

Data Sheet

Customer:

Product: Multilayer Ceramic Chip Capacitor

Sizes.: 0201/0402/0603/0805/1206/1210/1808/1812

Issued Date: 16-Jun-17

Edition: REV.A3



VIKING TECH CORPORATION
光韻科技股份有限公司
No.70, Guangfu N. Rd., Hukou
Township, Hsinchu County
303, Taiwan (R.O.C)

TEL:886-3-5972931
FAX:886-3-5972935•886-3-5973494
E-mail:sales@viking.com.tw

VIKING TECH CORPORATION KAOHSIUNG BRANCH
光韻科技股份有限公司高雄分公司
No.248-3, Sin-Sheng Rd., Cian-Jhen Dist., Kaohsiung,
806, Taiwan

TEL:886-7-8217999
FAX:886-7-8228229
E-mail:sales@viking.com.tw

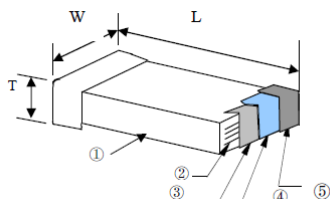
VIKING ELECTRONICS (WUXI) CO., LTD.
光韻電子(無錫)有限公司
No.22 Xixia Road, Machinery & Industry Park,
National Hi-Tech Industrial Development Zone
of Wuxi, Wuxi, Jiangsu Province, China
Zip Code:214028
TEL:86-510-85203339
FAX:86-510-85203667•86-510-85203977
E-mail:china@viking.com.tw

Produced by (QC)	Checked (QC)	Approved by (QC)	Prepared by (Sales)	Accepted by (Customer)
16-Jun-17	16-Jun-17	16-Jun-17	16-Jun-17	
Kris Chen	Ben Chang	Ben Chang		

Multilayer Ceramic Chip Capacitor

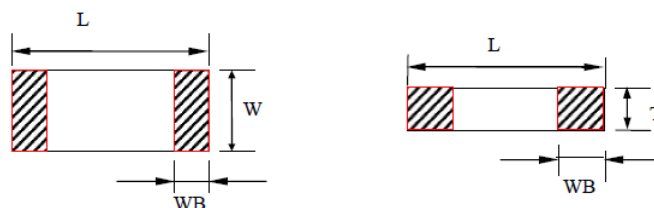
Multilayer Ceramic Chip Capacitor

Construction



①	Ceramic Dielectric	④	Nickel Layer:
②	Inner Electrodes	⑤	Tin Layer
③	Substrate Electrodes		

Dimensions



Unit: mm

Type	Size (Inch)	L	W	T	WB	Special Instructions	Dielectric
01	0201	0.60±0.03	0.30±0.03	0.30±0.03	0.15±0.10	C<220nF	All
		0.60±0.05	0.30±0.05	0.30±0.05	0.15±0.10	C≥220nF	
02	0402	1.00±0.05	0.50±0.05	0.50±0.05	0.25±0.10	C≤0.47uF	Y5V
		1.00±0.15	0.50±0.10	0.50±0.10	0.25±0.10	0.47uF<C≤1uF	
		1.00±0.05	0.50±0.05	0.50±0.05	0.25±0.10	C<1uF	Except Y5V
		1.00±0.15	0.50±0.15	0.50±0.15	0.25±0.10	1uF≤C<10uF	
		1.00±0.20	0.50±0.20	0.50±0.20	0.25±0.10	C≥10uF	
		1.60±0.10	0.80±0.10	0.80±0.10	0.30±0.10	C<10uF	
03	0603	1.60±0.20	0.80±0.20	0.80±0.20	0.30±0.10	C≥10uF	All
		2.00±0.20	1.25±0.20	0.70±0.10	0.50±0.20	C≤0.22uF	Y5V
05	0805	2.00±0.20	1.25±0.20	0.80±0.10	0.50±0.20	0.22uF<C≤2.2uF	
		2.00±0.20	1.25±0.20	1.25±0.20	0.50±0.20	2.2uF<C≤10uF	Except Y5V
		2.00±0.20	1.25±0.20	0.80±0.20	0.50±0.20	C<1uF	
		2.00±0.20	1.25±0.20	1.25±0.20	0.50±0.20	C≥1uF	
		2.00±0.20	1.25±0.20	1.25±0.20	0.50±0.20	C≥1uF	
06	1206	3.20±0.30	1.60±0.30	0.80±0.20	0.60±0.30	C≤10uF	Y5V
		3.20±0.30	1.60±0.30	1.60±0.30	0.60±0.30	C>10uF	
		3.20±0.30	1.60±0.30	0.80±0.20	0.60±0.30	C≤1uF	Except Y5V
		3.20±0.30	1.60±0.30	1.00±0.20	0.60±0.30	1uF<C≤2.2uF	
		3.20±0.30	1.60±0.30	1.25±0.20	0.60±0.30	2.2uF<C<4.7uF	
		3.20±0.30	1.60±0.30	1.60±0.30	0.60±0.30	C≥4.7uF	
10	1210	3.20±0.30	2.50±0.30	≤2.80	0.60±0.30	-	All
08	1808	4.50±0.40	2.00±0.20	≤2.20	0.60±0.30	-	All
12	1812	4.50±0.40	3.20±0.30	≤3.50	0.60±0.30	-	All

Part Numbering

MCF	03	J	T	N	250	3R9
Product Type	Dimensions (L×W)	Capacitance Tolerance	Packaging	Dielectric	Voltage (VDCW)	Capacitance
	01: 0201 02: 0402 03: 0603 05: 0805 06: 1206 10: 1210 08: 1808 12: 1812	A: ±0.05pF (Cap≤10pF) B: ±0.1pF (Cap≤10pF) C: ±0.25pF (Cap≤10pF) D: ±0.5pF (Cap≤10pF) F: ±1% G: ±2% J: ±5% K: ±10% M: ±20% Z: +80/-20%	T: Taping 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: 3.9pF 150: 15pF 181: 180pF 225: 2.2μF 106: 10μF

■ General Capacitance & Voltage

Capacitance & Voltage (NPO)

Dielectric		NPO													
EIA	Size	0402				0603					0805				
Code	VDCW	10V	16V	25V	50V	10V	16V	25V	50V	100V	10V	16V	25V	50V	100V
0R1	0.1pF														
0R2	0.2														
0R3	0.3														
0R4	0.4														
0R5	0.5														
0R6	0.6														
0R7	0.7														
0R8	0.8														
0R9	0.9														
1R0	1.0														
1R2	1.2														
1R5	1.5														
1R8	1.8														
2R0	2.0														
2R2	2.2														
2R7	2.7														
3R0	3.0														
3R3	3.3														
3R9	3.9														
4R0	4.0														
4R7	4.7														
5R0	5.0														
5R6	5.6														
6R0	6.0														
6R8	6.8														
7R0	7.0														
8R0	8.0														
8R2	8.2														
9R0	9.0														
100	10pF														
120	12														
150	15														
180	18														
220	22														
270	27														
330	33														
390	39														
470	47														
560	56														
680	68														
820	82														
101	100pF														
121	120														
151	150														
181	180														
221	220														
271	270														
331	330														
391	390														
471	470														
561	560														
681	680														
821	820														
102	1000pF														
122	1200														
152	1500														
182	1800														
222	2200														
272	2700														
332	3300														
392	3900														
472	4700														
562	5600														
682	6800														
822	8200														
103	0.01uF														
123	0.012														
153	0.015														
183	0.018														
223	0.022														

Capacitance & Voltage (NPO)

Dielectric		NPO													
EIA	Size	1206					1210					1812			
Code	VDCW	10V	16V	25V	50V	100V	10V	16V	25V	50V	100V	16V	25V	50V	100V
1R2	1.2 pF														
1R5	1.5														
1R8	1.8														
2R2	2.2														
2R7	2.7														
3R3	3.3														
3R9	3.9														
4R7	4.7														
5R6	5.6														
6R8	6.8														
8R2	8.2														
100	10pF														
120	12														
150	15														
180	18														
220	22														
270	27														
330	33														
390	39														
470	47														
560	56														
680	68														
820	82														
101	100pF														
121	120														
151	150														
181	180														
221	220														
271	270														
331	330														
391	390														
471	470														
561	560														
681	680														
821	820														
102	1000pF														
122	1200														
152	1500														
182	1800														
222	2200														
272	2700														
332	3300														
392	3900														
472	4700														
562	5600														
682	6800														
822	8200														
103	0.01uF														
123	0.012														
153	0.015														
183	0.018														
223	0.022														
273	0.027														
333	0.033														
393	0.039														
473	0.047														
563	0.056														
683	0.068														
823	0.082														
104	0.10uF														

Capacitance & Voltage (X7R)

Dielectric		X7R																
EIA	Size	0402					0603						0805					
Code	VDCW	6.3V	10V	16V	25V	50V	6.3V	10V	16V	25V	50V	100V	6.3V	10V	16V	25V	50V	100V
101	100pF																	
121	120																	
151	150																	
181	180																	
221	220																	
271	270																	
331	330																	
391	390																	
471	470																	
561	560																	
681	680																	
821	820																	
102	1000pF																	
122	1200																	
152	1500																	
182	1800																	
222	2200																	
272	2700																	
332	3300																	
392	3900																	
472	4700																	
562	5600																	
682	6800																	
822	8200																	
103	0.01μF																	
123	0.012																	
153	0.015																	
183	0.018																	
223	0.022																	
273	0.027																	
333	0.033																	
393	0.039																	
473	0.047																	
563	0.056																	
683	0.068																	
823	0.082																	
104	0.10μF																	
154	0.15																	
224	0.22																	
334	0.33																	
394	0.39																	
474	0.47																	
564	0.56																	
684	0.68																	
824	0.82																	
105	1.0μF																	
225	2.2																	
475	4.7																	
106	10																	

【MCF Series】

Multilayer Ceramic Chip Capacitor



Capacitance & Voltage (X7R)

Dielectric		X7R																
EIA	Size	1206						1210						1812				
Code	VDCW	6.3V	10V	16V	25V	50V	100V	6.3V	10V	16V	25V	50V	100V	10V	16V	25V	50V	100V
151	150 pF																	
181	180																	
221	220																	
271	270																	
331	330																	
391	390																	
471	470																	
561	560																	
681	680																	
821	820																	
102	1000pF																	
122	1200																	
152	1500																	
182	1800																	
222	2200																	
272	2700																	
332	3300																	
392	3900																	
472	4700																	
562	5600																	
682	6800																	
822	8200																	
103	0.01μF																	
123	0.012																	
153	0.015																	
183	0.018																	
223	0.022																	
273	0.027																	
333	0.033																	
393	0.039																	
473	0.047																	
563	0.056																	
683	0.068																	
823	0.082																	
104	0.10μF																	
154	0.15																	
224	0.22																	
334	0.33																	
394	0.39																	
474	0.47																	
564	0.56																	
684	0.68																	
824	0.82																	
105	1.0μF																	
225	2.2																	
475	4.7																	
106	10																	
226	22																	
476	47																	

Capacitance & Voltage (X5R)

Dielectric		X5R																									
EIA	Size	0402					0603					0805				1206					1210						
Code	VDCW	6.3V	10V	16V	25V	50V	6.3V	10V	16V	25V	50V	6.3V	10V	16V	25V	6.3V	10V	16V	25V	50V	6.3V	10V	16V	25V	50V		
104	0.10μF																										
154	0.15																										
224	0.22																										
334	0.33																										
474	0.47																										
684	0.68																										
824	0.82																										
105	1.0μF																										
155	1.5																										
225	2.2																										
335	3.3																										
475	4.7																										
685	6.8																										
106	10μF																										
226	22																										
476	47																										
107	100																										

Capacitance & Voltage (Y5V)

Dielectric		Y5V																																	
EIA	Size	0402					0603					0805						1206						1210						1812					
Code	VDCW	6.3	10	16	25	50	6.3	10	16	25	50	6.3	10	16	25	50	100	6.3	10	16	25	50	100	6.3	10	16	25	50	100	10	16	25	50	100	
103	0.010μF																																		
153	0.015																																		
223	0.022																																		
333	0.033																																		
473	0.047																																		
683	0.068																																		
104	0.10μF																																		
154	0.15																																		
224	0.22																																		
334	0.33																																		
474	0.47																																		
684	0.68																																		
105	1.0μF																																		
225	2.2																																		
475	4.7																																		
106	10μF																																		
226	22μF																																		
476	47μF																																		
107	100μF																																		

■ 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	1000	200	250	500	630	1000	1500 2000	200	250	500	630	1000	1500 2000	500 630	1000	1500	2000	3000	200	250	500 630	1000	1500	2000	3000
0R5	0.5pF																														
1R0	1.0																														
1R2	1.2																														
1R5	1.5																														
1R8	1.8																														
2R2	2.2																														
2R7	2.7																														
3R3	3.3																														
3R9	3.9																														
4R7	4.7																														
5R6	5.6																														
6R8	6.8																														
8R2	8.2																														
100	10pF																														
120	12																														
150	15																														
180	18																														
220	22																														
270	27																														
330	33																														
390	39																														
470	47																														
560	56																														
680	68																														
820	82																														
101	100pF																														
121	120																														
151	150																														
181	180																														
221	220																														
271	270																														
331	330																														
391	390																														
471	470																														
561	560																														
681	680																														
821	820																														
102	1000pF																														
122	1200																														
152	1500																														
182	1800																														
222	2200																														
272	2700																														
332	3300																														
392	3900																														
472	4700																														
562	5600																														
682	6800																														

Capacitance & Voltage (X7R 200V~3KV)

Dielectric		X7R																						
EIA	Size	0603	0805			1206					1210				1808				1812					
Code	VDCW	200V 250V	200V	250V	500V 630V	200V 250V	500V 630V	1000V	1500V	2000V	200V 250V	500V 630V	1000V	1500V 2000V	500V 630V	1000V	1500V 2000V	3000V	200V 250V	500V 630V	1000V	1500V 2000V	3000V	
101	100pF																							
121	120																							
151	150																							
181	180																							
221	220																							
271	270																							
331	330																							
391	390																							
471	470																							
561	560																							
681	680																							
821	820																							
102	1000pF																							
122	1200																							
152	1500																							
182	1800																							
222	2200																							
272	2700																							
332	3300																							
392	3900																							
472	4700																							
562	5600																							
682	6800																							
822	8200																							
103	0.010μF																							
123	0.012																							
153	0.015																							
183	0.018																							
223	0.022																							
273	0.027																							
333	0.033																							
393	0.039																							
473	0.047																							
563	0.056																							
683	0.068																							
823	0.082																							
104	0.10μF																							
124	0.12																							
154	0.15																							
184	0.18																							
224	0.22																							
274	0.27																							
334	0.33																							
394	0.39																							
474	0.47																							
564	0.56																							

Capacitance & Voltage (Y5V 200V~250V)

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

■ Ultra-small 0201 Capacitors

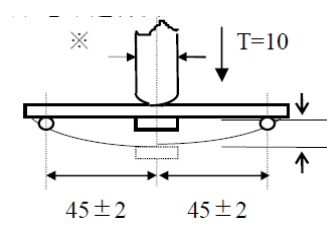
Capacitance & Voltage

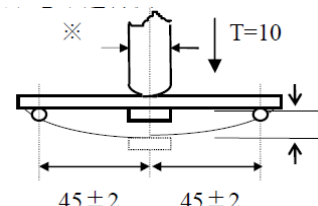
EIA	Size	0201		
Dielectric		NPO		
Code	VDCW	16V	25V	50V
0R1	0.1pF			
0R2	0.2			
0R3	0.3			
0R4	0.4			
0R5	0.5			
0R6	0.6			
0R7	0.7			
0R8	0.8			
0R9	0.9			
1R0	1.0			
1R2	1.2			
1R5	1.5			
1R8	1.8			
2R2	2.2			
2R7	2.7			
3R0	3.0			
3R3	3.3			
3R9	3.9			
4R0	4.0			
4R7	4.7			
5R0	5.0			
5R6	5.6			
6R0	6.0			
6R8	6.8			
7R0	7.0			
8R2	8.2			
9R0	9.0			
100	10			
120	12			
150	15			
180	18			
220	22			
270	27			
330	33			
390	39			
470	47			
560	56			
680	68			
820	82			
101	100			

EIA	Size	0201					
Dielectric		X7R				X5R	
Code	VDCW	6.3V	10V	16V	25V	6.3V	10V
101	100pF						
121	120						
151	150						
181	180						
221	220						
271	270						
331	330						
391	390						
471	470						
561	560						
681	680						
821	820						
102	1000						
122	1200						
152	1500						
182	1800						
222	2200						
272	2700						
332	3300						
392	3900						
472	4700						
562	5600						
682	6800						
822	8200						
103	0.010μF						
153	0.015						
223	0.022						
273	0.027						
333	0.033						
393	0.039						
473	0.047						
563	0.056						
683	0.068						
823	0.082						
104	0.100						
224	0.220						
474	0.470						
105	1μF						

Multilayer Ceramic Chip Capacitor

■Environmental Characteristics

Item	Requirement							Test Method		
Capacitance	Should be within the specified tolerance							NPO: (Class I) Cap≤ 1000pF 1.0±0.2Vrms, 1MHz±10% Cap>1000pF 1.0±0.2Vrms, 1KHz±10% X7R, X5R, Y5V: (Class II) Cap≤ 10uF 1.0±0.2Vrms, 1KHz±10% Cap>10uF 0.5±0.1Vrms, 120Hz±10%		
(DF, tanδ) Dissipation Factor	NPO (Class I)	DF						Capacitance	Measuring Frequency	Measuring Voltage
		≤0.56%						Cr < 5 pF	1MHz±10%	1.0±0.2Vrms
		1.5[(150/Cr)+7]×10-4						5pF≤Cr<50 pF		
		≤0.15%						50pF≤Cr≤1000 pF		
		≤0.15%						> 1000 pF	1KHz±10%	
	X7R, X5R,Y5V: (Class II)	X7R X5R (≥0402)	≥50V ≤2.5%	25V ≤3.5%(C<0.47uF) ≤10.0%(C≥0.47uF)	16V ≤5%(C<0.15uF) ≤10.0%(C≥0.15uF)	10V ≤5%(C<0.15uF) ≤10.0%(C≥0.15uF)	6.3V	Cap≤ 10uF 1.0±0.2Vrms, 1KHz±10% Cap>10uF 0.5±0.1Vrms, 120Hz±10%		
		X7R X5R (<0402)	≤3.5%	≤5.0%	≤5.0%(C<0.047uF) ≤10.0%(C≥0.047uF)	≤7.5%(C<0.047uF) ≤10.0%(C≥0.047uF)				
		Y5V	≥25V		16V	10V	6.3V			
≤7.0%(C<1.0uF) ≤9.0%(C≥1.0uF)			≤15%	≤15%	≤15%					
Insulation Resistance	NPO (Class I)	C≤10 nF, Ri≥50000MΩ C > 10 nF, Ri• CR≥500S						Measuring Voltage: Rated Voltage (Max 500V) Duration: 60±5s Test Humidity: ≤75% Test Temperature: 25℃±5℃ Test Current: ≤50mA		
	X7R, X5R: (Class II)	C≤25 nF, Ri≥10000MΩ C > 25 nF, Ri• CR > 100S								
	Y5V (Class II)	C≤25 nF, Ri≥4000MΩ C > 25 nF, Ri• CR > 100S								
Dielectric Withstanding Voltage	No breakdown or damage							Measuring Voltage: Class I :300% Rated voltage Class II :250% Rated voltage Duration: 1 ~ 5s Charge/ Discharge Current: 50mA max. (This method excludes high-voltage MLCC)		
Solderability	At least 95% of the terminal electrode is covered by new solder. Visual Appearance: No visible damage.							Preheating conditions:80 to 120℃ ; 10~30s.		
								Solder Temperature: 235±5℃ (Sn/Pb:63/37) Duration: 2±0.5s	Solder Temperature: 245±5℃ (Lead-free) Duration: 2±0.5s	
Resistance to Soldering Heat	Item	NPO to SL		X7R / X5R		Y5V		Preheating conditions: 100 to 200℃ ; 10±2min. Solder Temperature: 265±5℃ Duration: 10±1s Clean the capacitor with solvent and examine it with a 10X(min.) microscope. Recovery Time: 24±2h Recovery condition: Room temperature		
	ΔC/C	≤±0.5% or ±0.5PF whichever is larger		-5~+10%		-10~+20%				
	DF	Same to initial value								
	IR	Same to initial value								
Resistance to Flexure of Substrate (Bending Strength)	Appearance : No visible damage. At least 95% of the terminal electrode is covered by new solder.							Test Board: Al2O3 or PCB Warp: 1mm Speed: 0.5mm/sec. Unit: mm The measurement should be made with the board in the bending position. 		
	Appearance: No visible damage ΔC/C: ≤±10%									



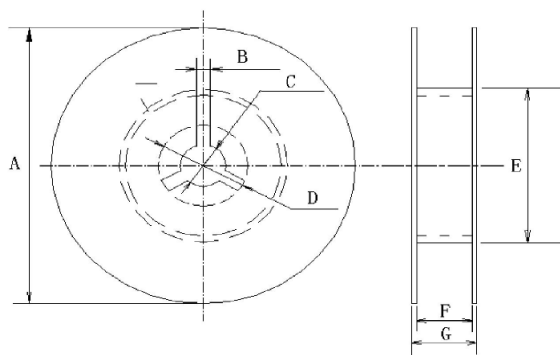
Item	Requirement	Test Method															
Termination Adhesion	No visible damage	Applied Force: 5N Duration: 10±1S															
Temperature Cycle	NPO: $\Delta C/C: \leq \pm 1\%$ or $\pm 1\text{pF}$, whichever is larger. X7R/X5R: $\Delta C/C: \leq \pm 10\%$ Y5V: $\Delta C/C: \leq \pm 20\%$	Preheating conditions: up-category temperature, 1h Recovery time: 24±1h Initial Measurement Cycling Times: 5 times, 1 cycle, 4 steps: <table border="1"> <thead> <tr> <th>Step</th><th>Temp.(°C)</th><th>Time(min)</th></tr> </thead> <tbody> <tr> <td>1</td><td>Low- category temp NPO/X7R/X5R : -55 Y5V: -25</td><td>30±3</td></tr> <tr> <td>2</td><td>Normal temp. (+20)</td><td>2-3</td></tr> <tr> <td>3</td><td>Up- category temp NPO/X7R/ : -125 X5R /Y5V: -85</td><td>30±3</td></tr> <tr> <td>4</td><td>Normal temp. (+20)</td><td>2-3</td></tr> </tbody> </table> Recovery time after test: 24±2h	Step	Temp.(°C)	Time(min)	1	Low- category temp NPO/X7R/X5R : -55 Y5V: -25	30±3	2	Normal temp. (+20)	2-3	3	Up- category temp NPO/X7R/ : -125 X5R /Y5V: -85	30±3	4	Normal temp. (+20)	2-3
Step	Temp.(°C)	Time(min)															
1	Low- category temp NPO/X7R/X5R : -55 Y5V: -25	30±3															
2	Normal temp. (+20)	2-3															
3	Up- category temp NPO/X7R/ : -125 X5R /Y5V: -85	30±3															
4	Normal temp. (+20)	2-3															
Moisture Resistance	NPO: $\Delta C/C: \leq \pm 2\%$ or $\pm 1\text{pF}$, whichever is larger. X7R/X5R: $\Delta C/C: \leq \pm 10\%$ Y5V: $\Delta C/C: \leq \pm 30\%$ DF: Not more than twice of initial value. IR: NPO: $R_i \geq 2500\text{M}\Omega$ 或 $R_i \cdot CR \geq 25\text{S}$ whichever is smaller X7R/X5R/Y5V: $R_i \geq 1000\text{M}\Omega$ 或 $R_i \cdot CR \geq 25\text{S}$ whichever is smaller. Appearance: No visible damage	Temperature : 40±2°C Humidity : 90~95%RH Duration : 500h Recovery conditions : Room temperature Recovery Time : 24h (Class1) or 48h (Class2)															
Life Test	NPO: $\Delta C/C: \leq \pm 2\%$ or $\pm 1\text{pF}$, whichever is larger. X7R/X5R $\Delta C/C: \leq \pm 20\%$ Y5V: $\Delta C/C: \leq \pm 30\%$ DF: Not more than twice of initial value. IR: NPO: $R_i \geq 4000\text{M}\Omega$ 或 $R_i \cdot CR \geq 40\text{S}$ whichever is smaller X7R/X5R/Y5V: $R_i \geq 2000\text{M}\Omega$ 或 $R_i \cdot CR \geq 50\text{S}$ whichever is smaller. Appearance: No visible damage	Low-Voltage ($\leq 100\text{V}$) Applied Voltage: 1.5 × Rated Voltage Duration: 1000h Temperature : 125°C (NPO, X7R) 85°C (X5R, Y5V) Charge/ Discharge Current: 50mA max. Recovery Conditions: Room Temperature Recovery Time: 24h (Class 1), or 48h (Class2)															
Middle & high voltage Life Test	NPO: $\Delta C/C: \leq \pm 2\%$ or $\pm 1\text{pF}$, whichever is larger. X7R/X5R $\Delta C/C: \leq \pm 20\%$ Y5V: $\Delta C/C: \leq \pm 30\%$ DF: Not more than twice of initial value. IR: NPO: $R_i \geq 4000\text{M}\Omega$ 或 $R_i \cdot CR \geq 40\text{S}$ whichever is smaller X7R/X5R/Y5V: $R_i \geq 2000\text{M}\Omega$ 或 $R_i \cdot CR \geq 50\text{S}$ whichever is smaller. Appearance: No visible damage	Applied Voltage: 100V≤Rated Voltage < 500V : 2 Multiple 500V≤Rated Voltage≤1000V : 1.5 Multiple > 1000V Rated Voltage : 1.2 Multiple Duration: 1000h Charge/ Discharge Current: 50mA max. Temperature : 125°C (NPO X7R) ; 85°C (X5R, Y5V) Recovery Conditions: Room Temperature Recovery Time: 24h (Class 1), or 48h (Class2)															

■ Packaging

Packaging Quantity

Type	Packaging (7" Reel)	
	Paper tape	Plastic tape
0201	15K	-
0402	10K	-
0603	4K	-
0805	4K	2K or 3K
1206	4K	T ≤ 1.35mm 3K T > 1.35mm 2K
1210	-	T ≤ 1.80mm 2K T > 1.80mm 1K
1808	-	2K
1812	-	T ≤ 1.85mm 1K T > 1.85mm 0.5K

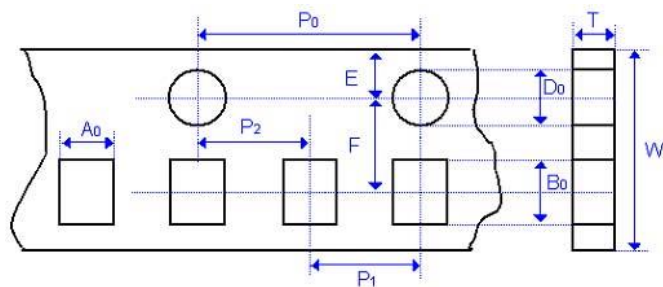
Tape and Reel



Unit: mm

Type	A	B	C	D	E	F	G
0603	178±2.0(7")	3.0	13.0±0.5	21.0±0.8	50 or more	10.0±1.5	12 max
0805	178±2.0(7")	3.0	13.0±0.5	21.0±0.8	50 or more	10.0±1.5	12 max
1206	178±2.0(7")	3.0	13.0±0.5	21.0±0.8	50 or more	10.0±1.5	12 max
1210	178±2.0(7")	3.0	13.0±0.5	21.0±0.8	50 or more	10.0±1.5	12 max
1808	178±2.0(7")	3.0	13.0±0.5	21.0±0.8	50 or more	10.0±1.5	12 max
1812	178±2.0(7")	3.0	13.0±0.5	21.0±0.8	50 or more	10.0±1.5	12 max

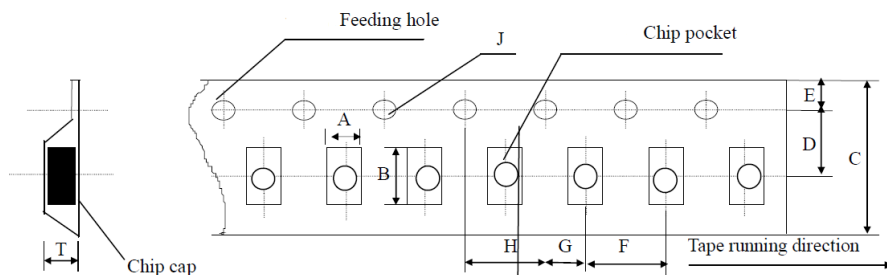
Paper Tape Size Specification



Unit: mm

Type	0201	0402	0603	0805	1206
A ₀	0.37±0.10	0.65±0.10	1.10±0.10	1.45±0.15	1.80±0.20
B ₀	0.67±0.10	1.15±0.10	1.90±0.10	2.30±0.15	3.40±0.20
T	0.80 Below	0.80 Below	1.10 Max	1.10 Max	1.10 Max
W	8.00±0.10	8.00±0.10	8.00±0.10	8.00±0.15	8.00±0.20
P ₀	4.00±0.10	4.00±0.10	4.00±0.10	4.00±0.10	4.00±0.10
P ₁	2.00±0.05	2.00±0.05	2.00±0.10	2.00±0.10	2.00±0.10
P ₂	2.00±0.05	2.00±0.05	4.00±0.05	4.00±0.10	4.00±0.10
D ₀	1.5-0/+0.10	1.5-0/+0.10	1.5-0/+0.10	1.5-0/+0.10	1.5-0/+0.10
E	1.75±0.05	1.75±0.05	1.75±0.05	1.75±0.05	1.75±0.10
F	3.50±0.05	3.50±0.05	3.50±0.05	3.50±0.05	3.50±0.05

Plastic Tape Size Specification



Unit: mm

Type	0805	1206	1210	1808	1812
A	1.55±0.20	1.95±0.20	2.70±0.10	2.20±0.10	3.66±0.10
B	2.35±0.20	3.60±0.20	3.42±0.10	4.95±0.10	4.95±0.10
C	8.00±0.20	8.00±0.20	8.00±0.10	12.00±0.10	12.00±0.10
D	3.50±0.05	3.50±0.05	3.50±0.05	5.50±0.05	5.50±0.05
E	1.75±0.10	1.75±0.10	1.75±0.10	1.75±0.10	1.75±0.10
F	4.00±0.10	4.00±0.10	4.00±0.10	4.00±0.10	8.00±0.10
G	2.00±0.10	2.00±0.10	2.00±0.05	2.00±0.05	2.00±0.05
H	4.00±0.10	4.00±0.10	4.00±0.10	4.00±0.10	4.00±0.10
J	1.5-0/+0.10	1.5-0/+0.10	1.5-0/+0.10	1.5-0/+0.10	1.5-0/+0.10
T	1.50 Max	1.85 Max	3.20 Max	3.00 Max	4.00 Max