



PSA PASSIVE SYSTEM ALLIANCE
WALSIN TECHNOLOGY CORPORATION

Disc Capacitors

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Product Portfolio



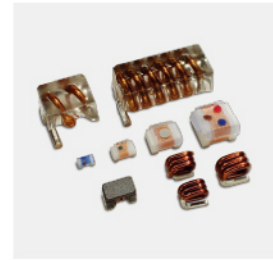
Multilayer Ceramic Capacitors



Chip Resistors



Disc Capacitors



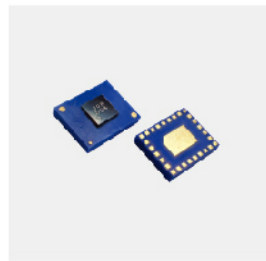
Inductors



RF Filters



Antenna



Antenna Switch & Module



MOV & MLV

IEC-63 Nominal Resistance / Capacitance

E1	100																							
E3	100			220			470																	
E6	100	150	220	330	470	680																		
E12	100	120	150	180	220	270	330	390	470	560	680	820												
E24	100	110	120	130	150	160	180	200	220	240	270	300	330	360	390	430	470	510	560	620	680	750	820	910
E96	100	102	121	124	147	150	178	182	215	221	261	267	316	324	383	392	464	475	562	576	681	698	825	845
	105	107	127	130	154	158	187	191	226	232	274	280	332	340	402	412	487	499	590	604	715	732	866	887
	110	113	133	137	162	165	196	200	237	243	287	294	348	357	422	432	511	523	619	634	750	768	909	931
	115	118	140	143	169	174	205	210	249	255	301	309	365	374	442	453	536	549	649	665	787	806	953	976

E6: $\sqrt[6]{10} \approx 1.46$ E12: $\sqrt[12]{10} \approx 1.21$

E1 series resistance: 1Ω, 10Ω, 100Ω, 1000Ω, 10000Ω, 100000Ω

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*The specifications are subject to change or products in it may be discontinued without advance notice. Please check with our sales representatives or product engineers before ordering.

*This catalog has only typical specifications because there is no space for detailed specifications. Therefore, please approve our product specifications or transact the approval sheet for product specifications before ordering.

CERAMIC CAPACITOR PART NUMBER EXPLANATION

To order, please also specify Pan Overseas Part No. as the following example for SAP system :

YP	102	102	K	060	B	20	C	5	H
Dielectric Code	Voltage Code	Capacitance Code	Tolerance Code	Diameter Code	Lead Style	Length or Packing	Length Tolerance	Pitch	Coating
①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩

① Dielectric Code

CLASS I:		CLASS II:	
CODE	T.C. (ppm/°C)	CODE	T.C. (ΔC%)
SL	SL (-1000 ~ +350) (+20°C to +85°C)	YP	Y5P (±10%)
		ZU	Z5U (+22 ~ -56%)
		ZV	Z5V (+22 ~ -82%)
		YU	Y5U (+22 ~ -56%)
		YV	Y5V (+22 ~ -82%)

② Voltage Code

CODE	WV
500	50 VDC
501	500 VDC
102	1KVDC
202	2KVDC
302	3KVDC
602	6KVDC

③ Capacitance Code

CODE	Capacitance
100	10 pF
101	100 pF
102	1000 pF
472	4700 pF
103	0.01uF

⑤ Diameter Code

CODE	Diameter max
040	Refer to the product diameter D max
050	
060	
070	
080	
090	
100	
110	
120	
130	
140	

⑥ Lead Style-Reference Lead Style

⑦ Packing / Pitch / Lead Length

Taping(ex)	
CODE	Packing & Pitch
AF	Ammo Box & Pitch 15.0 mm
AN	Ammo Box & Pitch 12.7 mm
AM	Ammo Box & Pitch 25.4 mm
Bulk (ex)	
CODE	Length
3E	3.5mm
04	4.0mm
4E	4.5mm
05	5.0mm
20	20.0mm

④ Tolerance Code

CODE	Tolerance
J	± 5%
K	± 10%
M	± 20%
Z	-20 ~ +80 %

⑧ Length Tolerance

CODE	Length Tolerance
A	± 0.5 mm (Only for short kink lead type)
B	± 1.0 mm
C	Min.
D	Tapping & Special Purpose

⑨ Pitch

CODE	Length Pitch
2	2.5±0.8mm
5	5.0±0.8mm (for Bulk)
	5.0+0.8-0.2mm (for Taping)
7	7.5 ± 1mm
0	10.0 ± 1mm

⑩ Coating Type

CODE	Coating
A	Phenolic resin Halogen free and Pb free
H	Epoxy resin Halogen free and Pb free

CERAMIC DISC CAPACITOR:

CLASS I 50V, 100V, 500V, 1KV, 2KV, 3KV, 6KV TEMPERATURE COMPENSATION TYPE

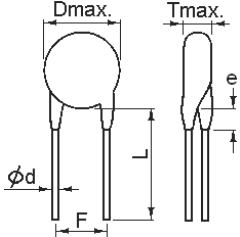
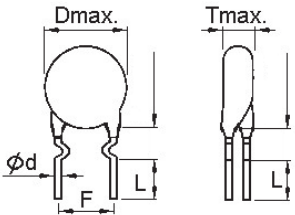
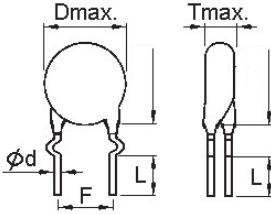
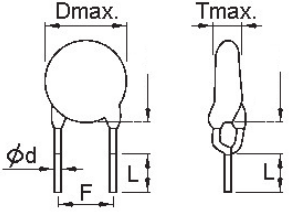
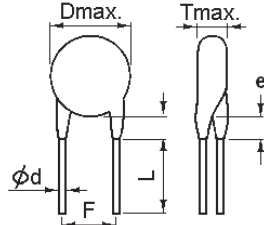
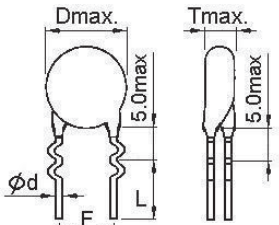
Features

- Capacitance has linear temperature coefficient
- Capacitance high stability
- Epoxy Coating for 1KV, 2KV, 3KV, 6KV parts (equivalent to UL94V-0 standards)
- RoHS Compliance
- Halogen free products are available
- Low lost at wide range of frequency

General specification

Capacitance Range	See page 3 to page 4
Capacitance Tolerance	±5%
Rated Voltage	50,100, 500, 1000, 2000, 3000 ,6000 VDC
Q Factor @ 1MHz, 1±0.2 Vrms, 25°C	C ≥ 30 pF.....Q ≥ 1,000, C < 30 pF.....Q ≥ 400+20°C
Insulation Resistance (IR) @ 25°C	10,000 MΩ Minimum
Dielectric Strength	50~500VDC:3 times the rated WVDC ; 1K, 2K, 3KVDC:2 times the rated WVDC; 6KVDC:1.5 times the rated WVDC.
Testing Parameters	1MHz ±20%, 1.0Vrms±0.2Vrms

Lead style

Lead type	Lead Code	Lead configuration	Lead type	Lead Code	Lead configuration
Type 1 Straight long lead	B	lead style : B 	Type 4 Inside kink lead	H	lead style : H 
Type 2 Outside kink lead	X	lead style : X 	Type 5 Vertical kink short lead	D	lead style : D 
Type 3 Straight short lead	L	lead style : L 	Type 6 Double outside kink lead	M	lead style : M 

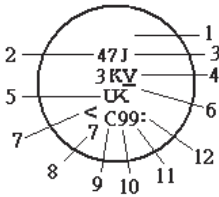
Manufacturing product range
Cap. Value v.s. Rate voltage, Product diameter & Type

T.C	SL (CLASS I, Temperature:+20°C~+85°C, T.C.C.: -1000 ~ +350ppm/°C)																			
	Rate voltage	50V(SL500);100V(SL101)						500V(SL501)					1KV(SL102)				2KV(SL202)			
Dφ(Code)	040	050	060	070	080	090	100	050	060	070	080	100	050	060	070	080	060	070	080	110
D max. (mm)	5.0	6.0	7.0	8.0	9.0	10.0	11.0	6.0	7.0	8.0	9.0	11.0	6.0	7.0	8.0	9.0	7.5	8.5	9.5	12.5
T max. (mm)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	4.0	4.0	4.0	4.0	4.0	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
15	150												150						150	
18	180							180					180						180	
20	200							200					200						200	
22	220							220					220						220	
24	240							240					240						240	
27	270							270					270						270	
30	300							300					300						300	
33	330							330					330						330	
36	360							360					360						360	
39	390							390					390						390	
47	470							470					470						470	
51	510							510					510						510	
56	560							560					560						560	
68	680							680					680						680	
75	750							750						750					750	
82	820							820						820					820	
100	101							101						101					101	
120		121							121					121						121
150		151							151						151					151
180		181								181					181					181
200			201							201						201				201
220			221							221						221				221
240			241								241									241
270				271							271									271
300				301							301									301
330				331							331									331
360				361								361								
390				391								391								
470					471															
500						501														
510						511														
560						561														
680							681													
750							751													
820							821													
φd (mm)	0.55±0.05																			
Packing	TAPING or BULK						TAPING or BULK					TAPING or BULK				TAPING or BULK				
Coating	Phenolic Resin										Phenolic or Epoxy Resin					Epoxy Resin				

Marking	1	2	3		4	5	6
	Temperature characteristic	Nominal capacitance	Rated voltage		Capacitance tolerance	Manufacturer's identification	Halogen and Pb free
	SL : No marking.	Identified by 3-figure code. Ex. 100 pF → "101"	50V/100V	Marked as underline	J:±5%	Shall be marked as "UK", but when Dφ≤060 shall be omitted.	There is a "_" marking under the code "V" as the coating is Halogen and Pb free Epoxy
			500V	No marking (is blank)			
			1000V	Marked "1KV"			
			2000V	Marked "2KV"			

Manufacturing product range
Cap. Value v.s. Rate voltage, Product diameter & Type

T.C.	SL (Temperature:+20°C~+85°C, T.C.C.: -1000 ~ +350 ppm/°C)					
	3KV(SL302)			6KV(SL602)		
Rate voltage						
Dφ(Code)	060	070	080	060	080	090
D max. (mm)	7.5	8.5	9.5	7.5	9.5	10.5
T max. (mm)	5.0	5.0	5.0	5.0	5.0	5.0
10	100			100		
12	120			120		
15	150			150		
18	180			180		
20	200			200		
22	220			220		
24	240					
27	270			270		
30	300			300	300	
33	330			330	330	
36	360					
39	390			390	390	
47		470			470	470
51		510			510	510
56		560			560	560
62		620				
68		680				680
75			750			
82			820			820
100			101			101
φd (mm)	0.55±0.05					
Packing	TAPING or BULK					
Coating	Epoxy Resin					

	1	2	3	4	5	6
	Temperature characteristic	Nominal capacitance	Capacitance tolerance	Rated voltage	Manufacturer's identification	Halogen and Pb free
SL : No marking		1. Cap.≥100pF Ex. 120pF →"121" 2. Cap<100pF, Ex. 22pF→"22"	J: ±5%	3000V : Be marked "3kV" 6000V : Be marked "6kV"	Shall be marked as "UK", but when DΦ≤060 shall be omitted.	When the epoxy resin is Halogn and Pb free, there is a "-"marking.
Definition of date code marking:						
	7	8	9	10	11	12
	Supplier of Epoxy	No. of test equipment	Factory of manufacture	Year of manufacture	Month of manufacture	Week of manufacture by month
<: K-company		1~9: No.1~No.9, J: No.10, K: No.11, L: No.12	C: GZ Plant	9:2019, 0:2020, 1:2021,	1~9:January~September, O: October, N: November, D: December	week 1: - week 2: • week 3: : week 4: ' week 5: ;

CERAMIC DISC CAPACITOR
CLASS II 50V, 100V, 500V, 1KV, 2KV, 3KV HI-K TYPE

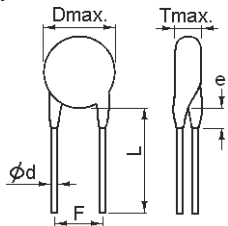
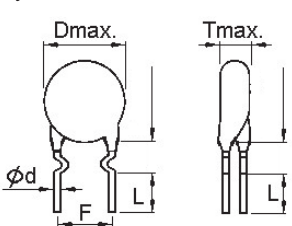
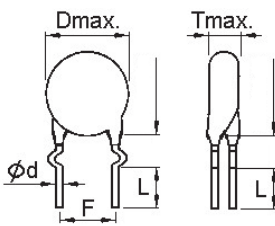
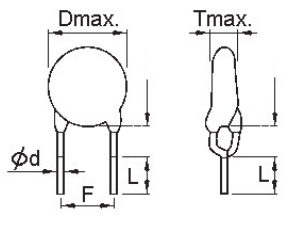
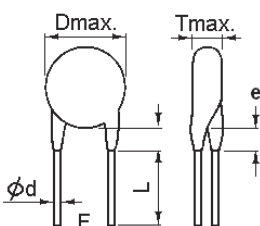
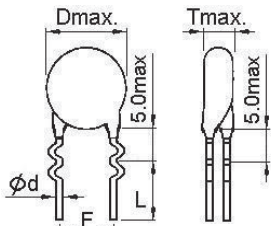
Features

- Capacitance has non-linear temperature coefficient.
- Large capacitance in small size.
- Epoxy Coating for 1KV, 2KV and 3KV parts (equivalent to UL94V-0 standards).
- RoHS Compliance.
- Halogen free products are available.
- Wide range of general purposes applications.

General specification

Capacitance Range	See page 6 to page 9
Capacitance Tolerance	±10%(for Y5P), ±20%(for Z5U), +80% -20%(for Z5U&Z5V&Y5V)
Rated Voltage	50,100, 500,1000, 2000, 3000VDC
Dissipation Factor (tan δ)	Y5P, Z5U, Y5U : tanδ≤2.5%, Z5V, Y5V : tanδ≤5.0%
Insulation Resistance (IR) @ 25°C	10,000 MΩMinimum or 200 MΩμF whichever is smaller
Dielectric Strength	50~500VDC: 2.5 times the rated WVDC; 1K, 2K, 3KVDC: 2 times the rated WVDC
Testing Parameters	1KHz ±20%, 1.0Vrms±0.2Vrms

Lead style

Lead type	Lead Code	Lead configuration	Lead type	Lead Code	Lead configuration
Type 1 straight long lead	B	lead style : B 	Type 4 Inside kink lead	H	lead style : H 
Type 2 Outside kink lead	X	lead style : X 	Type 5 Vertical kink short lead	D	lead style : D 
Type 3 straight short lead	L	lead style : L 	Type 6 Double outside kink lead	M	lead style : M 

Manufacturing product range
Cap. Value v.s. Rate voltage, product diameter & type

T.C.	Y5P (CLASS II, Temperature:-25°C~+85°C, T.C.C.:±10%)																																									
	50V(YP500) & 100V(YP101)							500V(YP501)							1KV(YP102)						2KV(YP202)																					
Rate voltage	040	050	060	070	080	090	100	040	050	060	070	080	090	100	110	130	050	060	070	080	100	120	060	080	090	100	130	140														
Dφ(Code)	040	050	060	070	080	090	100	040	050	060	070	080	090	100	110	130	050	060	070	080	100	120	060	080	090	100	130	140														
D max. (mm)	4.5	5.5	6.5	7.5	8.5	9.5	11.0	4.5	5.5	6.5	7.5	9.0	10.0	11.0	12.0	14.0	6.0	7.0	8.0	9.0	11.0	13.0	7.5	9.5	10.5	11.5	14.5	15.5														
T max. (mm)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5														
100	101							101									101							101																		
120	121							121									121							121																		
150	151							151									151							151																		
180	181							181									181							181																		
200	201							201									201							201																		
220	221							221									221							221																		
240	241							241									241							241																		
270	271							271									271							271																		
330	331							331									331							331																		
390	391							391									391							391																		
470	471							471									471							471																		
560	561							561									561							561																		
680	681							681										681						681																		
820	821								821									821							821																	
1000	102								102									102							102																	
1200		122								122									122							122																
1500		152								152									152							152																
1800		182									182									182						182																
2000		202									202									202						202																
2200		222									222									222						222																
2700			272									272									272					272																
3000			302									302									302						302															
3300			332										332								332						332															
3900				392									392									392					392															
4700				472										472								472						472														
5000					502									502																												
5600					562									562																												
6800						682									682																											
8200							822									822																										
10000								103									103																									
φd (mm)	0.55±0.05																																									
Packing	TAPING or BULK						BULK						TAPING or BULK						BULK						TAPING or BULK						TAPING or BULK						BULK					
Coating	Phenolic Resin												Phenolic or Epoxy Resin												Epoxy Resin																	

Marking	1	2	3		4	5	6
	Temperature characteristic	Nominal capacitance	Rated voltage		Capacitance tolerance	Manufacturer's identification	Halogen and Pb free
	Be marked "B".	Identified by 3-figure code. Ex. 1000pF→"102" 3300pF→"332"	50V/100V	Marked as underline	K:±10%	Shall be marked as "UK", but when Dφ ≤060 shall be omitted.	There is a "_" marking under the code "V" as the coating is Halogen and Pb free Epoxy.
			500V	No marking (is blank)			
			1000V	Marked "1kV"			
			2000V	Marked "2kV"			

Manufacturing product range
Cap. Value v.s. Rate voltage, product diameter & type

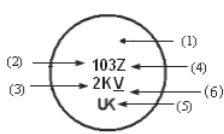
T.C.	Z5U (CLASS II, Temperature: +10°C~+85°C, T.C.C.: +22~56%)																	
	50V(ZU500)&100V(ZU101)				500V(ZU501)				1KV(ZU102)				2KV(ZU202)					
Rate voltage	040	050	060	070	050	060	070	090	050	070	090	100	060	070	080	090	110	130
Dφ(Code)	040	050	060	070	050	060	070	090	050	070	090	100	060	070	080	090	110	130
D max. (mm)	4.5	5.5	6.5	7.5	5.5	6.5	7.5	9.5	6.0	8.0	10.0	11.0	7.5	8.5	9.5	10.5	12.5	14.5
T max. (mm)	3.5	3.5	3.5	3.5	4.0	4.0	4.0	4.0	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
1000					102				102				102					
1200					122				122				122					
1500					152				152					152				
2200	222				222				222					222				
2700	272				272					272					272			
3300	332					332				332					332			
3600	362					362				362							362	
3900	392					392				392							392	
4700	472						472			472							472	
5000		502								502								
5600							562										562	
6800							682					682					682	
8200			822									822						822
10000				103				103				103						103
φd (mm)	0.55±0.05																	
Packing	TAPING or BULK																	BULK
Coating	Phenolic Resin							Phenolic or Epoxy Resin					Epoxy Resin					

Marking	1	2	3		4	5	6
	Temperature characteristic	Nominal capacitance	Rated voltage		Capacitance tolerance	Manufacturer's identification	Halogen and Pb free
	Be marked "E".	Identified by 3-figure code. Ex. 1000pF→"102" 3300pF→"332"	50V/100V	Marked as underline	M:±20% Z:-20~+80%	Shall be marked as "UK", but when Dφ ≤ 060 shall be omitted.	There is a "_" marking under the code "V" as the coating is Halogen and Pb free Epoxy.
			500V	No marking (is blank)			
			1000V	Marked "1kV"			
			2000V	Marked "2kV"			

Manufacturing product range
Cap. Value v.s. Rate voltage, product diameter & type

T.C.	Z5V (CLASS II, Temperature: +10°C~+85°C, T.C.C.: +22~82%)								
Rate voltage	50V(ZV500) & 100V(ZV101)				500V(ZV501)	1KV(ZV102)			2KV(ZV202)
Dφ (Code)	050	060	070	080	080	060	080	100	120
D max. (mm)	5.5	6.5	7.5	8.5	9.0	7.0	9.0	11.0	13.5
T max. (mm)	3.5	3.5	3.5	3.5	4.0	4.5	4.5	4.5	4.5
1000	102								
1500	152					152			
2200	222					222			
2700	272					272			
3300	332					332			
3900	392						392		
4700	472						472		
10000		103			103			103	103
20000			203						
22000				223					
φd (mm)	0.55±0.05								
Packing	TAPING or BULK								BULK
Coating	Phenolic Resin					Phenolic or Epoxy Resin			Epoxy Resin

T.C.	Y5V (CLASS II, Temperature: -25°C~+85°C, T.C.C.: +22% ~82%)									
Rate voltage	50V(YV500) & 100V(YV101)				500V(YV501)			1KV(YV102)	2KV(YV202)	
Dφ (Code)	040	050	060	080	050	070	080	100	070	120
D max. (mm)	4.5	5.5	6.6	8.5	5.5	7.5	8.5	11.0	8.5	13.5
T max. (mm)	3.5	3.5	3.5	3.5	4.0	4.0	4.0	4.5	5.0	5.0
1000	102								102	
2200		222			222				222	
4700		472				472				
10000			103				103	103		103
22000				223						
φd (mm)	0.55±0.05									
Packing	TAPING or BULK								BULK	
Coating	Phenolic Resin						Phenolic or Epoxy Resin		Epoxy Resin	

Marking	1	2	3		4	5	6
	Temperature characteristic	Nominal capacitance	Rated voltage		Capacitance tolerance	Manufacturer's identification	Halogen and Pb free
	Z5V, Y5V: the logo is "F", but the "F" shall be omitted.	Identified by 3-figure code. Ex. 1000pF → "102" 3300pF → "332" 4700pF → "472"	50V/100V	Marked as underline	M: ±20% Z: -20~+80%	Shall be marked as "UK", but when Dφ ≤ 060 shall be omitted	There is a "_" marking under the code "V" as the coating is Halogen and Pb free Epoxy.
			500V	No marking (is blank)			
			1000V	Marked "1kV"			
			2000V	Marked "2kV"			
			2000V	Marked "2kV"			

Manufacturing product range
Cap. Value v.s. Rate voltage, product diameter & type

T.C.	Y5P (CLASS II, Temperature:-25°C~+85°C, T.C.C.:±10%)			Z5U / Y5U (CLASS II, Temperature: +10°C~+85°C, T.C.C.: +22~-56%)				
Rate voltage	3KV(YP302)			3KV(ZU302)				
Dφ (Code)	060	070	090	060	080	100	110	120
D max. (mm)	8.0	9.0	11.0	8.0	10.0	12.0	13.0	14.0
T max. (mm)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
100	101							
120	121							
150	151							
180	181							
220	221							
270	271							
330	331							
390		391						
470		471						
560		561						
680			681					
820			821					
1000			102	102				
1500					152			
2200					222			
3300						332		
3900							392	
4700								472
φd (mm)	0.55±0.05							
Packing	TAPING or BULK							
Coating	Epoxy Resin							

	1	2	3	4	5	6
	Temperature characteristic	Nominal capacitance	Capacitance tolerance	Rated voltage	Manufacturer's identification	Halogen and Pb free
	Y5P : Be marked "B" Z5U/Y5U : Be marked "E"	Identified by 3-figure code when Cap.≥100pF Ex. 1000pF →"102"	K:±10%(for Y5P) M:±20% (for Z5U/Y5U)	3000V : Be marked "3kV"	Shall be marked as "UK", but when Dφ≤060 shall be omitte	When the epoxy resin is Halogen and Pb free, there is a "-"marking.
Definition of date code marking:						
	7	8	9	10	11	12
	Supplier of Epoxy	No. of test equipment	Factory of manufacture	Year of manufacture	Month of manufacture	Week of manufacture by month
	<: K-company	1~9: No.1~No.9, J: No.10, K: No.11, L: No.12	C: GZ Plant	9:2019, 0:2020, 1:2021,	1~9:January~September, O: October, N: November, D: December	week 1: - week 2: • week 3: : week 4: / week 5: ;

SAFETY STANDARD CERAMIC CAPACITOR SAP Part Number Explanation

To order, please also specify Pan Overseas Part No. as the following example for SAP system :

YV	0AC	472	M	10	0	L	20	C	7	H
1	2	3	4	5	6	7	8	9	10	11

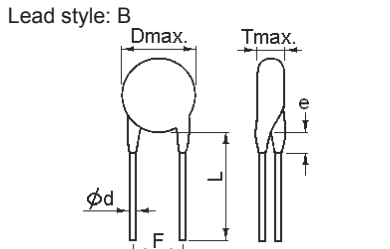
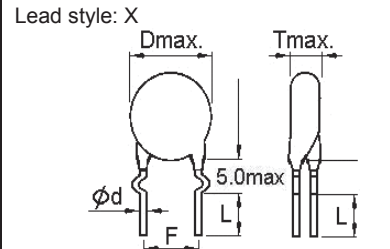
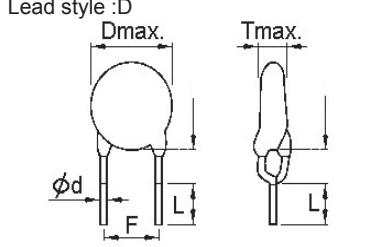
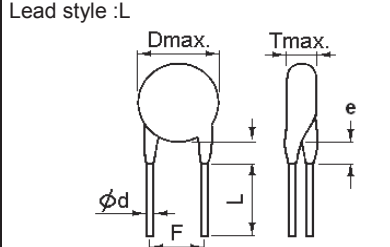
1. Temperature characteristic (identified code):

CODE	SL	YP (Y5P)	YU (Y5U)	YV (Y5V)
Cap. Change (%)	-1000~+350ppm/°C(+20°C~+85°C)	±10%	+20%to -55%	+30%to -80%

2. TYPE (identified by 3-figure code):

0AC=AC(X1-400V~/Y2-250V~); 1AC=AC(X1-440V~/Y2-300V~)
 0AH=AH(X1-400V~/Y1-250V~); 1AH=AH(X1-400V~/Y1-400V~)
 0AS=AS(X1-760V~/Y1-500V~) (Only approval for VDE//ENEC/UL/CUL/CQC)

- 3. Capacitance (identified by 3-figure code)
- 4. Capacitance tolerance (identified by code)
- 5. Nominal body diameter dimension (identified by 2-figure code)
- 6. Internal control code:0—Normal, other code—Special control
- 7. Lead Style:

Lead type & Code	Lead Configuration	Lead type & Code	Lead Configuration
Type B Straight lead for taping	Lead style: B 	Type X Outside kink lead	Lead style: X 
Type D Vertical kink short lead	Lead style :D 	Type L Straight lead for bulk	Lead style :L 

8. Packing mode and lead length (identified by 2-figure code)

Bulk Code	Description
3E	lead length L : 3.5mm
04	lead length L : 4.0mm
4E	lead length L : 4.5mm
20	lead length L : 20mm

Taping Code	Description
AM	Box and Pitch : 25.4 mm (10.0mm)
AF	Box and Pitch : 15.0 mm (Pitch=7.5mm)
AS	Box and Pitch : 15.0 mm (Pitch=10mm)

9. Length tolerance

Code	Description
A	±0.5 mm (only for kink lead type)
B	±1.0 mm
C	MIN.
D	Taping special purpose

10. Pitch

Code	Description
7	7.5±1.0 mm
M	7.5±0.5 mm
0	10±1.0 mm
A	10±0.5 mm

11. Epoxy Resin Code

Code	Description
H	Halogen and Pb free, epoxy resin (Ag electrode)

**SAFETY STANDARD CERAMIC CAPACITOR:
AH and AS Type-Class X1/Y1; AC Type-Class X1/Y2**

Introduction

Ideal for use as X/Y capacitors for AC line filters and primary-secondary coupling on switching power Supplies and AC adapters applications. Having internationally recognized safety certifications, these capacitors are well-suited for applications that require keeping potentially disruptive or damaging line transients and EMI out of susceptible equipment. They are also an ideal solution in situations where there is a need to suppress line disturbances at the power.

Features

- Compact size
- Cost effective products
- Ideal for across the line applications
- Safety Standard Recognized for AC applications
- Coated with flame-retardant epoxy resin (equivalent to UL94V-0 standards)
- RoHS Compliance
- Halogen free products are available



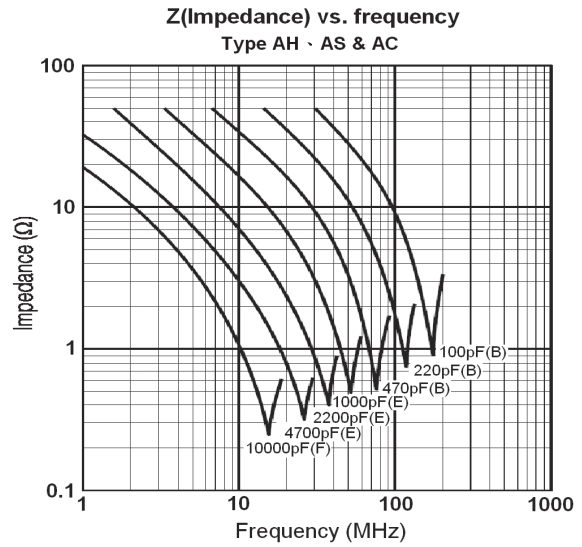
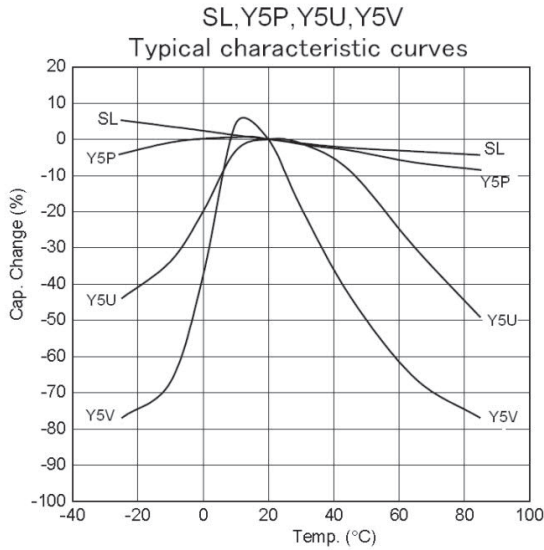
Approval standards

Agencies	UL/cUL	CSA	CQC	KTL	VDE, ENEC, SEMKO, NEMKO, DEMKO, FIMKO, SEV
Standard No.	ANSI/UL 60384-14 (2nd ed.)	E60384-14:14	IEC60384-14: 2013	KC60384-14	IEC60384-14 4 th Edition
Rated Voltage	0AC = AC(X1:400V~/Y2:250V~) 1AC = AC(X1:440V~/Y2:300V~) 0AH = AH(X1:400V~/Y1:250V~) 1AH = AH(X1:400V~/Y1:400V~) 0AS = AS(X1:760V~/Y1:500V~)				

General specification

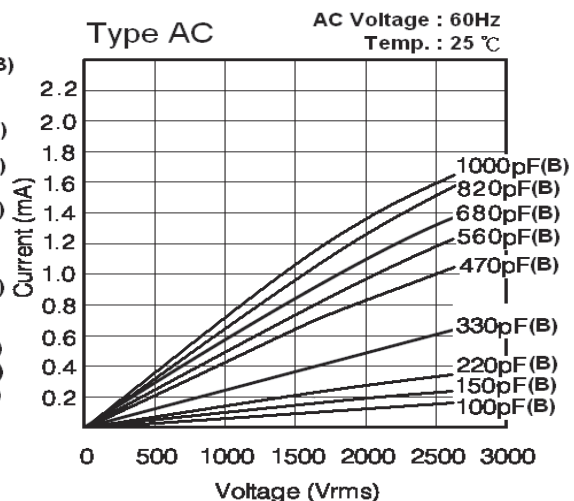
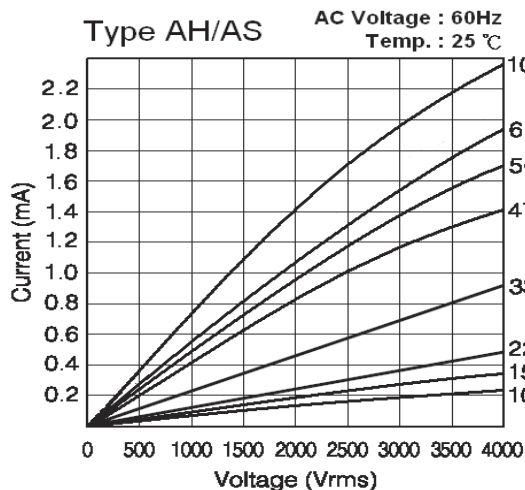
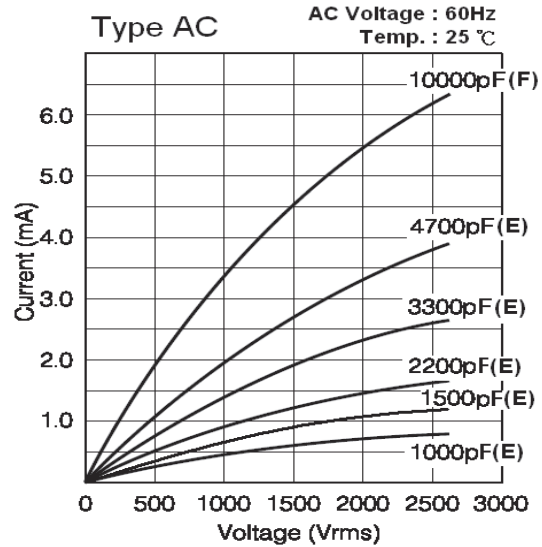
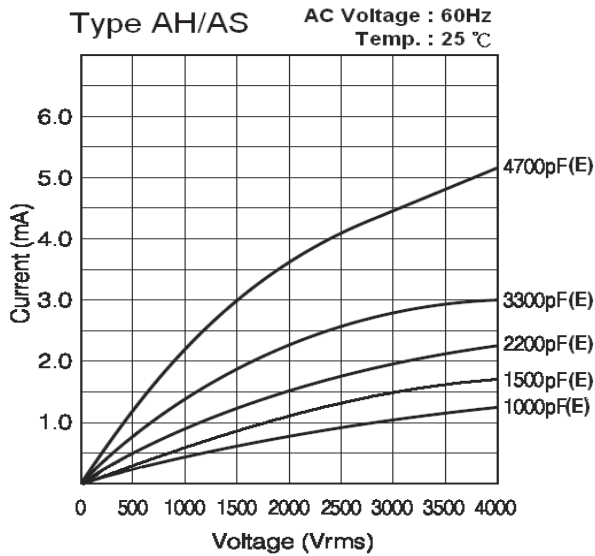
Capacitance Range	AH:10pF to 4700pF; AC:10pF to 10000pF; AS: 100pF to 4700pF
Capacitance Tolerance	±5%, ±10%, ±20%
Operating Temperature Range	-40°C~ +125°C
Temperature Coefficient (ΔC Max)	-1000~+350ppm/°C(SL), ±10% (Y5P), +30 ~80% (Y5V), +20~55% (Y5U)
Voltage Resistance	AH Type: X1:400Vac / Y1:400Vac or 250Vac ; AC Type: X1:400Vac or 440Vac / Y2:250VAC or 300Vac AS Type: X1:760Vac / Y1:500Vac
Dissipation Factor(tanδ) or Q	SL: 30pF&above:Q≥1000 Below 30pF:Q≥400+20×C @20°C, 1MHz, 1±0.2Vrms Y5P: tanδ=2.5% Max. @20°C, 1KHz, 1±0.2Vrms Y5U: tanδ=2.5% Max. @20°C, 1KHz, 1±0.2Vrms Y5V: tanδ=5.0% Max. @20°C, 1KHz, 1±0.2Vrms
Insulation Resistance	10000MΩ at 500VDC for 60 Seconds
Dielectric Strength	2600VAC for 60 Seconds (AC TYPE) (For Lead Pitch=7.5 & 10 mm)
	4000VAC for 60 Seconds (AH,AS TYPE) (For Lead Pitch=10.0mm & 12.5mm)

Typical characteristic curves & Z (Impedance) vs. frequency :



Note: Above data are just for reference not assured ones.

Leakage Current Characteristics (AH and AS: ~4000V / AC: ~2600V):



Note: Above data are just for reference not assured ones

AH Type-Class X1/Y1 (Normal for standard parts):

Part Number	Temp. Char.	Cap.(pF)	Tol.	Dimension (mm)			
				D Max.	T Max.	F F±1/±0.5	Wire Dia. (φd)
YP *AH101K060	Y5P	100	±10%	7.0	5.0	10.0.	0.55±0.05
YP *AH151K060		150		7.0			
YP *AH221K060		220		7.0			
YP *AH331K060		330		7.0			
YP *AH471K070		470		8.0			
YP *AH561K080		560		9.0			
YP *AH681K080		680		9.0			
YP *AH102K100		1000		11.0			
YU *AH681M060		Y5U		680			
YU *AH102M070	1000		8.0				
YU *AH152M080	1500		9.0				
YU *AH222M090	2200		10.0				
YU *AH332M110	3300		12.0				
YU *AH392M120	3900		14.0				
YU *AH472M130	4700		14.0				
YV *AH102M060	Y5V	1000	±20%	7.0	5.5	10.0	0.55±0.05
YV *AH152M070		1500		8.0			
YV *AH222M080		2200		9.0			
YV *AH332M100		3300		11.0			
YV *AH472M110		4700		12.0			
SL *AH ***J060	SL	10,12,15,18,20,22,24,27,30,33,36,39	±5%	7.0	5.0	10.0	0.55±0.05
SL *AH ***J070		47,50,51,56,62		8.0			
SL *AH ***J080		68,75		9.0			
SL *AH***J090		82,100		10.0			

AS Type-Class X1/Y1 (Normal for standard parts):

SAP P/N	T.C.	Capacitance(pF)	Tol.	Dimension (unit:mm)			
				D (max.)	T (max.)	F±1/±0.5	φd
YP*AS101K070*	Y5P	100 pF	±10%	8.0	7.0	10.0.	0.55±0.05
YP*AS151K070*		150 pF		8.0			
YP*AS221K070*		220 pF		8.0			
YP*AS331K070*		330 pF		8.0			
YP*AS471K080*		470 pF		9.0			
YP*AS561K090*		560 pF		10.0			
YP*AS681K090*		680 pF		10.0			
YP*AS102K110*		1000 pF		12.0			
YU*AS102M080*		Y5U		1000 pF			
YU*AS152M090*	1500 pF		10.0				
YU*AS222M120*	2200 pF		13.0				
YU*AS332M120*	3300 pF		13.0				
YU*AS392M130*	3900 pF		14.0				
YU*AS472M140*	4700 pF		15.0				

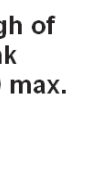
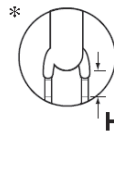
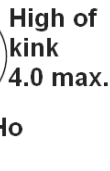
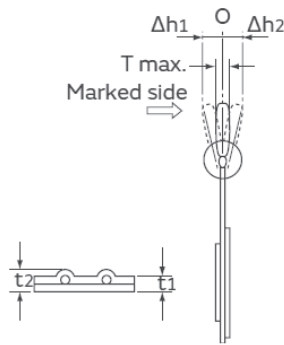
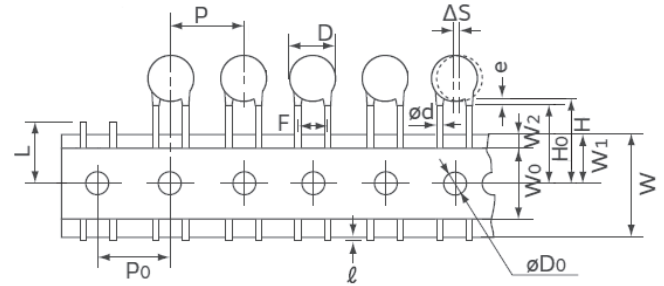
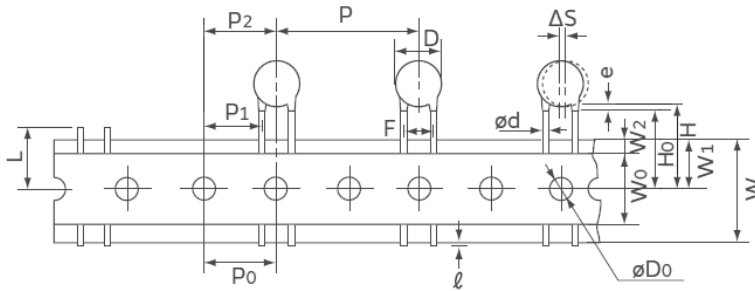
AC Type-Class X1/Y2:

Part Number	Temp. Char.	Cap.(pF)	Tol.	Dimension (mm)			
				D max.	T max.	F±1/±0.5	Wire Dia. (φd)
YP *AC101K060	Y5P	100	±10%	7.0	5.0	7.5, 10.0	0.55±0.05
YP *AC151K060		150		7.0			
YP *AC221K060		220		7.0			
YP *AC331K060		330		7.0			
YP *AC471K060		470		7.0			
YP *AC561K070		560		8.0			
YP *AC681K070		680		8.0			
YP *AC821K080		820		9.0			
YP *AC102K080		1000		9.0			
YU *AC102M060		Y5U		1000			
YU *AC152M080	1500		9.0				
YU *AC222M080	2200		9.0				
YU *AC332M100	3300		11.0				
YU *AC392M120	3900		13.0				
YU *AC472M120	4700		13.0				
YV *AC102M060	Y5V	1000	±20%	7.0	5.0	7.5 10.0	0.55±0.05
YV *AC152M060		1500		7.0			
YV *AC222M060		2200		7.0			
YV *AC332M080		3300		9.0			
YV *AC392M100		3900		11.0			
YV *AC472M100		4700		11.0			
YV *AC682M120		6800		13.0			
YV *AC103M140		10000		15.0		10.0	
SL *AC *** J060	SL	10,12,15,18,20,22,24,27, 30,33,36,39,47,50,51	±5%	7.0	5.0	7.5 10.0	0.55±0.05
SL *AC *** J070		56,62,68,75		8.0			
SL *AC820J080		82		9.0			
SL *AC101J090		100		10.0			

Taping Format: AH and AS X1/Y1

• 25.4mm pitch/lead spacing 10.0mm taping
Lead Code: *BAMD0 & *DAMD0 & *XAMD0

• 15mm pitch/lead spacing 10.0mm taping
Lead Code: *BASD0 & *DASD0



POE Part Number		*BAMD0 / *DAMD0 / *XAMD0	*BASD0 / *DASD0
Item	Symbol	Dimensions(mm)	
Pitch of component	P	25.4 ± 2	15.0 ± 1
Pitch of sprocket	P0	12.7 ± 0.3	15.0 ± 0.3
Lead spacing	F	10.0 ± 1.0	
Length from hole center to component center	P2	12.7 ± 1.5	--
Length from hole center to lead	P1	7.7 ± 1.5	--
Body diameter	D	Refer to Detail Spec.	
Deviation along tape, left or right	ΔS	0 ± 2.0	
Carrier tape width	W	18.0 +1/-0.5	
Position of sprocket hole	W1	9.0 ± 0.5	
Lead distance between the kink and center of sprocket hole	H0	18.0 +2.0/-0 (For: *D* & *X* lead type)	
Lead distance between the bottom of body and the center of sprocket hole	H	20.0+1.5/-1.0 (For: *B* lead type)	
Protrusion length	ℓ	+1.5/-1.0 (the end of lead wire may be inside the tape.)	
Diameter of sprocket hole	D0	4.0 ± 0.2	
Lead diameter	φd	0.55±0.05	
Total tape thickness	t1	0.6 ± 0.3	
Total thickness, tape and lead wire	t2	1.5 max.	
Deviation across tape	Δh1 / Δh2	2.0 max.	
Portion to cut in case of defect	L	11.0 max.	
Hole-down tape width	W0	8.0 min	
Hole-down tape distortion	W2	1.5 ± 1.5	
Coating extension on leads	E	3.0 max for straight lead style; Not exceed the kink leads for kink lead.	
Body thickness	T	Refer to Detail Spec.	

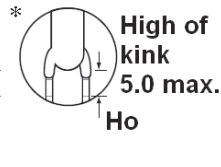
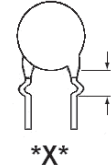
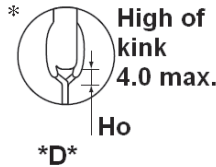
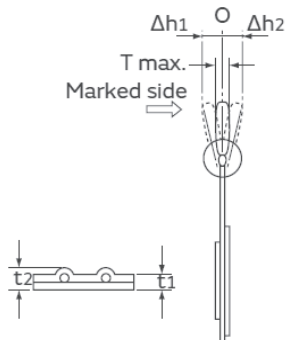
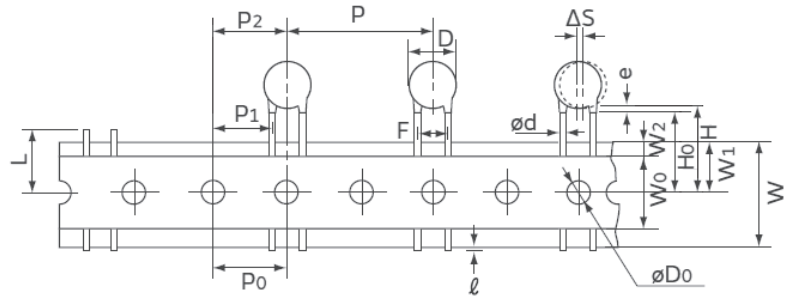
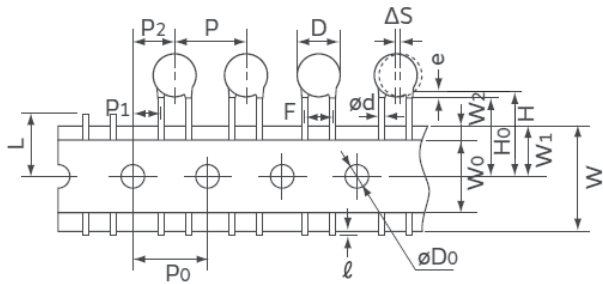
Taping Format: AC X1/Y2

- 15 mm pitch/lead spacing 7.5mm taping

Lead Code: *BAFD7 & *DAFD7 & *XAFD7 & *GAFD7

- 25.4mm pitch/lead spacing 7.5mm & 10.0mm taping

Lead Code: *BAMD* & *DAMD* & *XAMD* & *GAMD*



POE Part Number		*BAFD7	*DAFD7 *XAFD7	*BAMD7 *DAMD7 *XAMD7	*BAMD0 *DAMD0 *XAMD0
Item	Symbol	Dimensions (mm)			
Pitch of component	P	15.0	15.0	25.4	25.4
Pitch of sprocket	P0	15.0±0.3	15.0±0.3	12.7±0.3	12.7±0.3
Lead spacing	F	7.5±1.0	7.5±1.0	7.5±1.0	10.0±1.0
Length from hole center to component center	P2	7.5±1.5	7.5±1.5	12.7±1.5	12.7 ± 1.5
Length from hole center to lead	P1	3.75±1.0	3.75±1.0	8.95±1.0	7.7±1.5
Body diameter	D	Refer to Detail Spec.			
Deviation along tape, left or right	ΔS	0±2.0			
Carrier tape width	W	18.0 +1/-0.5			
Position of sprocket hole	W1	9.0±0.5			
Lead distance between the kink and center of sprocket hole	H0	18.0 +2.0/-0 (For: *D* & *X* lead type)			
Lead distance between the bottom of body and the center of sprocket hole	H	20.0+1.5/-1.0 (For: *B* lead type)			
Protrusion length	ℓ	+0.5/-1.0 (the end of lead wire may be inside the tape.)			
Diameter of sprocket hole	D0	4.0±0.2			
Lead diameter	φd	0.55±0.05			
Total tape thickness	t1	0.6±0.3			
Total thickness, tape and lead wire	t2	1.5 max.			
Deviation across tape	Δh1/Δh2	2.0 max.			
Portion to cut in case of defect	L	11.0 max.			
Hole-down tape width	W0	8.0 min			
Hole-down tape distortion	W2	1.5±1.5			
Coating extension on leads	e	3.0 max for straight lead style; Not exceed the kink leads for kink lead.			
Body thickness	T	Refer to Detail Spec.			




Marking: AH

1. Type Designation	AH		
2. Nominal Capacitance	3-digit-system		
3. Capacitance Tolerance	J:±5%, K:±10%, M:±20%		
4. Company Trade mark	UK		
5. Products ID	<p>Abbreviation ex.:</p> <p>Manufacture year: ← 9_C 6 1234 → Last 4 digits of lot no.</p> <p>9:2019 0:2020 1:2021 ... Individual specification code Manufacture month: 1:January 2:February ... 9:September O:October N:November D:December</p> <p>Epoxy resin code: " _ ": Halogen and Pb free epoxy resin C:Pan overseas (Guangzhou)</p>		
6. Approved Monogram:			
(1) VDE approval mark		IEC 60384-14 Class Code : X1 : 400V~ , Y1 : 250V~ or 400V~	
(2) UL approval mark		(6) DEMKO approval mark	
(3) CSA approval mark		(7) FIMKO approval mark	
(4) SEMKO approval mark		(8) SEV approval mark	
(5) NEMKO approval mark		(9) CQC approval mark	
Two sides (For SAP part number 10-11 digits≤07 products)		One side (For SAP part number 10-11 digits≥08 products)	
Ex.:	Ex.:		Special marking: YP*AH102K100* 0AH:
<p>0AH:</p> <p>1AH:</p>	<p>0AH:</p> <p>1AH:</p>		<p>1AH:</p>
<p>* Marking by the laser.</p> <p>* "C": Marked with code " _ " stand for Halogen and Pb free for epoxy resin coating.</p> <p>* " . " : Individual specification code, it is added under the lot no.</p>			

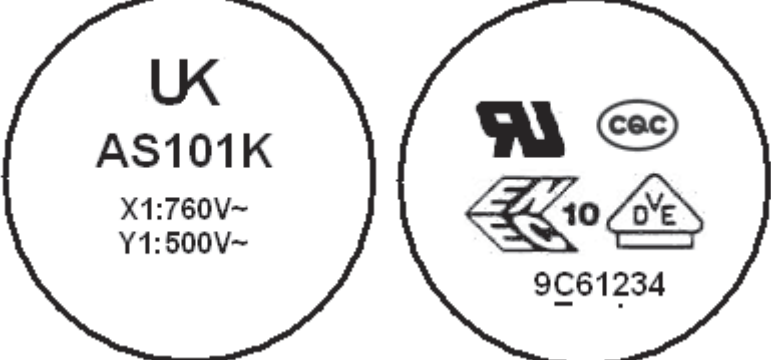







Marking: AC

1. Type Designation		AC							
2. Nominal Capacitance		3-digit-system							
3. Capacitance Tolerance		J:±5%, K:±10%, M:±20%							
4. Company Trade mark		UK							
5. Products ID		<p>Abbreviation ex.:</p> <p>Manufacture year: ← 9 C 6 1234 → Last 4 digits of lot no.</p> <p>9:2019 0:2020 1:2021 ... Manufacture month: 1:January 2:February ... 9:September 0:October N:November D:December</p> <p>Epoxy resin code: " _ ": Halogen and Pb free epoxy resin</p> <p>Manufacture: C:Pan overseas (Guangzhou)</p>							
6. Approved monogram:									
6.1 VDE		6.3 CSA		6.5 NEMKO		6.7 FIMKO		6.9 CQC	
6.2 UL		6.4 SEMKO		6.6 DEMKO		6.8 SEV			
Marking Ex.:	Type	Two sides marking (For SAP part number 10-11 digits≤07 products)				One side marking (For SAP part number 10-11 digits≥"08" products)			
	0AC <u>X1:400Vac</u> <u>Y2:250Vac</u>								
	1AC <u>X1:440Vac</u> <u>Y2:300Vac</u>								
<p>*Marking by the laser.</p> <p>**“C” : Marked with code “ _ ” stand for Halogen and Pb free for epoxy resin coating.</p> <p>** “ . ” : Individual specification code, it is added under the lot no.</p>									

Marking: AS

1. Type Designation	AS
2. Nominal Capacitance	3-digit-system
3. Capacitance Tolerance	K:±10%, M:±20%
4. Company Name Code(Trade mark)	UK
5. Products ID	<p>Abbreviation ex.:</p> <p>Manufacture year: ← 9 <u>C</u> 6 1234 → Last 4 digits of lot no. 9:2019 0:2020 1:2021 ⋮</p> <p>Individual specification code</p> <p>Manufacture month: 1:January 2:Feruary ⋮ 9:September O:October N:November D:December</p> <p>Manafactory: C:Pan overseas (Guangzhou)</p> <p>Epoxy resin code: " _ ": Haglogen and Pb free epoxy resin</p>
6. Approved Monogram:	
(1) VDE approval mark	 IEC 60384-14 Class code : X1 : 760V~ · Y1 : 500V~
(2) UL approval mark	
(3) CQC approval mark	

Marking sample

Two sides marking (for SAP part number 10-11 digits ≤"08" products)	One side marking (for SAP part number 10-11 digits ≥"09" products)
 <p>UK AS101K X1:760V~ Y1:500V~</p> <p>    9C61234 </p>	 <p>UK AS472M X1:760V~ Y1:500V~</p> <p>    9C61234 </p>

* Marking by the laser.
 *“C” : Marked with code “_” stand for Halogen and Pb free epoxy resin.
 * “ . ” : Individual specification code, it is added under the lot no.

RADIAL LEADED MULTILAYER CERAMIC CAPACITOR PART NUMBER EXPLANATION

To order, please also specify Pan Overseas Part No. as the following example for SAP system :

RD21	B	102	K	500	B	5	H	07	B
①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩

① Product Type

Product Type		
RD21	RD20	RD30

② Dielectric Code

Code	T.C.	OP Temperature	Cap. Change (ΔC)
N	NPO	-55~+125°C	0 ± 30 (ppm/°C)
B	X7R	-55~+125°C	± 15%
F	Y5V	-25~+85°C	+30% ~ -80%

③ Capacitance Code

Code	Capacitance	Code	Capacitance	Code	Capacitance	Code	Capacitance
1R0	1 pF	100	10 pF	102	1000 pF	103	10000 pF
1R5	1.5 pF	101	100 pF	472	4700 pF	104	100000 pF

④ Tolerance Code

Code	Tolerance	Code	Tolerance	Code	Tolerance	Code	Tolerance	Code	Tolerance
D	±0.5pF	J	± 5%	K	± 10%	M	± 20%	Z	+80% / -20%

* Remark about tolerance code:

NPO: Cap<10pF: D tolerance / Cap ≥ 10pF: J, K, M, Z, X7R: K · M, Y5V: M · Z

⑤ Rated Voltage

Code	Voltage	Code	Voltage	Code	Voltage	Code	Voltage	Code	Voltage	Code	Voltage
100	10V	250	25V	101	100V	251	250V	631	630V	202	2000V
160	16V	500	50V	201	200V	501	500V	102	1000V	302	3000V

⑥ Packaging Code

Code	Packing
A	Ammo
B	Bulk

⑧ Termination

Code	Termination
H	Cu/Ni/Sn Halogen free

⑨ -1 Lead Length for Bulk

Code	Length
07	7.0 mm
3E	3.5 mm
05	5.0 mm

⑦ Chip Size

Code	Chip Size
5	0805
6	1206
0	1210
2	1812
8	1808

⑨ -2 Packing for Taping

Code	Packing
AN	Ammo

⑩ Length Tolerance

Code	Length Tol.	Code	Length Tol.
A	± 0.5 mm	D	Taping.
B	± 1.0 mm		

Features

1. MLC Radial Lead Capacitor (RD) has wide application in computer, data processing, telecommunication, industrial control and instrumentation equipment.
2. The radial lead MLC is built with superior moisture, and shock resistant epoxy coating material can be supplied in both, bulk or taping form for automatic insertion.
3. RoHS compliance.
4. Halogen free products are available.

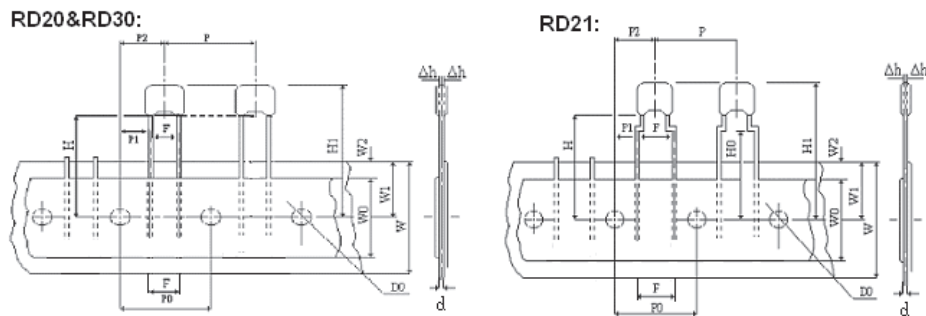
Lead configuration and dimension

(Unit: mm)

Size		Width (W) Max.	Height (H)Max.	Height (H1)Max	Thickness (T) Max.	Length (L)	Lead spacing (F)		Lead diameter (d)
							Taping	Bulk	
RD20	0805	5.0	4.5	6.0	3.0	Refer to the item ⑨-1 SAP Part Number	2.5±1.0	2.54±1.0	0.5±0.05
RD21	0805	5.0	4.5	6.5	3.5		5.0±1.0	5.08±1.0	
	1206	6.5	5.0	7.0	4.0				
RD30	1210	6.5	5.5	7.5	5.0		5.0±1.0	5.08±1.0	
	1808	8.0	6.0	7.5	5.5				
	1812	8.0	6.5	8.0	5.5				

Lead Configuration	RD20	RD21	RD30

Taping Specification



ITEM	SYMBOL	DIMENSIONS (mm)	REMARKS
Pitch of Components	P	12.7 ± 1.0	
Feed hole pitch	P0	12.7 ± 0.3	Cumulative pitch error : ± 1.0mm / 20 pitches
Feed hole center to lead	P1	5.1 ± 0.7(for RD20) 3.85 ± 0.7(for RD21 & RD30)	
Feed hole center to component center	P2	6.35 ± 1.3	
Lead diameter	φd	0.5 ± 0.05	
Lead to lead spacing	F	2.5 ± 0.8 (for RD20) 5.0 ± 0.8 (for RD21& RD30)	To lead top within tolerance
Component alignment, F - R	Δh	2.0 max	The alignment from the center of the lead is ± 1.0 mm
Tape width	W	18.0 -1.0 / -0.5	
Adhesive tape width	W0	11.0 min	
Hole position	W1	9.0 ± 0.5	
Adhesive tape position	W2	3.0 max	
Height of bottom body from tape center	H	18.0 + 2.0 / -0	H + 12.5 mm ≤ H1
Lead-wire clinch height	H0	18.0 ± 0.5 (for RD20/RD30) 16.0 ± 0.5 (for RD21)	6.5 ≤ H0 - W1
Component height	H1	32.25 max	
Feed hole diameter	D0	4.0 ± 0.2	
Total tape thickness	T	0.6 ± 0.3	

NPO Dielectric

Dielectric		NPO																									
		0805				1206						1210						1808				1812					
Size		50	100	200	250	50	100	200	250	500	630	1000	50	100	200	250	500	630	1000	500	630	1000	2000	500	630	1000	2000
Voltage (VDC)																											
Capacitance	1.0pF (1R0)	B	B	B	B																						
	1.2pF (1R2)	B	B	B	B	B	B																				
	1.5pF (1R5)	B	B	B	B	B	B	B	B	B	B	B															
	1.8pF (1R8)	B	B	B	B	B	B	B	B	B	B	B									B	B	B	B			
	2.2pF (2R2)	B	B	B	B	B	B	B	B	B	B	B									B	B	B	B			
	2.7pF (2R7)	B	B	B	B	B	B	B	B	B	B	B									B	B	B	B			
	3.3pF (3R3)	B	B	B	B	B	B	B	B	B	B	B									B	B	B	B			
	3.9pF (3R9)	B	B	B	B	B	B	B	B	B	B	B									B	B	B	B			
	4.7pF (4R7)	B	B	B	B	B	B	B	B	B	B	B									B	B	B	B			
	5.6pF (5R6)	B	B	B	B	B	B	B	B	B	B	B									B	B	B	B			
	6.8pF (6R8)	B	B	B	B	B	B	B	B	B	B	B									B	B	B	B			
	8.2pF (8R2)	B	B	B	B	B	B	B	B	B	B	B									B	B	B	B			
	10pF (100)	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
	12pF (120)	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
	15pF (150)	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
	18pF (180)	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
	22pF (220)	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
	27pF (270)	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
	33pF (330)	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
	39pF (390)	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
	47pF (470)	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
	56pF (560)	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
	68pF (680)	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
	82pF (820)	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
	100pF (101)	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
	120pF (121)	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
	150pF (151)	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
	180pF (181)	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
	220pF (221)	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
	270pF (271)	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
	330pF (331)	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
	390pF (391)	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
	470pF (471)	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
	560pF (561)	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
	680pF (681)	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
	820pF (821)	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
	1000pF (102)	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
	1200pF (122)	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
	1500pF (152)	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
	1800pF (182)	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
	2200pF (222)	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
	2700pF (272)	B	B			B	B	B	B				B	B	B	B	B	B							B	B	
3300pF (332)	B	B			B	B	B	B				B	B	B	B	B	B							B	B		
3900pF (392)	B	B			B	B	B	B				B	B	B	B	B	B										
4700pF (472)	B	B			B	B	B	B				B	B	B	B												
5600pF (562)	B	B			B	B						B	B	B	B												
6800pF (682)	B	B			B	B						B	B	B	B												
8200pF (822)	B				B	B						B	B	B	B												
0.010uF (103)	B				B	B						B	B	B	B												
0.012uF (123)	B				B	B						B	B														
0.015uF (153)	B				B	B						B	B														
0.018uF (183)	B				B	B																					
0.022uF (223)	B				B	B																					
0.027uF (273)					B																						
0.033uF (333)					B																						
0.039uF (393)					B																						
0.047uF (473)					B																						
0.056uF (563)					B																						
0.068uF (683)					B																						
0.082uF (823)					B																						
0.1uF (104)					B																						

1. The letter in cell is expressed the symbol of product terminations. B: (Cu/Ni/Sn)
 2. RD30 type can use Mlcc size 1808 and 1812, RD21 type can use Mlcc size 0805 and 1206, but RD20 type can only use Mlcc size 0805.

X7R Dielectric

Dielectric		X7R																															
Size		0805				1206						1210						1808					1812										
Voltage (VDC)		50	100	200	250	50	100	200	250	500	630	1000	50	100	200	250	500	630	1000	500	630	1000	2000	3000	500	630	1000	2000	3000				
Capacitance	100pF (101)	B	B	B	B																												
	120pF (121)	B	B	B	B																												
	150pF (151)	B	B	B	B	B	B	B	B	B	B	B									B	B	B	B	B								
	180pF (181)	B	B	B	B	B	B	B	B	B	B	B									B	B	B	B	B								
	220pF (221)	B	B	B	B	B	B	B	B	B	B	B									B	B	B	B	B								
	270pF (271)	B	B	B	B	B	B	B	B	B	B	B									B	B	B	B	B				B	B			
	330pF (331)	B	B	B	B	B	B	B	B	B	B	B									B	B	B	B	B				B	B			
	390pF (391)	B	B	B	B	B	B	B	B	B	B	B									B	B	B	B	B				B	B			
	470pF (471)	B	B	B	B	B	B	B	B	B	B	B									B	B	B	B	B				B	B			
	560pF (561)	B	B	B	B	B	B	B	B	B	B	B									B	B	B	B	B				B	B			
	680pF (681)	B	B	B	B	B	B	B	B	B	B	B									B	B	B	B	B				B	B	B		
	820pF (821)	B	B	B	B	B	B	B	B	B	B	B									B	B	B	B	B				B	B	B		
	1000pF (102)	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
	1200pF (122)	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
	1500pF (152)	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
	1800pF (182)	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
	2200pF (222)	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
	2700pF (272)	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
	3300pF (332)	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
	3900pF (392)	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
	4700pF (472)	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
	5600pF (562)	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
	6800pF (682)	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
	8200pF (822)	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
	0.01uF (103)	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
	0.012uF (123)	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
	0.015uF (153)	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
	0.018uF (183)	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
	0.022uF (223)	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
	0.027uF (273)	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
	0.033uF (333)	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
	0.039uF (393)	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
	0.047uF (473)	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
	0.056uF (563)	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
	0.068uF (683)	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
	0.082uF (823)	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
	0.1uF (104)	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
0.12uF (124)	B				B	B							B	B	B	B													B	B			
0.15uF (154)	B				B	B							B	B	B	B													B	B			
0.18uF (184)	B				B	B							B	B	B	B													B	B			
0.22uF (224)	B	B			B	B							B	B	B	B													B	B			
0.27uF (274)	B				B	B							B	B	B	B																	
0.33uF (334)	B				B	B							B	B	B	B																	
0.39uF (394)	B				B	B							B	B	B	B																	
0.47uF (474)	B	B			B	B							B	B	B	B																	
0.56uF (564)					B	B							B	B																			
0.68uF (684)					B	B							B	B																			
0.82uF (824)					B	B							B	B																			
1.0uF (105)	B				B	B							B	B																			
1.5uF (155)													B	B																			
2.2uF (225)	B				B	B							B	B																			
4.7uF (475)					B								B																				

- 1. The letter in cell is expressed the symbol of product terminations. B: (Cu/Ni/Sn)
- 2. RD30 type can use Mlcc size 1808 and 1812, RD21 type can use Mlcc size 0805 and 1206, but RD20 type can only use Mlcc size 0805.

Y5V Dielectric

Dielectric		Y5V																								
Size		0805						1206						1210						1812						
Voltage (VDC)		10	16	25	50	100	200	250	10	16	25	50	100	200	250	10	16	25	50	100	200	250	50	100	200	250
Capacitance	0.01uF (103)	B	B	B	B	B	B	B	B	B	B	B	B	B	B					B	B	B		B	B	B
	0.015uF (153)	B	B	B	B	B	B	B	B	B	B	B	B	B	B					B	B	B		B	B	B
	0.022uF (223)	B	B	B	B	B	B	B	B	B	B	B	B	B	B					B	B	B		B	B	B
	0.033uF (333)	B	B	B	B	B	B	B	B	B	B	B	B	B	B					B	B	B		B	B	B
	0.047uF (473)	B	B	B	B	B	B	B	B	B	B	B	B	B	B					B	B	B		B	B	B
	0.068uF (683)	B	B	B	B	B	B	B	B	B	B	B	B	B	B					B	B	B		B	B	B
	0.1uF (104)	B	B	B	B	B			B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
	0.15uF (154)	B	B	B	B				B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
	0.22uF (224)	B	B	B	B				B	B	B	B	B			B	B	B	B	B			B	B	B	B
	0.33uF (334)	B	B	B	B				B	B	B	B				B	B	B	B	B			B	B	B	B
	0.47uF (474)	B	B	B	B				B	B	B	B				B	B	B	B				B	B	B	B
	0.68uF (684)	B	B	B	B				B	B	B	B				B	B	B	B				B	B	B	B
	1.0uF (105)	B	B	B	B				B	B	B	B				B	B	B	B				B	B		
	1.5uF (155)	B	B						B	B	B					B	B	B					B			
	2.2uF (225)	B	B						B	B	B					B	B	B	B				B			
	3.3uF (335)	B	B						B	B	B					B	B	B					B			
	4.7uF (475)	B	B						B	B	B					B	B	B	B				B			
6.8uF (685)	B							B	B						B	B	B					B				
10uF (106)	B							B	B						B	B	B									
22uF (226)								B																		

☆ The letter in cell is expressed the symbol of product terminations. B: (Cu/Ni/Sn)

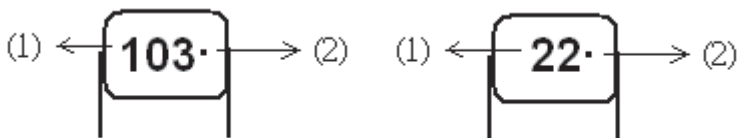
☆ RD30 type can use Mlcc size 1808 and 1812, RD21 type can use Mlcc size 0805 and 1206, but RD20 type can only use Mlcc size 0805.

Marking

Rated voltage (VDC)	10	16	25	50	100	200	250	500	630	1000	2000	3000
3-figure code Marking	<u>103</u>	<u>103</u>	<u>103</u>	103	<u>103</u>	<u>103</u>	<u>103</u>	<u>103</u>	<u>103</u>	<u>103</u>	<u>103</u>	<u>103</u>
2-figure code Marking	<u>22</u>	<u>22</u>	<u>22</u>	22	<u>22</u>	<u>22</u>	<u>22</u>	<u>22</u>	<u>22</u>	<u>22</u>	<u>22</u>	<u>22</u>

3-figure code Marking

2-figure code Marking



(1) Rated capacitance:

Two significant digits followed by no. of zeros. And R is in place of decimal point.

ex.: 0R5=0.5pF, 1R0=1.0pF, 104=10x104 =100nF

(2) Halogen and Pb free: There is a "." beside the capacitance code when the coating resin is Halogen and Pb free Epoxy.

MPQ (Min. Packing Quantity)

Y Cap. (AH and AC series)	Packing type	The code of 14th to 15th in SAP P/N		MPQ (Kpcs/Box)		Remark
	Taping	AF		1		
		AS		1		
		AM		1		For size code ≤ 11
		AM		0.5		For size code ≥ 12
Packing type	Lead length	Size code of 10th to 11th in SAP P/N	MPQ (Kpcs/Bag)	Kpcs/Box	Remark	
Bulk	Long lead (L \geq 20mm)	06~12	0.5	1.5		
		13-15	0.5	1		
	Short lead (L < 20mm)	06~14	0.5	2		

Disc DC Cap. (50V~6KVdc)	Packing type	The code of 14th to 15th in SAP P/N		MPQ (Kpcs/Box)		Remark
	Taping	AF		1		
		AM		0.5		
		AN		2		Phenolic resin
		AN		1.5		Epoxy resin
	Packing type	Lead length	Size code of 10th to 12th in SAP P/N	MPQ (Kpcs/Bag)	Kpcs/Box	Remark
	Bulk	Long lead (L \geq 20mm)	040~070	1	3	Phenolic resin
			080~100	1	2	Phenolic resin
			050~100	1	2	Epoxy resin
			110~120	0.5	1.5	
130~140			0.5	1		
Short lead (L < 20mm)		040~060	1	6		
		070~080	1	4		
		090~100	1	3		
		110~140	1	2		

RD Cap. (Multilayer Radial Leaded Type)	Packing type	The code of 16th to 17th in SAP P/N		MPQ (Kpcs/Box)		Remark
	Taping	TN		2		
		AN		2		Size of chip ≤ 0805
		AN		1.5		Size of chip > 0805
	Packing type	Lead length		MPQ (Kpcs/Bag)	Kpcs/Box	Remark
Bulk	Short lead(L < 20mm)		1	20		

Lined area for writing, consisting of multiple horizontal dashed lines.

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