

STACKED CHIP TYPE METALLIZED POLYPHENYLENE SULFIDE ^{Type}CHA FILM CAPACITOR

Features

- Suitable for flow and reflow soldering.
- Small size, Light weight type and applicable for wide range capacitance.
- Flat capacitance change and small tangent of loss angle for temperature and frequency.
- Applicable for wide range temperature. (-55°C to +125°C)

Specifications

Temp range	-55 to +125°C	Insulation resistance	3,000MΩ or more
Voltage	16V.d.c, 50V.d.c	Endurance	125°C W.V. × 125%, 1000hr △C/C ±2% within tanδ 0.0066 or less IR 1,000MΩ or more
Capacitance	16V.d.c. 0.00010 to 0.10μF(E-12) 50V.d.c. 0.00010 to 0.022μF	Damp heat	85°C 85%RH W.V. 500hr △C/C ±10% within tanδ 0.012 or less IR 10MΩ or more
Cap. tolerance	±2%(G), ±5%(J)		
Tangent of loss angle	0.006 or less (at 1kHz)		

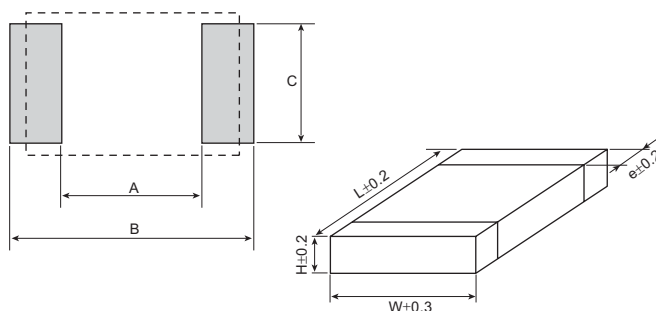
For a pitch space(F) of the taping specification, refer to "TAPING DIMENSIONS"

Dimensions(mm)

Capacitors Code	Cap(μF)	CHA 16V.dc				CHA 50V.dc			
		L	W	H	e	L	W	H	e
101	0.00010	2.0	1.25	0.9	0.35	2.0	1.25	0.9	0.35
121	0.00012	2.0	1.25	0.9	0.35	2.0	1.25	0.9	0.35
151	0.00015	2.0	1.25	0.9	0.35	2.0	1.25	0.9	0.35
181	0.00018	2.0	1.25	0.9	0.35	2.0	1.25	0.9	0.35
221	0.00022	2.0	1.25	0.9	0.35	2.0	1.25	0.9	0.35
271	0.00027	2.0	1.25	0.9	0.35	2.0	1.25	0.9	0.35
331	0.00033	2.0	1.25	0.9	0.35	2.0	1.25	0.9	0.35
391	0.00039	2.0	1.25	0.9	0.35	2.0	1.25	0.9	0.35
471	0.00047	2.0	1.25	0.9	0.35	2.0	1.25	0.9	0.35
561	0.00056	2.0	1.25	0.9	0.35	2.0	1.25	0.9	0.35
681	0.00068	2.0	1.25	0.9	0.35	2.0	1.25	0.9	0.35
821	0.00082	2.0	1.25	0.9	0.35	2.0	1.25	0.9	0.35
102	0.0010	2.0	1.25	0.9	0.35	2.0	1.25	0.9	0.35
122	0.0012	2.0	1.25	0.9	0.35	2.0	1.25	0.9	0.35
152	0.0015	2.0	1.25	0.9	0.35	2.0	1.25	0.9	0.35
182	0.0018	2.0	1.25	0.9	0.35	2.0	1.25	0.9	0.35
222	0.0022	2.0	1.25	0.9	0.35	2.0	1.25	0.9	0.35
272	0.0027	2.0	1.25	0.9	0.35	2.0	1.25	0.9	0.35
332	0.0033	2.0	1.25	0.9	0.35	3.2	1.6	1.1	0.35
392	0.0039	2.0	1.25	0.9	0.35	3.2	1.6	1.1	0.35
472	0.0047	2.0	1.25	0.9	0.35	3.2	1.6	1.1	0.35
562	0.0056	2.0	1.25	0.9	0.35	3.2	1.6	1.1	0.35
682	0.0068	2.0	1.25	0.9	0.35	3.2	1.6	1.1	0.35
822	0.0082	2.0	1.25	1.1	0.35	3.2	1.6	1.1	0.35
103	0.010	2.0	1.25	1.2	0.35	3.2	1.6	1.1	0.35
123	0.012	3.2	1.6	0.9	0.35	3.2	2.5	1.1	0.35
153	0.015	3.2	1.6	0.9	0.35	3.2	2.5	1.1	0.35
183	0.018	3.2	1.6	0.9	0.35	3.2	2.5	1.2	0.35
223	0.022	3.2	1.6	0.9	0.35	3.2	2.5	1.6	0.35
273	0.027	3.2	1.6	1.1	0.35	3.2	2.5	1.6	0.35
333	0.033	3.2	1.6	1.1	0.35	3.2	2.5	2.0	0.35
393	0.039	3.2	1.6	1.5	0.35	3.2	2.5	2.1	0.35
473	0.047	3.2	1.6	1.5	0.35	4.8	3.3	1.4	0.35
563	0.056	3.2	2.5	1.4	0.35	4.8	3.3	1.4	0.35
683	0.068	3.2	2.5	1.5	0.35	4.8	3.3	1.6	0.35
823	0.082	3.2	2.5	1.6	0.35	4.8	3.3	1.8	0.35
104	0.10	3.2	2.5	1.9	0.35	4.8	3.3	2.1	0.35
124	0.12					6.0	4.1	1.8	0.35
154	0.15					6.0	4.1	2.1	0.35
184	0.18					6.0	4.1	2.5	0.35
224	0.22					6.0	4.1	2.9	0.35
274	0.27								
334	0.33								
394	0.39								
474	0.47								
564	0.56								
684	0.68								
824	0.82								
105	1.0								

Recommended landing dimensions

Dimensions L × W	Recommended landing dimensions(mm)		
	A	B	C
2.0×1.25	0.8	2.4	1.1
3.2×1.6	1.8	3.6	1.4
3.2×2.5	1.8	3.6	2.3
4.8×3.3	2.6	6.6	3.0
6.0×4.1	3.8	7.8	3.8

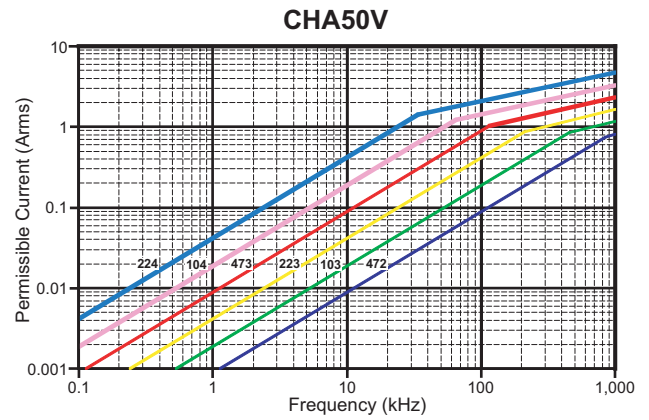
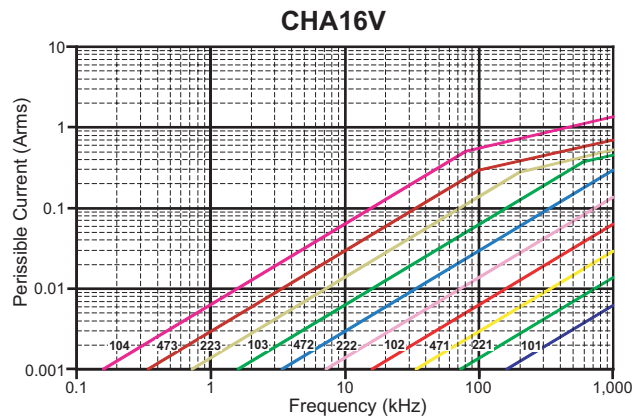


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STACKED CHIP TYPE METALLIZED POLYPHENYLENE SULFIDE FILM CAPACITOR

Type **CHA**

Characteristics of permissible current to frequency



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PART NUMBER SEQUENCE

①	②	Internal code	③	④	⑤	Model code (Standard "0000")	⑥
Series code	Lead configuration code		Rated voltage code	Capacitance tolerance code	Nominal capacitance value code		Lead dimensions code / Packaging configuration code

②Lead configuration code		⑥Lead dimension code / Packing configuration code(*2)				
Code	Lead configuration	Typical code example				Description
*1	Straight, long leads, bulk	0000				A code for products with straight leads (bulk packaging) is "0000".
C	Straight, long leads, bulk	0050				For products with cut leads, dimension codes have been set according to length
F	Single formed leads, bulk	Lead spacing (mm)	Code	Lead spacing (mm)	Code	Each code stands for the spacing between leads of a product with formed leads. (bulk)
		5.0	0050(*3)	17.5	0175	
		7.5	0075	20.0	0200	
		10.0	0100	22.5	0225	
		12.5	0125	25.0	0250	
		15.0	0150	27.5	0275	
S	Formed leads, taped					
V	Formed leads, taped	Formed leads type	Style	Code	A code stands for the configuration taping. (Ammo packaging) For more information, see a taping specification for automatic mounting.	
			1	0200(*4)		
			2	D200		
			3	D210		
			4	D220		
			5	0200		
	6	0200				
	SMD, taped	0400				A code stands for the configuration taping. For more information, see a taping specification for automatic mounting.

*1 A blank stands for straight leads.

*2 Depending on types, there might be exception out of this role. Confirm when ordering.

*3 A code for Cap 471 to 363 of AMC series with model code of "0000" is defined as "I050".

*4 A code for Cap 471 to 363 of AMC series with model code of "0000" is defined as "A210".

③Rated voltage code(V.d.c, V.a.c)

Voltage	25	50	100	125	200	250	275	315	400	450	630	800	1000	1250	1600
code	0025	0050	0100	0125	0200	0250	0275	0315	0400	0450	0630	0800	1000	1250	1600

④Capacitance tolerance code

Code	F	G	H	J	K	M
Capacitance tolerance(%)	±1	±2	±3	±5	±10	±20

⑤Nominal capacitance value code

This is expressed in pF by using a three figures.

The first two figures : Significant figures of nominal capacitance value.

The third figures : The number of zeros to follow the significant figures.

Example

1) When ordering capacitors with single-formed leads of AMZ 50V, 0.10μF±5%, taped and ammo-packaged.

A	M	Z	V		0	0	5	0	J	1	0	4	0	0	0	0	0	2	0	0
①	②	Internal use			③		④		⑤		Model code				⑥					

2) When ordering capacitors with single-formed leads of 15.0mm of MMC 250V, 1.0μF±1.0%, in bulk.

M	M	C	F		0	2	5	0	K	1	0	5	0	0	0	0	0	0	1	5	0
①	②	Internal use			③		④		⑤		Model code				⑥						

3) When ordering capacitors with straight leads of MMT 50V 0.1μF±5%, in bulk.

M	M	T			0	0	5	0	J	1	0	4	0	0	0	0	0	0	0	0	0
①	②	Internal use			③		④		⑤		Model code				⑥						

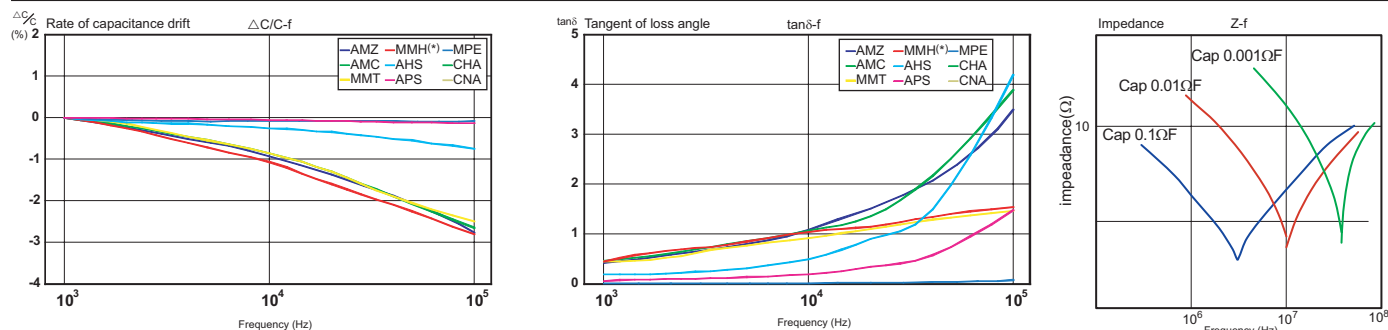
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THE CHARACTERISTICS OF CAPACITORS

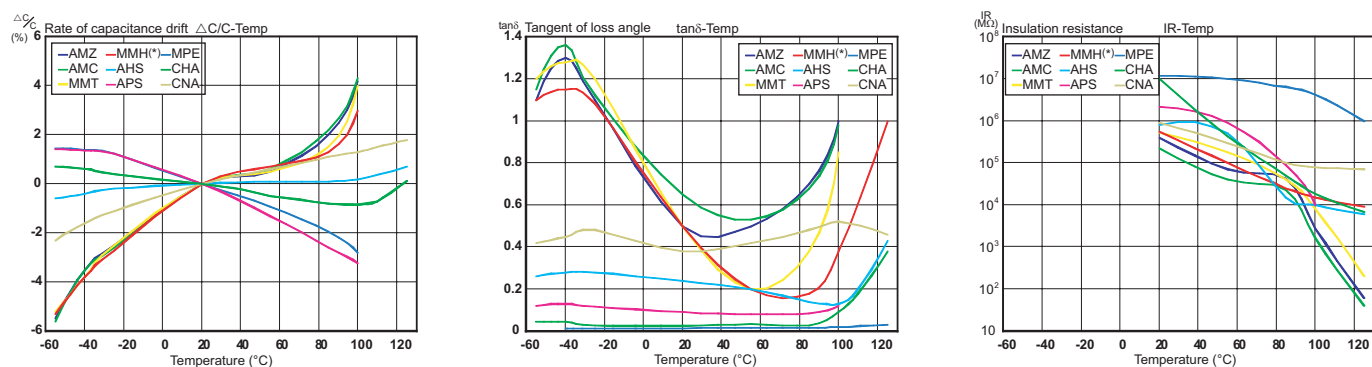
The characteristics vary according to ratings of capacitance, voltage and so on.

Examples of the characteristics of capacitors with a capacitance value of 0.1 F are shown below.

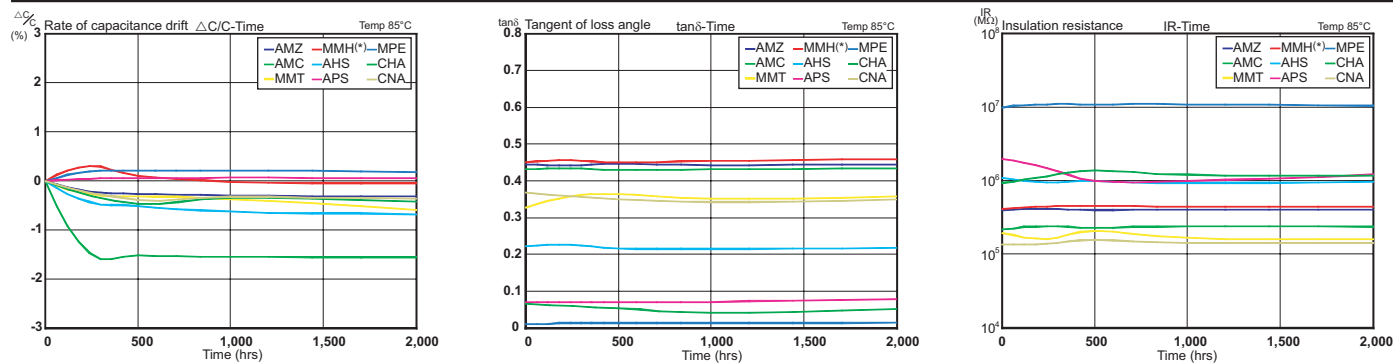
Frequency Characteristics



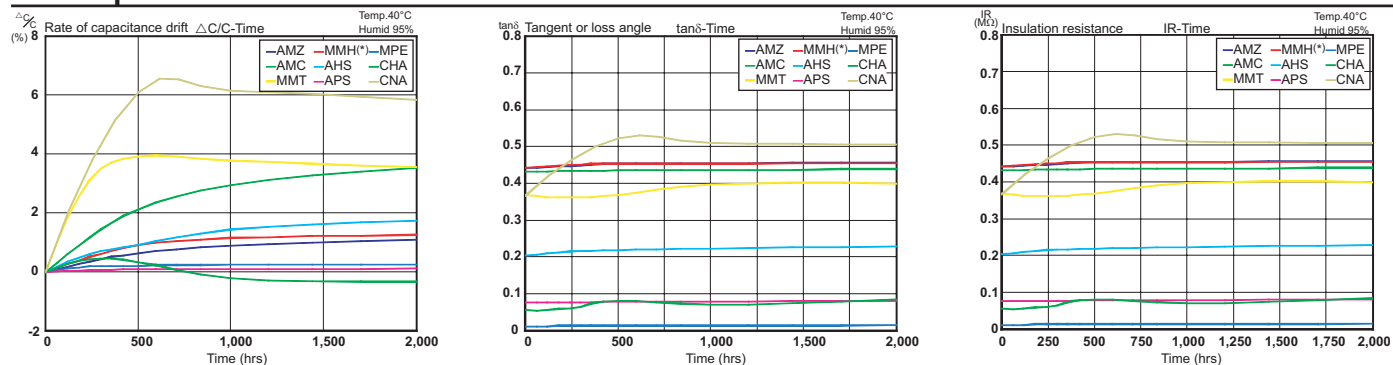
Temperature characteristics



Hight-temperature endurance with load



Damp heat endurance with load



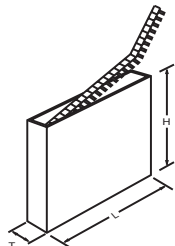
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SPECIFICATIONS OF TAPING FOR AUTOMATIC INSERTION

Standard-taping dimensions(mm)

Type	WV	Straight Lead Type	Formed Lead Type					
			Style1	Style2	Style3	Style4	Style5	Style6
AMC	50	471 to 104	471 to 104					
AMZ	50	101 to 154	101 to 154					
	100	101 to 104	101 to 104	114 to 184	204 to 394	474	114 to 184	204 to 474
	250		102 to 333	393 to 683		823 to 184	393 to 683	823 to 184
	400		102 to 103	123 to 333		393 to 823	123 to 333	393 to 823
AMF	50		101 to 154					
APS	100		101 to 363	393 to 124			393 to 124	
	250		101 to 103					
	400		102 to 103					
AHS	50	271 to 104	271 to 104	114 to 184		204 to 304	114 to 184	204 to 304
	100	181 to 273	181 to 273	333 to 823		104 to 224	333 to 823	104 to 224
MMT	50	103 to 105	103 to 155					
	63	103 to 105	103 to 155					
	100	103 to 105						
	250	103 to 224						
MTF	50		103 to 155					
MMH	100		333 to 474	564 to 105	125 to 225		564 to 105	125 to 225
	250		473 to 683	823 to 224	274 to 684		823 to 224	274 to 684
	400			223 to 823	104 to 394		223 to 823	104 to 394
	630			102 to 393	473 to 124		102 to 393	473 to 124
	1000				102 to 223			102 to 223
	1250				102 to 682			102 to 682
MMC	250		102 to 154	184 to 334	394 to 125		184 to 334	394 to 155
	400/450		102 to 333	393 to 104	124 to 474		393 to 104	124 to 474
	630		102 to 822	103 to 473	563 to 224		103 to 473	563 to 224
MMX	250		102 to 334	394 to 684	394 to 125		394 to 684	824 to 395
	400		102 to 104	124 to 474	124 to 105		124 to 474	564 to 125
	450		104	124 to 474	124 to 105		124 to 474	564 to 125
	630		102 to 473	563 to 224	563 to 394		563 to 224	274 to 564
MMD	125		103 to 683	823 to 224	274 to 474		823 to 224	274 to 474
	250			103 to 473	563 to 184		103 to 473	563 to 224
MML	125		103 to 224	274 to 684	824 to 275		274 to 684	824 to 275
	250		103 to 333	393 to 104	124 to 684		393 to 104	124 to 684
MPE	250			103 to 913	103 to 334		103 to 913	104 to 105
	315			103 to 913	103 to 224		103 to 913	104 to 564
	400/450			103 to 913	103 to 274		103 to 913	104 to 364
	630			103 to 303	103 to 563		103 to 303	333 to 204
	800				102 to 303			102 to 104
	1000				102 to 303			102 to 104
	1250				102 to 163			102 to 513
	1600				102 to 912			102 to 203
NSM	220/250	602						

Packaging style

Ammo Pack		<table><tr><th>L</th><th>H</th><th>T</th></tr><tr><td>330±7</td><td>330±7</td><td>45±7</td></tr><tr><td>330±7</td><td>330±7</td><td>50±7</td></tr><tr><td>330±7</td><td>330±7</td><td>55±7</td></tr></table> For MMT, L is 330±5, H is 355±5, T is 45±5(mm)	L	H	T	330±7	330±7	45±7	330±7	330±7	50±7	330±7	330±7	55±7
L	H	T												
330±7	330±7	45±7												
330±7	330±7	50±7												
330±7	330±7	55±7												

For MMT, L is 330±5, H is 355±5, T is 45±5(mm)

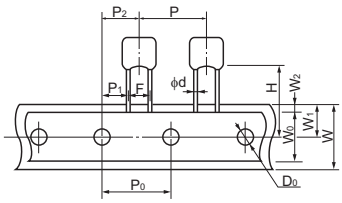
Reel packing available in Style1.

Please contact Nissei for detailed assistance.

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TAPAIING SPECIFICATIONS FOR AUTOMATIC INSERTION

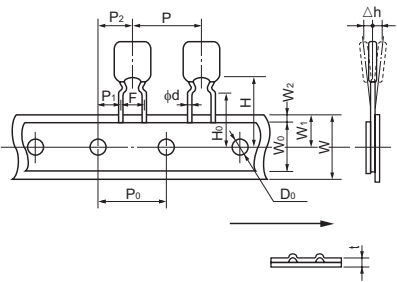
Taping specification by type

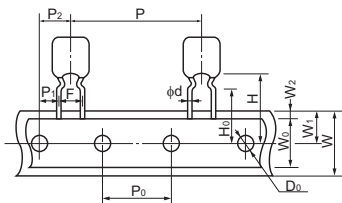
Shape	Straight Lead Type
P	12.7±1.0
P ₀	12.7±0.3
P ₁	4.6 or 3.85±0.7
P ₂	6.35±1.3
φd	See the list of dimensions shown by type.
F	3.5 or 5.0 or 7.5 ^{+0.5} _{-0.2}
△h	0±2.0
W	18.0 ^{+1.0} _{-0.5}
W ₀	5.0 Min.
W ₁	9.0±0.5
W ₂	3.0 Max.
H ₀	—
D ₀	4.0±0.2
t	0.7±0.2
H	18.5±0.5
Style	

*For NSMS H-dimension is 16.0±5 mm.

- For taped products, order in an integral multiple of quantity packaged in a box.
- For bulk (both products with straight leads and formed leads), order in an integral multiple of 200 pieces.

Standard-taping dimensions (mm)

Shape	Formed Lead Type		
	Style 1	Style 2	Style 5
P	12.7±1.0	15.0±1.0	15.0±1.0
P ₀	12.7±0.3	15.0±0.3	15.0±0.3
P ₁	3.85±0.7	5.0±0.7	3.75±0.7
P ₂	6.35±1.3	7.5±1.3	7.5±1.3
φd	See the list of dimensions shown by type.		
F	5.0 ^{+0.8} _{-0.2}	5.0 ^{+0.8} _{-0.2}	7.5 ^{+0.8} _{-0.2}
△h	0±2.0	0±2.0	0±2.0
W	18.0 ^{+1.0} _{-0.5}	18.0 ^{+1.0} _{-0.5}	18.0 ^{+1.0} _{-0.5}
W ₀	5.0 Min.	5.0 Min.	5.0 Min.
W ₁	9.0±0.5	9.0±0.5	9.0±0.5
W ₂	3.0 Max.	3.0 Max.	3.0 Max.
H ₀	16.0±0.5	16.0±0.5	16.0±0.5
D ₀	4.0±0.2	4.0±0.2	4.0±0.2
t	0.7±0.2	0.7±0.2	0.7±0.2
H	21.25 Max.	22.0 Max.	22.0 Max.
Shape			

Shape	Formed Lead Type		
	Style 3	Style 4	Style 6
P	25.4±1.0	30.0±1.0	30.0±1.0
P ₀	12.7±0.3	15.0±0.3	15.0±0.3
P ₁	3.85±0.7	5.0±0.7	3.75±0.7
P ₂	6.35±1.3	7.5±1.3	7.5±1.3
φd	See the list of dimensions shown by type.		
F	5.0 ^{+0.8} _{-0.2}	5.0 ^{+0.8} _{-0.2}	7.5 ^{+0.8} _{-0.2}
△h	0±2.0	0±2.0	0±2.0
W	18.0 ^{+1.0} _{-0.5}	18.0 ^{+1.0} _{-0.5}	18.0 ^{+1.0} _{-0.5}
W ₀	5.0 Min.	5.0 Min.	5.0 Min.
W ₁	9.0±0.5	9.0±0.5	9.0±0.5
W ₂	3.0 Max.	3.0 Max.	3.0 Max.
H ₀	16.0±0.5	16.0±0.5	16.0±0.5
D ₀	4.0±0.2	4.0±0.2	4.0±0.2
t	0.7±0.2	0.7±0.2	0.7±0.2
H	22.0 Max.	22.0 Max.	22.0 Max.
Shape			

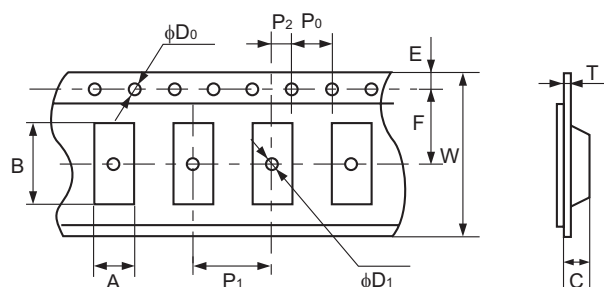
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SPECIFICATIONS OF TAPING FOR AUTOMATIC INSERTION

CHIP Type Taping Dimensions(mm)

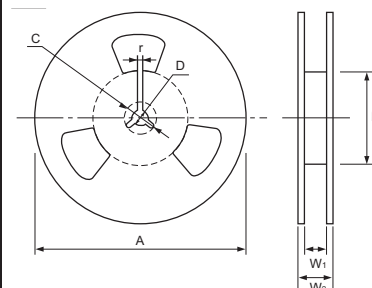
●Taping dimensions of chip type (mm)

Type	WV	Size	Cap	A	B	C	W	F	E	T	P0	P1	P2	d0	d1
CHA	16V.dc	20125	101 to 682	1.45 to 0.1	2.3 to 0.1	1.05±0.1	8.0 to 0.2	3.5±0.05	1.75±0.1	0.25±0.05	4.0±0.1	4.0±0.1	4.0±0.1	1.5+0.1/-0	1.0±0.1
		20125	822,103	1.55 to 0.1		1.3±0.1									↓
		3216	122 to 223	1.9±0.1	3.5 to 0.1	1.1±0.1									1.1±0.1
		3216	273,333	↓		1.3±0.1									↓
		3216	393,473	↓		1.6±0.1									↓
		3225	563 to 823	2.8 to 0.1		1.8±0.1									↓
		3225	104	↓		2.3±0.1									↓
	50V.Dc	20125	101 to 272	1.55 to 0.1	2.3 to 0.1	1.05±0.1									1.0±0.1
		3216	332 to 103	1.9±0.1	3.5 to 0.1	1.3±0.1									1.1±0.1
		3225	123 to 183	2.8 to 0.1		↓									↓
		3225	223,273	↓		1.8±0.1									↓
		3225	333,393	↓		2.3±0.1									↓
		4833	473,563		5.0 to 0.1	1.6±0.1	12.0±0.2	5.5±0.05				8.0±0.1			1.7±0.1
		4833	683,823			1.9±0.1									↓
		4833	104	↓		2.2±0.1									↓
		6041	124	4.55 to 0.1	6.45±0.1	2.0±0.1				0.3±0.05					↓
		6041	154,184	↓		2.6±0.1									↓
		6041	224	↓		3.0±0.1									↓
CNA	100V.dc	3216	102 to 103	1.9±0.1	3.5±0.1	1.3±0.1	8.0±0.2	3.5±0.05		0.25±0.05		4.0±0.1			1.1±0.1
		3225	123 to 183	2.8 to 0.1		↓									↓
		3225	223,273			1.8±0.1									↓
		3225	333,393			2.3±0.1									↓
		4833	473,563		5.0±0.1	1.6±0.1	12.0±0.2	5.5±0.05				8.0±0.1			1.7±0.1
		4833	683			1.9±0.1									↓
		4833	823,104	↓		2.2±0.1									↓
		6041	124	4.55 to 0.1	6.45±0.1	2.0±0.1				0.3±0.05					↓
		6041	154,184	↓		2.6±0.1									↓
		6041	224	↓		3.0±0.1									↓



●Reel dimensions(mm)

Type	WV	Size	Cap	A	B	C	D	r	W1	W2
CHA	16V.dc	20125	101 to 103	180+0/-3	60±1.0	21±0.8	13±0.2	2.0±0.5	9.0±0.5	11.4±1.0
		3216	122 to 473							
		3225	563 to 104							
	50V.dc	20125	101 to 272							
		3216	332 to 103							
		3225	123 to 393							
CNA	100V.dc	4833	473 to 104	330±2.0	80±1.0				13.4±1.0	17.4±1.0
		6041	124 to 224	↓	↓				↓	↓
		3216	102 to 103	180+0/-3	6.0±1.0				9.0±0.5	11.4±1.0
		3225	123 to 393	↓	↓				↓	↓
		4833	473 to 104	330±2.0	80±1.0				13.4±1.0	17.4±1.0



- Specifications of products, materials and other contents stated in the catalog are subject to change without notice.
- When using our capacitors, please consider the application contact Nissei for the any additional technical specifications relating to the limits of our performance characteristics.