					J	J						C	C	D				D	D	D	D			
106	10 μ F										I	I				J	J	P					D	D	G	K			D	D	D				
226	22 μ F															P								K	K										
476	47 μ F																							K	K									M	
107	100 μ F																							M											

■ Environmental Characteristics

Size	0402, 0603, 0805, 1206, 1812			
Dielectric	NP0	X7R	X5R	Y5V
Capacitance*	0.5pF~0.039 μF	100pF~10 μF	27nF~22 μF	10nF~100 μF
Capacitance tolerance	Cap ≤ 5pF: B (±0.1pF), C (±0.25pF) 5pF < Cap < 10pF: C (±0.25pF), D (±0.50pF) Cap ≥ 10pF: J (±5%)	J (±5%) K (±10%)		M (±20%) Z (-20/+80%)
Rated voltage(VDCW)	10V, 16V, 25V, 50V, 100V	6.3V, 10V, 16V, 25V, 50V, 100V		
Q*	Cap < 30pF: Q ≥ 400+20C Cap ≥ 30pF: Q ≥ 1000	Note 1		
Insulation resistance at Ur**	≥ 10GΩ or R × C ≥ 500Ω × F Whichever is less			
Operating temperature	-55 to +125°C		-55 to 85°C	-25 to +85°C
Capacitance change	± 30 ppm	± 15%		+30/-80%
Termination	Ni/Sn (lead-free termination)			

* '*' Measured at the condition of 30~70% related humidity.

*NP0: Apply 1.0±0.2Vrms, 1.0MHz±10% for Cap ≤ 1000pF and 1.0±0.2Vrms, 1.0 KHz±10% for Cap > 1000pF, 25°C ambient temperature.

*X7R: Apply 1.0±0.2Vrms, 1.0KHz±10% at the condition of 25°C ambient temperature.

*Y5V: Apply 1.0±0.2Vrms, 1.0 KHz±10% at the condition of 20°C ambient temperature.

Note 1: X7R/X5R

Rated vol.	D.F.	Exception of D.F.	
≥ 50V	≤ 2.5%	≤ 3%	0603 ≥ 0.047 μF 0805 ≥ 0.18 μF 1206 ≥ 0.47 μF
25V	≤ 3.5%	≤ 5%	0805 ≥ 1 μF 1210 ≥ 10 μF
		≤ 7%	0603 ≥ 0.33 μF 1206 ≥ 4.7 μF
		≤ 10%	0402 ≥ 0.10 μF 0603 ≥ 0.47 μF 0805 ≥ 2.2 μF 1206 ≥ 6.8 μF
16V	≤ 3.5%	≤ 5%	0402 ≥ 0.033 μF 0603 ≥ 0.15 μF 0805 ≥ 0.68 μF 1206 ≥ 2.2 μF 1210 ≥ 4.7 μF
		≤ 10%	0603 ≥ 0.68 μF 0805 ≥ 0.68 μF 1206 ≥ 4.7 μF 1210 ≥ 22 μF
10V	≤ 5.0%	≤ 10%	0402 ≥ 0.33 μF 0603 ≥ 0.33 μF 0805 ≥ 2.2 μF 1206 ≥ 2.2 μF 1210 ≥ 22 μF
		≤ 15%	0402 ≥ 1 μF
6.3V	≤ 10%	≤ 15%	0603 ≥ 10 μF 0805 ≥ 4.7 μF 1210 ≥ 100 μF
		≤ 20%	0402 ≥ 2.2 μF

Y5V

Rated vol.	D.F.	Exception of D.F.	
≥ 50V	≤ 5.0%	≤ 7%	0603 ≥ 0.1 μF 0805 ≥ 0.47 μF 1206 ≥ 4.7 μF
35V	7%	—	—
25V	≤ 5.0%	≤ 7%	0402 ≥ 0.047 μF 0603 ≥ 0.1 μF 0805 ≥ 0.33 μF 1206 ≥ 1 μF 1210 ≥ 4.7 μF
		≤ 9%	0402 ≥ 0.068 μF 0603 ≥ 0.47 μF 1206 ≥ 4.7 μF 1210 ≥ 22 μF
16V(C < 1.0 μF)	≤ 7.0%	≤ 9%	0402 ≥ 0.068 μF 0603 ≥ 0.68 μF
		≤ 12.5%	0402 ≥ 0.22 μF
16V(C ≥ 1.0 μF)	≤ 9.0%		0603 ≥ 2.2 μF 0805 ≥ 3.3 μF 1206 ≥ 10 μF 1210 ≥ 22 μF 1812 ≥ 47 μF
10V	≤ 12.5%	≤ 20%	0402 ≥ 0.47 μF
6.3V	≤ 20%	—	—

■ Middle and High Voltage

• Capacitance & Voltage (NPO) (200V~3KV)

Dielectric		NPO																												
EIA	Size	0603				0805				1206					1210					1808			1812							
Code	VDCW	200	250	200	250	500	630	200	250	500	630	1000	2000	200	250	500	630	1000	2000	1000	2000	3000	200	250	500	630	1000	2000	3000	
0R5	0.5pF	S	S	A	A	A	A																							
1R0	1	S	S	A	A	A	A																							
1R2	1.2	S	S	A	A	A	A																							
1R5	1.5	S	S	A	A	A	A	B	B	B	B	B	B																	
1R8	1.8	S	S	A	A	A	A	B	B	B	B	B	B																	
2R2	2.2	S	S	A	A	A	A	B	B	B	B	B	B							D	D	D								
2R7	2.7	S	S	A	A	A	A	B	B	B	B	B	B							D	D	D								
3R3	3.3	S	S	A	A	A	A	B	B	B	B	B	B							D	D	D								
3R9	3.9	S	S	A	A	A	A	B	B	B	B	B	B							D	D	D								
4R7	4.7	S	S	A	A	A	A	B	B	B	B	B	B							D	D	D								
5R6	5.6	S	S	A	A	A	A	B	B	B	B	B	B							D	D	D								
6R8	6.8	S	S	A	A	A	A	B	B	B	B	B	B							D	D	D								
8R2	8.2	S	S	A	A	A	A	B	B	B	B	B	B							D	D	D								
100	10pF	S	S	A	A	A	A	B	B	B	B	B	B	C [^]	C [^]	C [^]	C [^]	C	C	D	D	D	D [^]	D [^]	D [^]	D [^]	D	D	D	
120	12	S	S	A	A	A	A	B	B	B	B	B	B	C [^]	C [^]	C [^]	C [^]	C	C	D	D	D	D [^]	D [^]	D [^]	D [^]	D	D	D	
150	15	S	S	A	A	A	A	B	B	B	B	B	B	C [^]	C [^]	C [^]	C [^]	C	C	D	D	D	D [^]	D [^]	D [^]	D [^]	D	D	D	
180	18	S	S	A	A	A	A	B	B	B	B	B	B	C [^]	C [^]	C [^]	C [^]	C	C	D	D	D	D [^]	D [^]	D [^]	D [^]	D	D	D	
220	22	S	S	A	A	A	A	B	B	B	B	B	B	C [^]	C [^]	C [^]	C [^]	C	C	D	D	D	D [^]	D [^]	D [^]	D [^]	D	D	D	
270	27	S	S	A	A	A	A	B	B	B	B	B	B	C [^]	C [^]	C [^]	C [^]	C	C	D	D	D	D [^]	D [^]	D [^]	D [^]	D	D	D	
330	33	S	S	A	A	A	A	B	B	B	B	B	B	C	C [^]	C [^]	C [^]	C [^]	C	C	D	D	D	D [^]	D [^]	D [^]	D [^]	D	D	D
390	39	S	S	A	A	A	A	B	B	B	B	B	B	C	C [^]	C [^]	C [^]	C [^]	C	C	D	D	D	D [^]	D [^]	D [^]	D [^]	D	D	D
470	47	S	S	A	A	A	A	B	B	B	B	B	C	C [^]	C [^]	C [^]	C [^]	C	C	D	D	D	D [^]	D [^]	D [^]	D [^]	D	D	D	
560	56	S	S	A	A	A	A	B	B	B	B	C	D	C [^]	C [^]	C [^]	C [^]	C	D	D	D	D	D [^]	D [^]	D [^]	D [^]	D	D	D	
680	68	S	S	A	A	A	A	B	B	B	B	C	D	C [^]	C [^]	C [^]	C [^]	C	D	D	D	D	D [^]	D [^]	D [^]	D [^]	D	D	D	
820	82	S	S	A	A	B	B	B	B	B	B	D	D	C [^]	C [^]	C [^]	C [^]	C	D	D	D	D	D [^]	D [^]	D [^]	D [^]	D	D	D	
101	100pF	S	S	A	B	B	B	B	B	B	B	D	D	C [^]	C [^]	C [^]	C [^]	D	D	D	D	K	D [^]	D [^]	D [^]	D [^]	D	D	D	
121	120	S	S	A	B	D	D	B	B	B	B	D	G	C [^]	C [^]	C [^]	C [^]	D	D	D	D	K	D [^]	D [^]	D [^]	D [^]	D	D	D	
151	150	S	S	B	D	D	D	B	B	B	B	D	G	C [^]	C [^]	C [^]	C [^]	D	G	D	K	K	D [^]	D [^]	D [^]	D [^]	D	D	D	
181	180	S	S	B	D	D	D	B	B	B	B	G	G	C [^]	C [^]	C [^]	C [^]	D	G	D	K	K	D [^]	D [^]	D [^]	D [^]	D	D	K	
221	220	S	S	D	D	D	D	B	B	B	B	G	G	C [^]	C [^]	C [^]	C [^]	G	G	D	K	K	D [^]	D [^]	D [^]	D [^]	D	D	K	
271	270			D	D	D	D	B	C	C	C	G		C [^]	C [^]	C [^]	C [^]	G		K	K	K	D [^]	D [^]	D [^]	D [^]	D	K	K	
331	330			D	D	D	D	B	C	C	C	G		C [^]	C [^]	C [^]	C [^]	G		K	K	K	D [^]	D [^]	D [^]	D [^]	D	K	K	
391	390			D	D	D	D	B	C	C	C	G		C [^]	C [^]	C [^]	C [^]	G		K	K		D [^]	D [^]	D [^]	D [^]	D	K	K	
471	470			D				C	C	C	C	G		C [^]	C [^]	C [^]	C [^]	G		K	K		D [^]	D [^]	D [^]	D [^]	K	K	K	
561	560			D				C	D	D	D			C [^]	C [^]	C [^]	C [^]			K	K		D [^]	D [^]	D [^]	D [^]	K	K		
681	680			D				C	D	D	D			C [^]	C [^]	C [^]	C [^]			K	K		D [^]	D [^]	D [^]	D [^]	K	K		
821	820			D				C	G	G	G			C [^]	C [^]	C [^]	C [^]			K			D [^]	D [^]	D [^]	D [^]	K	K		
102	1000pF			D				C	G	G	G			D [^]	D [^]	D [^]	D [^]			K			D [^]	D [^]	D [^]	D [^]	K	K		
122	1200							C	G	G	G			D [^]	D [^]	D [^]	D [^]						D [^]	D [^]	D [^]	D [^]	K			
152	1500							D	G	G	G			D [^]	D [^]	D [^]	D [^]						D [^]	D [^]	D [^]	D [^]	K			
182	1800							D	G	G	G			D [^]	D [^]	D [^]	D [^]						D [^]	D [^]	D [^]	D [^]				
222	2200							D	G	G	G			D [^]	D [^]								D [^]	D [^]	D [^]	D [^]				
272	2700													D [^]	D [^]								D [^]	D [^]	D [^]	D [^]				
332	3300													D [^]									D [^]	D [^]	D [^]	D [^]				
392	3900													D [^]									D [^]							
472	4700																						D [^]							
562	5600																						D [^]							
682	6800																						D [^]							

• The letter in cell is expressed the symbol of product
 • The “^” mark is expressed product with Ag/Ni/Sn termination.

•Capacitance & Voltage (X7R) (200V~3KV)

Dielectric		X7R																											
EIA	Size	0805				1206						1210					1808			1812									
Code	VDCW	200V	250V	500V	630V	200V	250V	500V	630V	1000V	2000V	200V	250V	500V	630V	1000V	1000V	2000V	3000V	200V	250V	500V	630V	1000V	2000V	3000V			
101	100pF	B	B	B	B																								
121	120	B	B	B	B																								
151	150	B	B	B	B	D	D	D	D	D	D							D	D	D									
181	180	B	B	B	B	D	D	D	D	D	D							D	D	D									
221	220	B	B	B	B	D	D	D	D	D	D							D	D	D									
271	270	B	B	B	B	D	D	D	D	D	D							D	D	D					D	D			
331	330	B	B	B	B	D	D	D	D	D	D							D	D	K					D	D			
391	390	B	B	B	B	D	D	D	D	D	D							D	D	K					D	D			
471	470	B	B	B	B	D	D	D	D	D	D							D	D	K					D	D			
561	560	B	B	B	B	D	D	D	D	D	D							D	D	K					D	D			
681	680	B	B	B	B	D	D	D	D	D	D							D	D	K					D	D	K		
821	820	B	B	B	B	D	D	D	D	D	G							D	D	K					D	D	K		
102	1000pF	B	B	B	B	D	D	D	D	D	G	C	C	D	D	D	D	K	K	D	D	D	D	D	D	D	K		
122	1200	B	B	B	B	D	D	D	D	D	G^	C	C	D	D	D	D	K		D	D	D	D	D	D	D			
152	1500	B	B	B	B	D	D	D	D	D	G^	C	C	D	D	D	D	K		D	D	D	D	D	D	D			
182	1800	B	B	B	B	D	D	D	D	D		C	C	D	D	D	D	K		D	D	D	D	D	D	D			
222	2200	B	B	B	B	D	D	D	D	D		C	C	D	D	D	D	K^		D	D	D	D	D	D	D			
272	2700	B	B	B	B	D	D	D	D	D		C	C	D	D	D	D			D	D	D	D	D	D	D			
332	3300	B	B	B	B	D	D	D	D	D		C	C	D	D	D	D			D	D	D	D	D	D	D	K		
392	3900	B	B	B	B	D	D	D	D	D		C	C	D	D	D	G	D		D	D	D	D	D	D	D	K		
472	4700	B	D			D	D	D	D	D		C	C	D	D	G	D			D	D	D	D	D	D	D	K		
562	5600	D	D			D	D	D	D	D		C	C	D	D	G	K			D	D	D	D	D	D	D			
682	6800	D	D			D	D	D	D	D		C	C	D	D	G	K			D	D	D	D	D	D	D			
822	8200	D	D			D	D	D	D	D		C	C	D	D	G	K			D	D	D	D	D	D	D			
103	0.010 μF	D	D			D	D	D	D	D		C	C	D	D	G	K			D	D	D	D	D	D	D			
123	0.012	D				D	D	D	D			C	C	D	D					D	D	D	D	D	K				
153	0.015	D				D	D	D	D			C	C	D	D					D	D	D	D	D	K				
183	0.018	D				D	D	D	D			C	C	D	D					D	D	D	D	D					
223	0.022	D				D	D	G	G			C	C	D	D					D	D	D	D						
273	0.027					D	D	G	G			C	C	G	G					D	D	D	D						
333	0.033					G	G	G	G			C	C	G	G					D	D	D	D						
393	0.039					G	G					C	C	G	G					D	D	D	D						
473	0.047					G	G					D	D	G	G					D	D	D	D						
563	0.056					G	G					D	D	G	G					D	D	K	K						
683	0.068					G	G					G	G							D	D	K	K						
823	0.082					G	G					G	G							D	D	K	K						
104	0.10 μF					G	G					G	G							D	D	K	K						
124	0.12											G	G							D	D								
154	0.15											M	M							K	K								
184	0.18											M	M							K	K								
224	0.22											M	M							K	K								
274	0.27											M	M							K	K								
334	0.33											M	M							K	K								
394	0.39											M	M							K	K								
474	0.47											M	M							K	K								

•The letter in cell is expressed the symbol of product thickness
 •The “^” mark is expressed product with Ag/Ni/Sn terminations.

• Capacitance & Voltage (Y5V) (200V~250V)

Dielectric		Y5V							
EIA	Size	0805		1206		1210		1812	
Code	VDCW	200	250	200	250	200	250	200	250
103	0.010 μ F	B	B	B	B	C	C	D	D
153	0.015	B	B	B	B	C	C	D	D
223	0.022	B	B	B	B	C	C	D	D
333	0.033	B	B	B	B	C	C	D	D
473	0.047	B	B	B	B	C	C	D	D
683	0.068	B	B	B	B	C	C	D	D
104	0.10 μ F			B	B	C	C	D	D
154	0.15			C	C	C	C	D	D
224	0.22							D	D
334	0.33							D	D
474	0.47							D	D
684	0.68							D	D

• The letter in cell is expressed the symbol of product thickness

Electrical data

Dielectric	NP0	X7R	Y5V
Size	0603,0805,1206,1210,1808,1812	0805,1206,1210,1808,1812	0805,1206,1210,1812
Capacitance*	0.5pF~6800pF	100pF~0.47 μ F	0.01uF~0.68 μ F
Capacitance tolerance	Cap \leq 5pF: C (\pm 0.25pF) 5pF < Cap < 10pF: D (\pm 0.50pF) Cap \geq 10pF: J (\pm 5%), K (\pm 10%)	K (\pm 10%) M (\pm 20%)	Z (-20/+80%)
Rated voltage(VDCW)	200V to 3KV		200V, 250V
Q*	Cap < 30pF: Q \geq 400+20C Cap \geq 30pF: Q \geq 1000	\leq 2.5%	\leq 5%
Insulation resistance at Ur**	Ur=200~630V: \geq 10G Ω or R \times C \geq 100 Ω -F Whichever is smaller Ur=1000~3000V: \geq 10G Ω		
Dielectric Strength	200~300V: \geq 2 \times VDCW 500~999V: \geq 1.5 \times VDCW 1000~3000V: \geq 1.2 \times VDCW		
Operating temperature	-55 to +125 $^{\circ}$ C		-25 to +85 $^{\circ}$ C
Capacitance change	\pm 30 ppm	\pm 15%	+30/-80%
Termination	Ni/Sn (lead-free termination)		

• '*' Measured at the condition of 30~70% related humidity.

• NP0: Apply 1.0 \pm 0.2Vrms, 1.0MHz \pm 10% for Cap \leq 1000pF and 1.0 \pm 0.2Vrms, 1.0KHz \pm 10% for Cap > 1000pF, 25 $^{\circ}$ C ambient temperature.

• X7R, X5R: Apply 1.0 \pm 0.2Vrms, 1.0KHz \pm 10% at the condition of 20 $^{\circ}$ C ambient temperature.

• '**' Measured at 500VDC for 60 sec. for Ur > 500VDC

■ Ultra-Small 0201 Capacitors

• Capacitance & Voltage (NPO, X5R, X7R) (6.3V, 10V, 16V, 25V, 50V)

EIA	Size	0201		
Dielectric		NPO		
Code	VDCW	16V	25V	50V
0R3	0.3pF		L [^]	L [^]
0R4	0.4		L [^]	L [^]
0R5	0.5		L [^]	L [^]
1R0	1.0		L [^]	L [^]
1R2	1.2		L [^]	L [^]
1R5	1.5		L [^]	L [^]
1R8	1.8		L [^]	L [^]
2R2	2.2		L [^]	L [^]
2R7	2.7		L [^]	L [^]
3R3	3.3		L [^]	L [^]
3R9	3.9		L [^]	L [^]
4R0	4.0		L [^]	L [^]
4R7	4.7		L [^]	L [^]
5R6	5.6		L [^]	L [^]
6R8	6.8		L [^]	L [^]
8R2	8.2		L [^]	L [^]
100	10		L [^]	L [^]
120	12		L [^]	L [^]
150	15		L [^]	L [^]
180	18		L [^]	L [^]
220	22		L [^]	L [^]
270	27		L [^]	L [^]
330	33		L [^]	L [^]
390	39		L [^]	L [^]
470	47		L [^]	L [^]
560	56	L [^]	L [^]	
680	68	L [^]	L [^]	
820	82	L [^]	L [^]	
101	100	L [^]	L [^]	

EIA	Size	0201									
Dielectric		X7R					X5R				
Code	VDCW	6.3V	10V	16V	25V	50V	6.3V	10V	16V	25V	50V
101	100pF			L	L	L			L	L	L
121	120			L	L	L			L	L	L
151	150			L	L	L			L	L	L
181	180			L	L	L			L	L	L
221	220			L	L	L			L	L	L
271	270			L	L	L			L	L	L
331	330			L	L	L			L	L	L
391	390			L	L	L			L	L	L
471	470			L	L	L			L	L	L
561	560			L	L	L			L	L	L
681	680			L	L	L			L	L	L
821	820			L	L	L			L	L	L
102	1000	L	L	L	L	L			L	L	L
152	1500	L	L	L				L	L		
222	2200	L	L	L				L	L		
272	2700	L	L	L				L	L		
332	3300	L	L	L				L	L		
472	4700	L	L	L				L	L		
682	6800	L	L					L			
103	0.010 μF	L	L					L	L		
153	0.015							L			
223	0.022							L			
333	0.033							L			
473	0.047							L			
683	0.068							L			
104	0.100							L			

- The letter in cell is expressed the symbol of product thickness.
- The “^” mark is expressed product with Ag/Ni/Sn terminations

• Electrical Data

Size	0201			
	Dielectric	NPO	X7R	X5R
Capacitance*		0.3pF~100pF	100pF~10nF	100pF~0.1 μF
Capacitance tolerance		Cap ≤ 5pF: C (±0.25pF) 5pF < Cap < 10pF: D (±0.50pF) Cap ≥ 10pF: J (±5%)	J (±5%) K (±10%)	K (±10%) M (±20%)
Rated voltage(VDCW)		16V,25V,50V	6.3V, 10V, 16V, 25V, 50V	6.3V, 10V, 16V, 25V, 50V
Tan δ /Q*		Cap < 30pF: Q ≥ 400+20C Cap ≥ 30pF: Q ≥ 1000	Ur=50V: ≤ 3.0% Ur=16V, 25V: ≤ 3.5% Ur=10V: ≤ 5.0% Ur=6.3V: ≤ 10%	Ur=50V: ≤ 3.0% Ur=16V, 25V: ≤ 3.5% Ur=10V: ≤ 5.0% Ur=6.3V: ≤ 10%
Insulation resistance at Ur		≥ 10GΩ	≥ 10GΩ or R × C ≥ 500Ω × F Whichever is less	
Operating temperature		-55 to +125°C		-55 to +85°C
Capacitance change		± 30 ppm	± 15%	
Termination		Ni/Sn (lead-free termination)		

- ‘*’ Measured at 30~70% related humidity.
- NPO: Apply 1.0±0.2Vrms, 1.0MHz±10% at the condition of 25°C ambient temperature.
- X7R, X5R: Apply 1.0±0.2Vrms, 1.0KHz±10% at the condition of 25°C ambient temperature.

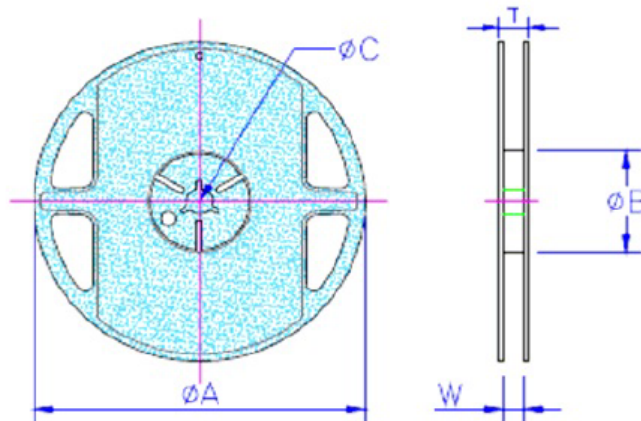
■ Packaging

Packaging Quantity

Unit:mm

Type	Thickness/Symbol		Packaging (7"Reel)	
			Paper Tape	Plastic Tape
0201	0.30±0.03	L	15K	-
0402	0.50±0.05	N	10K	-
0603	0.80±0.07	S	4K	-
	0.80+0.15/-0.10	X	4K	-
0805	0.60±0.10	A	4K	-
	0.80±0.10	B	4K	-
	0.85±0.10	T	4K	-
	1.25±0.10	D	-	3K
	1.25±0.20	I	-	3K
1206	0.80±0.10	B	4K	-
	0.95±0.10	C	-	3K
	1.15±0.15	J	-	3K
	1.25±0.10	D	-	3K
	1.60±0.20	G	-	2K
	1.60+0.30/-0.10	P	-	2K
1210	0.95±0.10	C	-	3K
	1.25±0.10	D	-	3K
	1.60±0.20	G	-	2K
	2.00±0.20	K	-	1K
	2.50±0.30	M	-	1K
1808	1.25±0.10	D	-	2K
	2.00±0.20	K	-	1K
1812	1.25±0.10	D	-	1K
	2.00±0.20	K	-	1K
	2.50±0.30	M	-	0.5K
0612	0.80±0.10	B	4K	-

Tape and Reel



Unit:mm

Type	Chip Size							
	0201	0402	0603	0805	1206/0612	1210	1808	1812
ΦC	13.0±1.0	13.0±1.0	13.0±1.0	13.0±1.0	13.0±1.0	13.0±1.0	13.0±1.0	13.0±1.0
W	9.0±1.0	9.0±1.0	9.0±1.0	9.0±1.0	9.0±1.0	9.0±1.0	13.5±1.0	13.5±1.0
ΦA	178±1.0(7")	178±1.0(7")	178±1.0(7")	178±1.0(7")	178±1.0(7")	178±1.0(7")	178±1.0(7")	178±1.0(7")
ΦB	60.5±1.0(7")	60.5±1.0(7")	60.5±1.0(7")	60.5±1.0(7")	60.5±1.0(7")	60.5±1.0(7")	80.0±1.0(7")	80.0±1.0(7")