

## How To Order

**J 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16**

**SERIES**

1-AC Y1  
 2-AC Y2  
 3-CLASS I  
 4-CLASS II  
 5-CLASS III

**FOOT TYPE**

A-HIGH SEATED  
 S-STRAIGHT LEAD  
 O-OUTWARD KINK  
 I-INSIDE KINK  
 ASSEMBLY  
 K-UP/DOWN KINK  
 AL:AXIAL  
 (FOR HIGH VOLTAGE)  
 ≥40KVDC

**COATING**

D:DUREZ  
 E:EPOXY BLUE  
 Y:EPOXY  
 YELLOW

N:RoHS

**CAPACITANCE**

0R5~0.5PF  
 010~1PF  
 100~10PF  
 101~100PF  
 102~1000PF  
 102~1nF  
 102~0.001 μ F  
 103~10000PF  
 103~10nF  
 103~0.01 μ F  
 104~100 n F  
 105~1 μ F  
 106~10 μ F

**WORKING VOLTAGE**

1C~16VDC  
 1E~25VDC  
 1H~50VDC  
 1J~63VDC  
 2A~100VDC  
 2E~250VDC  
 2G~400VDC  
 2H~500VDC  
 3A~1000VDC  
 1KVDC  
 3D~2000VDC  
 2KVDC  
 3E~2500VDC  
 2.5KVDC  
 3F~3000VDC  
 3KVDC  
 3G~4000VDC  
 4KVDC  
 3H~5000VDC  
 5KVDC  
 3J~6300VDC  
 (6000VDC)  
 6KVDC  
 3K=8000VDC  
 8KVDC  
 4A=10000VDC  
 10KVDC  
 4B=12000VDC  
 12KVDC  
 4C=15000VDC  
 15KVDC  
 4P=18KVDC  
 4D=20000VDC  
 20KVDC  
 4E=25KVDC  
 4F=30KVDC  
 4V=35KVDC  
 4G=40KVDC  
 4W=45KVDC  
 4H=50KVDC  
 4J=63KVDC  
 4K=80KVDC  
 5A=100KVDC  
 5B=125KVDC  
 5C=160KVDC  
 5D=200KVDC  
 5E=250KVDC

**FOOT LENGTH**

3:3 mm ±1mm  
 4:4 mm ±1mm  
 5:5 mm ±1mm  
 7:7 mm ±1mm  
 8:8 mm ±1mm  
 0:10mm ±1mm  
 M:17mm ±2mm  
 L:25mm ±2mm  
 S:35mm ±2mm  
 X:50mm ±2mm  
 T:Taping ±2mm

**PITCH ±0.8mm**

3:2.5mm  
 5:5.0mm  
 6:6.35mm  
 7:7.5mm  
 9:9.5(10) mm  
 1:12.5mm  
 4:15mm  
 2:20mm  
 H:OTHER(AXIAL OR SPACIAL TYPE)

**TOLERANCE**

C=±0.25PF  
 D=±0.5PF  
 G=±2%  
 J=±5%  
 K=10%  
 M=±20%  
 Z=+80-20%

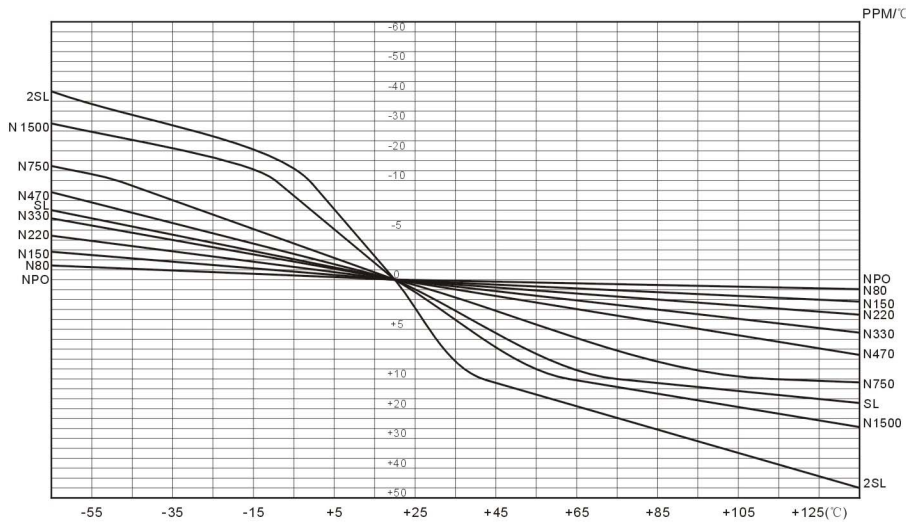
**TEMPERATURE CHARACTERISTIC**

NPO — NPO I  
 N75 — N750 I  
 SLO — SL I  
 2SL — 2SL I  
 X7R — X7R II  
 Y5E — Y5E II  
 Y5P — Y5P II III  
 Y5R — Y5R II  
 BNH — BN II  
 Y5T — Y5T II  
 Y5U — Y5U II III  
 Y5V — Y5V II III  
 Z5U — Z5U II  
 Z5V — Z5V II

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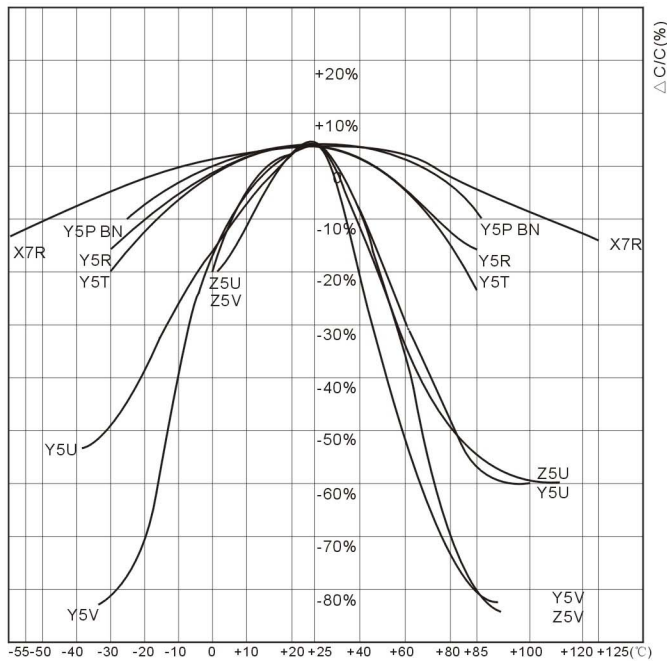
## 溫度特性曲綫圖 Capacitance and Temperature Curve

T.C.: Temperature compensating ceramic disc capacitors  
 溫度補償型陶瓷電容器 (Class I)



HK: High permittivity ceramic disc capacitors 高誘電型陶瓷電容器 (Class II)

S.C: Semi-conductive ceramic disc capacitors 半導體型陶瓷電容器 (Class III)



### Temperature Coefficient:

Code	T.R.	PPM/°C	EIA Code	Code	T.R.	Cap change	EIA Code	Code	T.R.	Cap Change	EIA code
CH	-55°C ~ 125°C	0±60~500	COH(NPO)	B	-25°C	±15%	Y5R	B	-55°C ~ +125°C	±15%	X7R
UJ	-55°C ~ 125°C	-750±120	U2J(N750)	B	+125°C	±10%	Y5P BN	B	-25°C ~ +125°C	±22%	Y5T
SL	-55°C ~ 125°C	+350~ -1000	S2L	E	+10°C	+22% ~ -56%	Z5U	E	-25°C ~ +125°C	+22%~-56%	Y5U
2SL	-55°C ~ 125°C	+2000~ -5000	2SL	F	+85°C	+22% ~ -82%	Z5V	F	-25°C ~ +85°C	+22%~-82%	Y5V

特 性 CHARACTERISTICS																											
項目 ITEM	規格 SPECIFICATION		檢測方法及條件 TEST METHOD AND CONDITION																								
1. 外觀、尺寸、標誌 Appearance, size and mark	無異常 Normal		依外觀、尺寸及標誌標準，尺寸用游標卡尺檢查、外觀、標誌用目視法檢驗； According to the standard of appearance, size and mark, size measured by vernier, appearance and marks test by visual.																								
2. 絕緣電阻 Insulation resistance	T.C.	10000MΩ MIN	端子間施加額定電壓，500VDC以上，以500VDC測定，測定時間為60秒以上。 Apply rated voltage. Above 500vdc rated voltage tested by 500vdc, Min. charged 60 seconds.																								
	HIK	5000MΩ MIN																									
	半導體 (S.C.)	100MΩ MIN																									
3. 耐電壓 Voltage proof	無破裂等明顯損壞異狀 No failure		端子間加工作電壓施壓1-5秒，充放電電流為50mA以下。電壓測試完後需存放於25°C的環境下，放置96hrs後方能測試其容量。 Applied as following T.V. 1-5s between terminal and less than 50mA current. Capacitor shall be measured capacitance after leaving for 96hrs at 25°C. W.V. < 500VDC      T.V = 200% × W.V. W.V. ≤ 1KVDC      T.V = 150% × W.V. W.V. < 2KVDC      T.V = 125% × W.V. (FOR DUREZ)      (EPOXY IN P9)																								
4. 靜電電容 Capacitance	在標準允許誤差內 Within the specified tolerance		使用頻率 (Test frequency): T.C.: < 1000PF 1MHz > 1000PF 1KHz HIK、半導體類 (S.C.) 1KHz 使用電壓 (Test voltage): T.C. HIK. 1.0 ± 0.2Vrms S.C. 0.1Vrms 使用溫度 (Temperature): 25°C ± 2°C																								
5. Q 值和散逸因素 Q AND DF	T.C.: ① C < 30PF: Q > 400 + 20xC ② C > 30PF: Q > 1000		測定條件同靜電容量之規定。 same condition as the capacitance																								
	HIK: ① Y5E, Y5P, Z5U, Y5U, X7R: DF < 2.5% ② Z5V, Y5V: DF < 5% ③ BN, Y5T: DF < 0.5%, Y5R: DF < 0.2% (Low Loss, Non RoHs)																										
	半導體類 (S.C.): ① Y5P, Y5U: DF < 5% ② Y5V, DF: < 7%																										
6. 溫度特性 Temperature characteristic (T.C.)	T.C.: C ≤ 4PF    TC ± 250PPM/°C C ≤ 9.9PF    TC ± 120PPM/°C C ≥ 10PF    TC ± 60PPM/°C SL TC P350-N1000		試驗步驟見下表: Test temperature <table border="1"> <thead> <tr> <th>Step</th> <th>Temp</th> <th>Temp</th> <th>Cap</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>25 ± 2°C</td> <td>T1</td> <td>C1</td> </tr> <tr> <td>2</td> <td>The low temp</td> <td>T2</td> <td>C2</td> </tr> <tr> <td>3</td> <td>25 ± 2°C</td> <td>T1</td> <td>C1</td> </tr> <tr> <td>4</td> <td>The high temp</td> <td>T2</td> <td>C2</td> </tr> <tr> <td>5</td> <td>25 ± 2°C</td> <td></td> <td></td> </tr> </tbody> </table> 溫度特性容量變化率的計算公式見下表 T.C. calculated by under formula ① T.C.: (PPM) $T.C. = \frac{C_2 - C_1}{C_1(T_2 - T_1)} \times 10^6$ ② HIK, S.C.: $T.C. = \frac{C_2 - C_1}{C_1} \times 100\%$	Step	Temp	Temp	Cap	1	25 ± 2°C	T1	C1	2	The low temp	T2	C2	3	25 ± 2°C	T1	C1	4	The high temp	T2	C2	5	25 ± 2°C		
	Step	Temp		Temp	Cap																						
1	25 ± 2°C	T1	C1																								
2	The low temp	T2	C2																								
3	25 ± 2°C	T1	C1																								
4	The high temp	T2	C2																								
5	25 ± 2°C																										
HIK, S.C.: Y5E: ± 4.7% Y5P, BN: ± 10% X7R, Y5R: ± 15% Y5T: ± 22% Y5U, Z5U: +22% - 56% Y5V, Z5V: +22% - 82%																											
7. 焊錫附着性及焊錫耐熱性 Resistance to solder heat and Solder ability of leads	外觀 Appearance	引綫周圍至少75%的面積均勻附錫，且本體無破裂等損壞現象。 Lead wire shall be soldered with uniformly coated on the axial direction over 75% of the circumferential direction, and no defect.																									



# CERAMIC DISC CAPACITORS CHARACTERISTICS



項目 ITEM	規格 SPECIFICATION		檢測方法及條件 TEST METHOD AND CONDITION															
7. 焊錫 附着 性及 焊錫 耐熱 性  Resistance to solder heat and Solder ability of leads	靜電容量 變化率 Capacitance Change	T.C.: ±5% or ±0.5PF	將元件端子線浸入240°C ±5°C的溶錫內，端子線浸至離本體邊緣2.0-3.0mm處，並保持3+1/-0秒。試驗前，將元件放置85+3/-0°C中預熱，5分鐘後再進行焊錫試驗；試驗後，元件須放置室溫中24小時後方可進行電氣特性的測試。  The lead wire shall be immersed into the melted solder of 240°C ±5°C up to about 2.0 to 3.0 mm from the main body for 3+1/-1 seconds. Capacitor shall be measured after leaving for 24 hours at room temperature.															
		HIK、S.C.: Y5E、Y5P、BN: ±10% X7R、Y5R: ±15% Y5T、Y5U、Z5U: ±20% Z5V、Y5V: ±30%																
	Q OR DF	T.C.: ①C<30PF: Q≥400+20xC ②C≥30PF: Q≥1000																
		HIK: ①Y5E, Y5P, X7R, Z5U, Y5U: DF≤2.5% ②Z5V, Y5V: DF≤5% ③BN, Y5T: DF≤0.5%, Y5R: DF≤0.2%  S.C.: ①Y5P, Y5U: DF≤5% ②Y5V: Df≤7%																
絕緣電阻 Insulation Resistance	T.C.: 10000M Ω min HIK: 5000M Ω min S.C.: 100M Ω min																	
8. 溫度循環 Temp. Cycle	外觀 Appearance	無缺陷 No marked defect	將電容器進行如下五個溫度循環試驗： Capacitor shall be subjected to five cycles of the temperature cycle as following:  <table border="1" data-bbox="1003 1048 1453 1227"> <thead> <tr> <th>Step</th> <th>Temp.(°C)</th> <th>Time</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Min rated temp(+0-3)</td> <td>30min</td> </tr> <tr> <td>2</td> <td>25</td> <td>30min</td> </tr> <tr> <td>3</td> <td>Max rated temp(+0-3)</td> <td>30min</td> </tr> <tr> <td>4</td> <td>25</td> <td>30min</td> </tr> </tbody> </table> 放置室溫下一段時間再測量其電氣特性： Measure at room temperature after cooling for: T.C.: 24Hr HIK、S.C.: 48Hr	Step	Temp.(°C)	Time	1	Min rated temp(+0-3)	30min	2	25	30min	3	Max rated temp(+0-3)	30min	4	25	30min
	Step	Temp.(°C)		Time														
	1	Min rated temp(+0-3)		30min														
	2	25		30min														
3	Max rated temp(+0-3)	30min																
4	25	30min																
靜電容量 Capacitance	T.C.: ±5% or ±0.5PF max. HIK、(S.C.): Y5E、Y5P、BN: ±10%; X7R、Y5R: ±15%; Y5T、Y5U、Z5U: ±20%; Z5V、Y5V: ±30%。																	
Q OR DF	T.C.: C<30PF: Q≥400+20xC C≥30PF: Q≥1000  HIK Y5E, Y5P, X7R, Y5U, Z5U DF≤5% Y5V, Z5V DF≤7.5% BN, Y5T DF≤1% Y5R DF≤0.5%  S.C. Y5P, Y5U DF≤7.5% Y5V DF≤10%																	
絕緣電阻 Insulation Resistance	與初始規格值一致 To satisfy the specified initial value.																	
9. 耐濕負荷 Humidity loading	外觀 Appearance	無顯著之異常現象 No marked defect	在溫度40(±2°C)、相對濕度95%的狀態下，連續施加直流額定電壓（充電電流為50mA以下）500(+24-0)小時；  試驗後置于室溫中： T.C.類規格需放置24小時以上方可測定其電氣特性； HIK、半導體類規格需放置48小時以上方可測定其電氣特性。  Apply rated voltage for 500(+24-0)hours at 40(±2°C) in 95% RH Charge and discharge current 50mA max.  Leave the capacitors in ambient condition for over the following time. Measurement T.C.: 24Hrs HIK、S.C.: 48Hrs															
	靜電容量 變化率 Capacitance Change	T.C.: ±7.5% or ±0.75PF max.  HIK、半導體類 (S.C.): Y5E、Y5P、BN: ±15% X7R、Y5R: ±20% Y5T、Y5U、Z5U: ±25% Z5V、Y5V: ±35%																
	Q OR DF	T.C.: ①C<10PF: Q≥200+10×C ②10PF≤C<30PF: Q≥275+2.5×C ③C≥30PF: Q≥350																
		HIK: Y5E, Y5P, X7R, Y5U, Z5U DF≤5% Y5V, Z5V DF≤7.5% BN, Y5T DF≤1% Y5R DF≤0.5%  半導體類 (S.C.): Y5P, Y5U DF≤7.5% Y5V Df≤10%																
絕緣電阻 Insulation resistance	500M Ω min.or 25M Ω XUF min.																	

項目 ITEM	規格 SPECIFICATION		檢測方法及條件 TEST METHOD AND CONDITION	
10. 高溫負荷 (壽命試驗) High temperature Loading (Loading life)	外觀 Appearance	無顯著之異常。 No marked defect.	<500VDC在試驗溫度下連續施加2倍W.V.≥500VDC,在試驗溫度下連續施加1倍W.V.(充電電流50mA以下)1000(+48-0)小時 <500VDC apply 2 times rated voltage, ≥500VDC apply 1 times rated voltage, at maximum operating temperature for 1000(+48-0)hours	
	靜電容量 變化率 Capacitance change	T.C.: ±7.5% or ±0.75PF;  HIK、半導體類(S.C.): Y5E、Y5P、BN: ±10%; X7R、Y5R: ±15%; Y5T、Y5U、Z5U: ±20%; Z5V、Y5V: ±30%。		
	Q or DF	T.C. C<30PF: Q≥200+10xC C≥30PF: Q≥500	Test temp.: T.C.、Y5E、Y5P、BN、Y5R、Y5T、Y5U、Z5U、Y5V、Z5V: 85°C ±5°C NPO N750、X7R: 125°C ±5°C Change or discharge current shall not exceed 50mA..  試驗後: 取出於室溫中, T.C.類需放置24小時以上方可測定; HIK、半導體類需放置48小時以上方可測定。	
		HIK. Y5E、Y5P、X7R、Y5U、Z5U DF≤5% Y5V、Z5V DF≤7.5% BN、Y5T DF≤1% Y5R DF≤0.5%		Capacitor shall be measured after leaving at room temperature T.C.: 24Hr HIK、S.C.: 48Hr
		半導體(S.C.): Y5P、Y5U DF≤7.5% Y5V DF≤10%		
絕緣電阻 Insulation resistance	T.C.: 1000MΩ min HIK: 500MΩ min S.C.: 25MΩ x UF min			
11. 端子強度 Strength of lead	抗拉強度 Pull		垂直固定被測物本體, 引線向下, 負荷施力方向為端線引出方向, 施加負荷為1.0kg, 時間為5秒 As a figure fix the body of capacitor, apply a tensile weight gradually to each lead in the radial direction of capacitor up to 1.0kg, and keep it for 5 secretary..	
	彎曲強度 Bending	導線不斷裂, 電容器本體不破損。 Lead wire shall not cut off and capacitor shall not be broken.	固定被測物, 施加0.5kg於端子引綫間并彎曲90°, 回復原來之位置, 并反向彎曲90°, 1次彎曲時間為5秒。 Each lead wire shall be subjected to 0.5kg weight and then a 90° bent, in one direction, return to original position and then a 90° bent in the opposite direction at the rate of one bent in 5 seconds..	
11. 儲存 Storage	必須存放于室溫5-35°C中且濕度≤75%的室內, 在此儲存條件下可保證3年的壽命。 Store all capacitors indoors at temperature of 5-35°C, humidity≤75%. They are warranted for a period of 3 years from the date of manufacture.			

# CAPACITANCE SIZE VOLTAGE TOLERANCE & LEAD SPACE(FOR DUREZ)



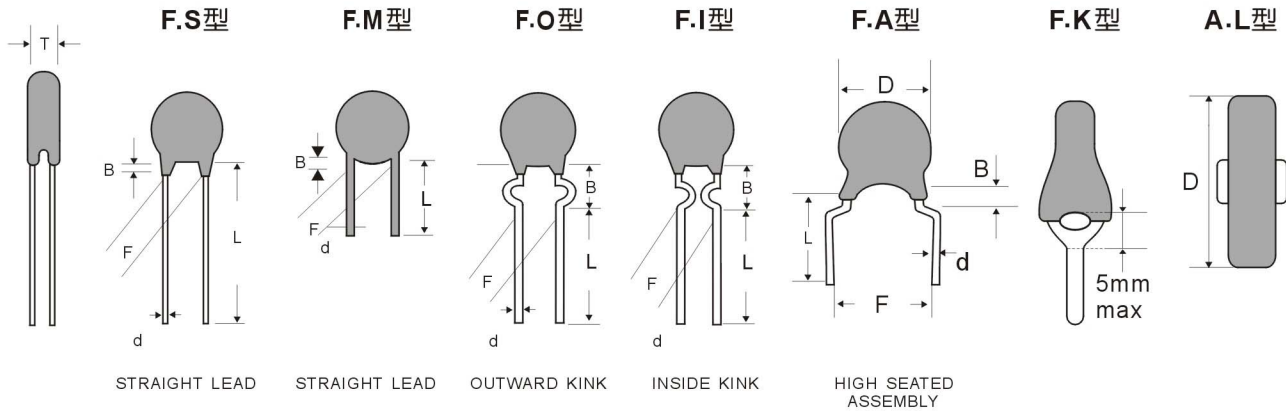
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WV	CLASS I		CLASS II			
	NPO	SL/2SL	X7R	Y5P(Y5E)	Y5U	Y5V/Z5V
25V (1E)	0.5~50PF 51~121 151~221 241~391	24~181PF 201~331 361~681 821~102	821~152 182~472 502~882 103	201~222 242~472 472~103	202~682 822~103	222~103 103~223
50V (1H)	0.5~50 51~121 151~221 241~391	24~181 201~331 361~681 821~102	821~152 182~472 502~822 103	201~222 242~472 472~103	202~682 822~103	222~103 103~223
100V (2A)	0.5~50 51~121 151~221 241~391	24~181 201~331 361~681 821~102	821~152 182~472 502~822 103	201~222 242~472 472~103	202~682 822~103	222~103 103~223
250V (2E)	0.5~50 51~121 151~221 241~391	24~181 201~331 361~681 821~102	821~152 182~472 502~822 103	201~222 242~472 472~103	202~682 822~103	222~103 103~223 333 473 104
500V (2H)	0.5~50 51~121 151~221 241~391	24~181 201~331 361~681 821~102	471~102 122~222 242~472 502~682 822 103	151~122 152~272 302~472 502~682 822~103	102~222 332~682 682~103 103	102~332 362~682 682~103 103~223 473~683 104
1KV (3A)	0.5~50 51~121 151~221 241~391	20~101 101~181 201~271 301~391 471~561 681 821~102	331~102 122~202 222~392 472~562 682 822 103	101~102 102~222 222~332 362~472 502~682 822 103	821~222 222~472 472~682 822~103	152~332 332~682 822~103

WV	CLASS III			D (MAX)	T (MAX)	P (±0.8)	D (±0.1)
	S.C.Y5P	S.C.Y5U	S.C.Y5V				
25V (1E)	472~223 333~473 563~683 104	153~473 683~104 104~224	103~473 183~154 104~224	6	3	2.5/5.0	0.45
				8	3	2.5/5.0	0.45
				10	3	5.0/7.5/10	0.45
				12	3	5.0/7.5/10	0.45
50V (1H)	472~223 333~473 563~683 104	153~473 683~104 104~224	103~473 503~104 104~224	6	3	2.5/5.0	0.45
				8	3	2.5/5.0	0.45
				10	3	5.0/7.5/10	0.45
				12	3	5.0/7.5/10	0.45
100V (2A)	472~223 333~473 563~683 104	153~473 683~104 104~154 154~224	103~473 503~104 104~224 204~224	6	3	2.5/5.0	0.45
				8	3	2.5/5.0	0.45
				10	3	5.0/7.5/10	0.45
				12	3	5.0/7.5/10	0.45
250V (2E)		153~333 473~104	103~473 503~104 104~224	6	3	2.5/5.0	0.45
				8	3	2.5/5.0	0.45
				10	3	5.0/7.5/10	0.45
				12	3	5.0/7.5/10	0.45
				14	3	7.5/10	0.5
16	3	7.5/10	0.5				
500V (2H)				6	3	5.0	0.45
				8	3	5.0/7.5	0.45
				10	3	5.0/7.5/10	0.45
				12	3	5.0/7.5/10	0.5
				14	3	7.5/10	0.5
16	3	7.5/10	0.5				
1KV (3A)				6	3	5.0	0.45
				8	3	5.0/7.5	0.45
				10	3	5.0/7.5/10	0.45
				12	3	5.0/7.5/10	0.5
				14	3	7.5/10	0.5
				16	3	10	0.5
18	3	10	0.6				



## 陶瓷電容器外形規格

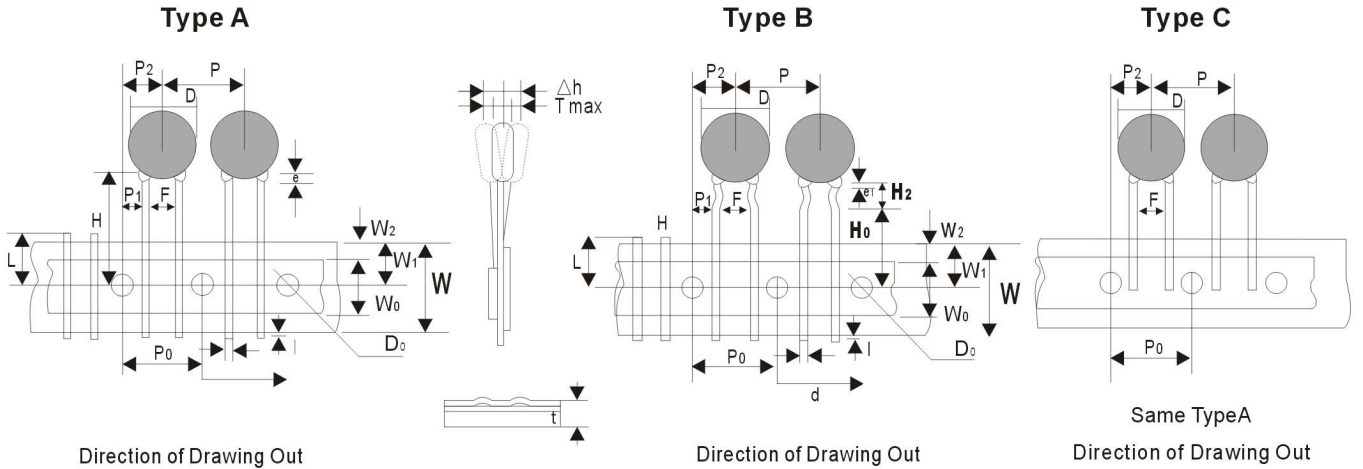


MODEL	Working Voltage	T (mm) (max)	d (mm) ±0.1	L (mm)	F (mm)	B (mm) (max)
F S	12~25	3	0.45~1.0	3~50	2.5 <sup>+1</sup> <sub>-0.5</sub> /5.0±0.8	2
	50~100	3			2.5 <sup>+1</sup> <sub>-0.5</sub> /5.0±0.8	2
	500	3			5.0±0.8	3
	1KV~3KV	5			5.0/6.35/7.5±0.8	3
	3KV~UP	20			7.5/10/12.5/15/20±1	3
F A	12~25	3	0.45~1.0	3~50	2.5 <sup>+1</sup> <sub>-0.5</sub> /5.0±0.8	2
	50~100	3			2.5 <sup>+1</sup> <sub>-0.5</sub> /5.0±0.8	2
	500	3			5.0±0.8	3
	1KV~3KV	5			5.0/6.35/7.5±0.8	3
	3KV~20KV	10			10±1	3
F O	12~25	3	0.45~0.8	3~50	5.0±0.8	5
	50~100	3			5.0±0.8	5
	500	3			5.0±0.8	5
	1KV~3KV	5			5.0/6.35/7.5±0.8	5
	3KV~20KV	10			5/7.5/10±1	5
F I	12~25	3	0.45~0.8	3~50	5.0±0.8	5
	50~100	3			5.0±0.8	5
	500	3			5.0±0.8	5
	1KV~3KV	5			5.0/6.35/7.5±0.8	5
	3KV~6.3KV	8			7.5/10±1	5
F K	1KV~3KV	5	0.45~0.8	3~50	5.0/6.35/7.5±0.8	5
	3KV~30KV	13			5/7.5/10±1	5
AL	10KV~250KV	40				

## CLASS 1,2,3/TAPING SPECIFICATIONS

### Taping(Radial)

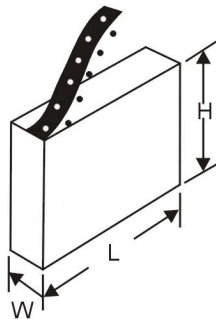
32



(Unit: mm)

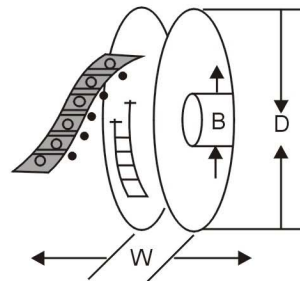
Item	Code	Dimensions(mm)	Item	Code	Dimensions(mm)	
Taping Pitch	P	$12.7 \pm 1.0 / 25.4 \pm 1.0$	Lead Protrusion	I	$+0.5 \sim 1.0$	
Guide Pitch	P <sub>0</sub>	$12.7 \pm 1.0 / 25.4 \pm 1.0$	Diameter of Feed Hole	D <sub>0</sub>	$4.0 \pm 0.3$	
Lead Spacing	F	$2.5/5.0/6.35/7.5/10/12.5/15 \pm 0.8$	Diameter of Lead	d	$0.50 \sim 0.8 \pm 0.1$	
Feed Hold Position Capacitor Body	P <sub>2</sub>	$6.35 \pm 1.3$ for F=5.25	Total Thickness of Tape	t	$0.7 \pm 0.3$	
Feed Hold Position Capacitor Lead	P <sub>1</sub>	$3.85 \pm 0.7$ for F=5.25	Thickness of Capacitor Body	T	<7	
Diameter of Disc	D	See table of each series	Alignment to ER Direction	Δh	$T \pm 2.0$	
			Length of Snipped Lead	L	$11.0^{+0}_{-0.1}$	
Width of Base Tape	W	$18.0 \pm 0.5$	Width of Hold-down Tape	W <sub>0</sub>	$6.0 \sim 15$	
Feed Hole Vertical Position	W <sub>1</sub>	$9.10^{+0.75}_{-0.5}$	Hold-down Tape Position	W <sub>2</sub>	$1.5 \pm 1.5$	
Taping Height	For Crimp	H	$18 \pm 2$	Coating Extension	e	1.5
	For Straight	H <sub>0</sub>	$16.0 \pm 1.0$	Coating Extension	e1	Up to center of crimp

### AMMO PACK



- H=241±5mm
- L=332±5mm
- W=42±3mm

### REEL



- D≤354(13.93)
- B≤21(.83") or ≤30(1.18")
- W≤65(2.56)