

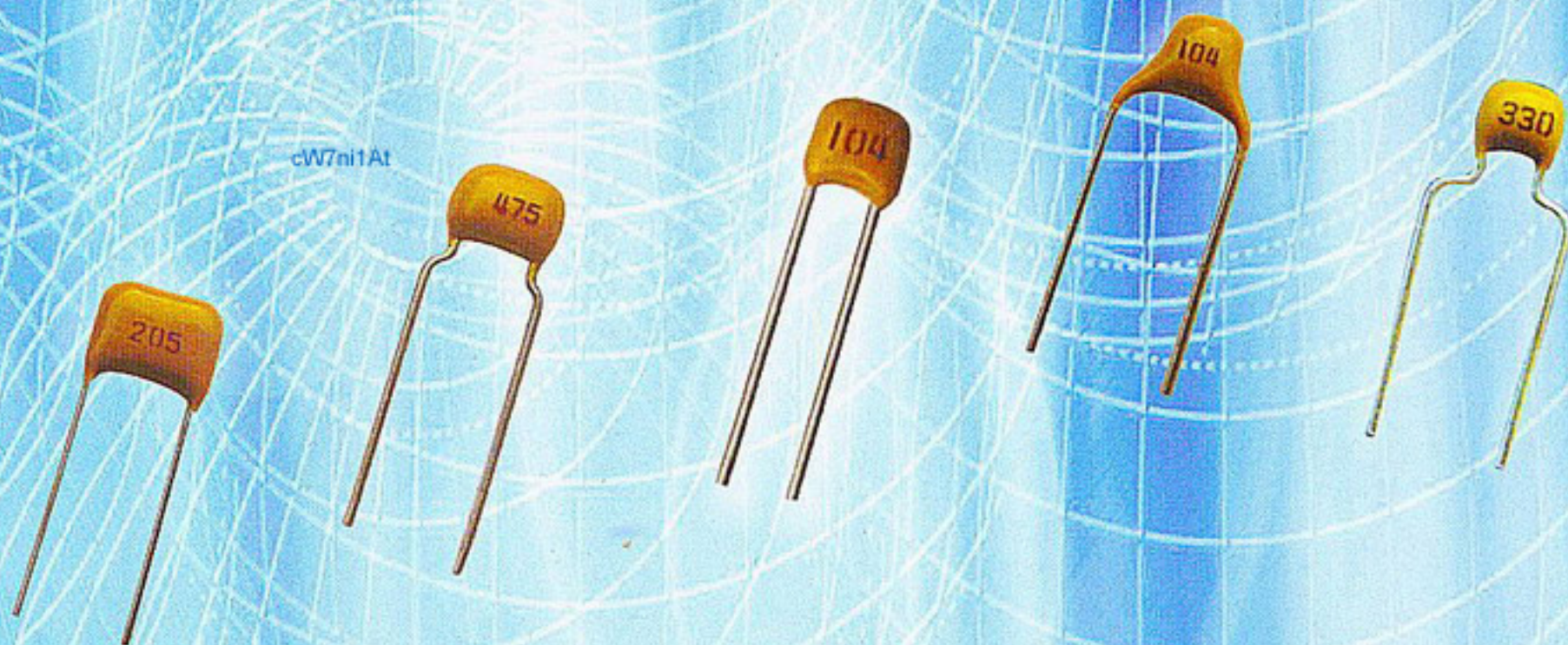


ISO 9001:2000 國際質量管理體系認證企業

引綫獨石電容器

Monolithic Capacitor

000111000111000110001100011000111000111000



安達 (香港) 電子有限公司
Andex (Hong Kong) Limited

香港公司: 香港九龍觀塘鴻圖道 80 號鴻圖工業大廈 8 字樓 4 室

Unit 4, 8/F, Hung To Industrial Building, 80 Hung To Road, Kwun Tong, Kowloon.

Tel: (852)2790 3299

Fax: (852)2763 5628



■ 引綫獨石電容器 (徑向、軸向) MONOLITHIC CAPACITOR (RADIAL、AXIAL)

● 特點 FEATURE

- * 體積小, 容量大, 絕緣電阻、擊穿電壓高等特點, 適合自動安裝的卷帶包裝。
Miniature size, wide capacitance, tape and reel
Packaging available for auto-placement.
- * 環氧樹脂封裝, 從而具有優良的耐壓、防熱、防震、抗潮性能, 在焊接及清洗時不損壞電容表面。
Coating by epoxy resin, creates the excellent humidity resistance and
Prevents body from damaging during soldering and washing.

● 性能介紹 BRIEF

溫度特性 T.C	NPO/COG	X7R(B)	Y5V(Y/F)	Z5U(E)
介質種類 DIELECTRIC TYPE	I 類電介質 STABLE CLASS I DIELECTRIC	II 類電介質 STABLE CLASS II DIELECTRIC		
電氣性能 ELECTRICAL PROPERTIES	電氣性能最穩定, 基本上不隨溫度、電壓和時間的改變而改變。 WITH NEGLIGIBLE DEPENDENCE OF ELECTRICAL PRO- PERTIES ON TEMPERATURE, VOLTAGE, FREQUENCY AND TIME	電氣性能較穩定, 在溫度、電壓與時間改變時性能的變化不顯著, 能造出比NPO介質容量更大的電容器。 WITH PREDICTABLE CHANGE OF PROPERTIES WITH TEMPERATURE, VOLTAGE, FREQUENCY AND TIME, THIS DIELECTRIC IS FERRO- ELECTRIC AND OFFERS HIGHER CAPACITANCE RANGES THAN CLASS I	具有較高的介電常數, 常用於生產比較大、標稱容量較高的大容量電容器產品, 但其容量穩定性能較X7R差, 容量損耗對溫度、電壓等條件較敏感。 WITH HIGH TWIST DIELECTRIC CON- STANT AND GREATER VARIATION OF PROPERTIES WITH TEMPERATURE AND TEST CONDITIONS, VERY HIGH CAPACITANCE PER UNIT VOLUME	
應用 APPLICATION	適用於對穩定性要求高的電路, 如溫度補償電路、高頻震蕩電路等。 USE IN CIRCUITS REQUIRING STABLE PERFORMANCE	適用於隔直、耦合、旁路與對容量穩定性要求不太高的整頻電路。 USE AS BLOCKING, COUPLING, BY-PASSING DISCRIMINATING ELEMENT	適用於要求容量較大的電路, 如儲能、記憶電路等。 SUITED FOR BY-PASSING AND COUPLING APPLICATION SUCH AS STORE POWER AND MEMORY CIRCUIT	
容量範圍 CAPACITANCE RANGE	1pF — 10nF	100pF — 5μF	1nF — 14.7μF	
溫度係數 OPERATING TEMPERATURE	0 ± 30ppm/°C -55°C+125°C	± 15% -55°C+125°C	+30% - 80% -25°C+85°C	+22% - 56% -10°C+85°C



● 容量變化及溫度特性、電壓、頻率曲綫圖

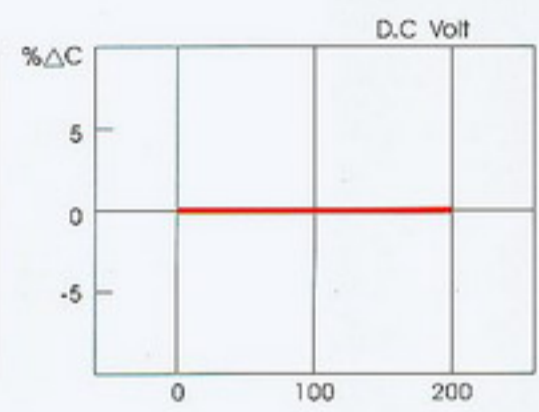
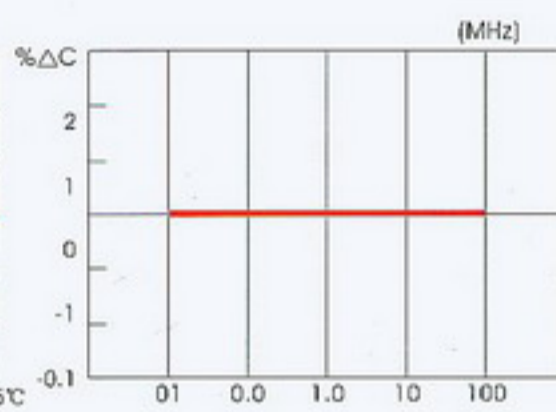
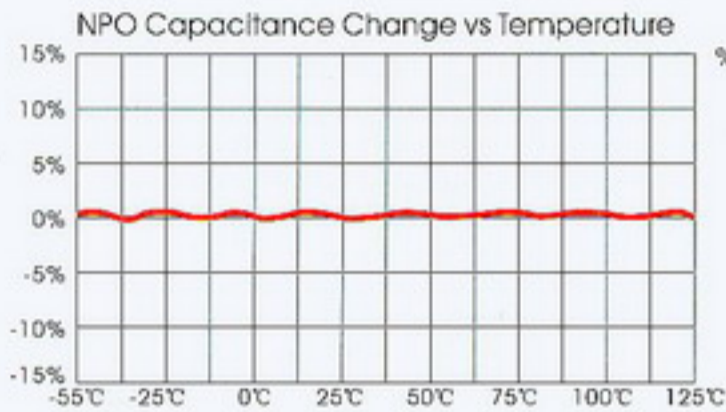
CAPACITANCE CHANGE VS TEMPERATURE CHARACTERISTIC; VOLTAGE; FREQUENCY PROFILES

* NPO

(1) 容量變化及溫度特性

(2) 頻率(Frequency)

(3) 直流電壓(DC voltage)

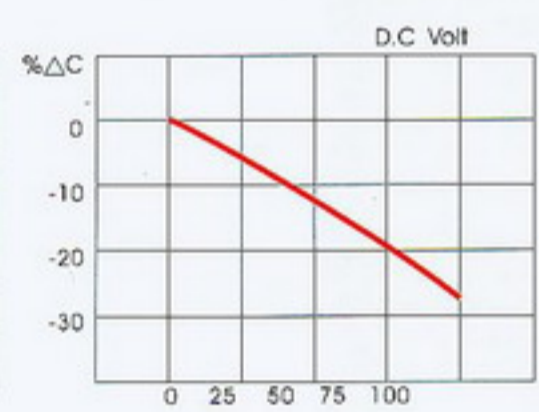
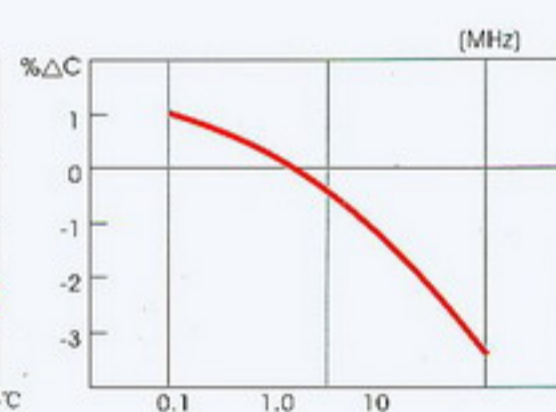
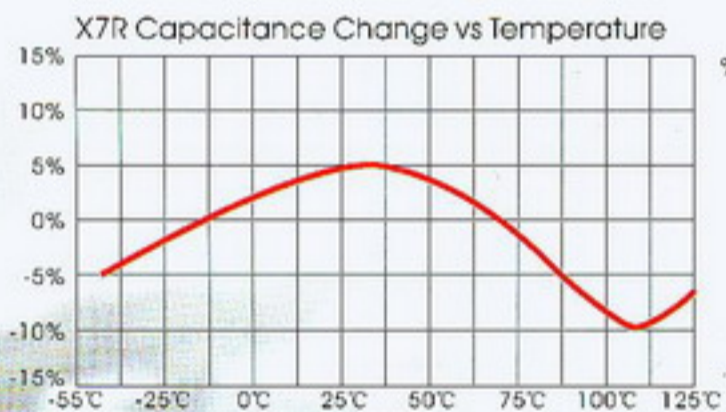


* X7R

(1) 容量變化及溫度特性

(2) 頻率(Frequency)

(3) 直流電壓(DC voltage)



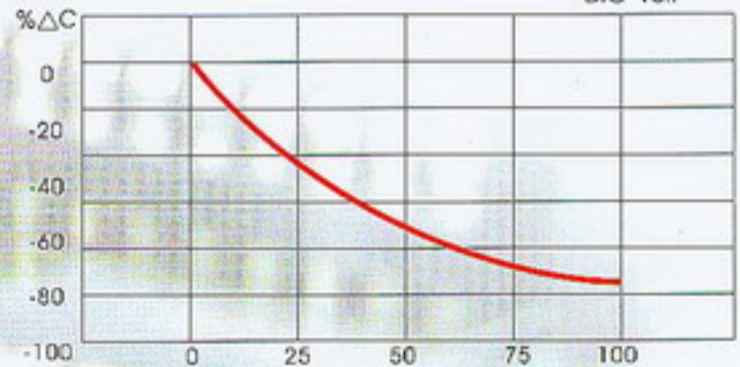
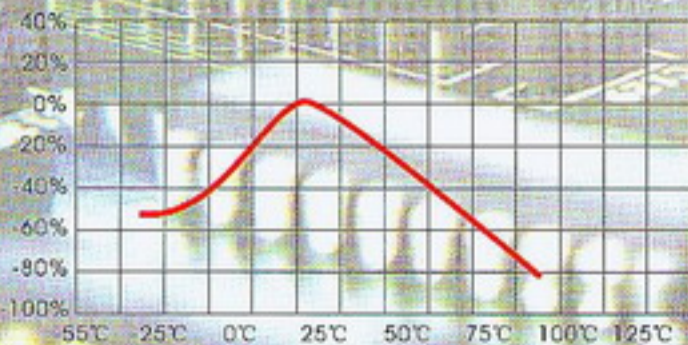
* Y5V

(1) 容量變化及溫度特性

(2) 直流電壓(DC voltage)

Y5V Capacitance Change vs Temperature

D.C Volt





● 電性能標準 ELECTRICAL PROPERTIES STANDARD

檢驗項目 ITEM	檢驗標準 TEST STANDARD		
	NPO(N)	X7R(B)	Z5U、Y5V(Y)
電容量 Capacitance	在相應的誤差範圍內 WITHIN THE TOLERANCE	在相應的誤差範圍內 WITHIN THE TOLERANCE	在相應的誤差範圍內 WITHIN THE TOLERANCE
損耗角正切 Dissipation Factor	≤0.15%	≤3.5%	≤5.0%(220nF以下) ≤7.0%(220 ~ 470nF) ≤9.0%(470 ~ 10μF)
絕緣電阻 Insulation Resistance	C≤10nF IR>10000MΩ C>10nF R.C>500ΩF	C≤25nF IR>4000MΩ C>25nF R.C>100ΩF	
耐電壓 Voltage Test	2.5倍標稱電壓，電流不超過50mA，5秒，無介質擊穿。 Test Voltage:2.5.rated voltage the charging current may not exceed 50mA,Duration of test :5 seconds.		
測試條件 TEST CONDITON			
容量、損耗 測試頻率 Frequency	1M Hz (C>1000pF,1KHz)	1K Hz	
容量、損耗 測試電壓 Test Voltage	1.0 VDC		0.5 VDC
絕緣電阻測試 電壓 Test Voltage pf IR	端子間加額定電壓，60±5秒後所讀值，充電電流不超過50mA The measuring voltage is equal to the rated voltage. The charging current may not exceed 50 mA		
標準測試環境 Test Environment Conditions	溫度：23±2℃，相對濕度：75%以下。 注：在非標準環境下測試，可能會導致測試結果偏差，在出現疑問時，請將待測試的電容置于標準測試環境溫度內20分鐘以上，然後進行測試。 Temperature: 23±2℃, Relatively Humidity: Below 75%. Notice:If test were processed under No-Standard Test Environment Conditions, test result would be error.Please deposit testing capacitors under standard Test Environment Conditions for at least 20 mins, then start to test.		



● 品質檢驗項目及可靠性試驗

QUALITY ITEM & RELIABILITY INSPECTION

項目 ITEM	檢驗標準 TEST SPECIFICATIONS	檢驗方法 TEST METHODS																																	
可焊性 Solderability	<p>覆蓋率不少於75%。 Termination area shall be at least 75% covered with a new solder coating.</p>	<p>將電容器引線浸入含25%鬆香的助焊劑溶液後，浸入焊槽溫度為$235^{\circ}\text{C} \pm 5^{\circ}\text{C}$的焊錫中$2 \pm 0.5$秒，浸入深度距離電容體$2.5 \sim 3.0\text{mm}$。 The lead wire of a capacitor shall be dipped into a 25% methanol solution of rosin and then into molten solder of $235^{\circ}\text{C} \pm 5^{\circ}\text{C}$ for 2 ± 0.5 seconds, in both cases the depth of dipping is up to about 2.5 to 3.0mm from the root of lead.</p>																																	
耐焊性 Resistance to soldering heat	<p>外觀無可見損傷，標志清晰 There shall be no evidence of damage or flash over during the test and sign in focus.</p> <table border="1"> <tr> <td>溫度特性T.C.</td> <td>$\Delta C/C \leq$</td> </tr> <tr> <td>NPO</td> <td>0.5%或0.5pF</td> </tr> <tr> <td>B</td> <td>$\pm 10\%$</td> </tr> <tr> <td>Y(F)/E</td> <td>$\pm 20\%$</td> </tr> </table> <p>D.F值，IR值與初始值相符 D.F,IR value are equal to original datas.</p>	溫度特性T.C.	$\Delta C/C \leq$	NPO	0.5%或0.5pF	B	$\pm 10\%$	Y(F)/E	$\pm 20\%$	<p>焊錫溫度$260^{\circ}\text{C} \pm 5^{\circ}\text{C}$，時間$5 \pm 0.5$秒，插入深度距電容體$2.5 \sim 3.0\text{mm}$，插入速度1秒，試驗後$24 \pm 2$小時測量。 The lead wire shall be immersed into the melted solder of $260^{\circ}\text{C} \pm 5^{\circ}\text{C}$, up to about 2.5 to 3.0mm from the main body for 5 ± 0.5 sec and the specified items shall be measured after leaving for 24 ± 2 hours.</p>																									
溫度特性T.C.	$\Delta C/C \leq$																																		
NPO	0.5%或0.5pF																																		
B	$\pm 10\%$																																		
Y(F)/E	$\pm 20\%$																																		
耐久性 Life test	<table border="1"> <tr> <td>外觀 Appearance</td> <td>外觀無可見損傷，標志清晰 There shall be no evidence of damage or flash over during the test and sign in focus.</td> </tr> <tr> <td>容量變化$\Delta C/C$ Capacitance change</td> <td>NPO: $\leq 3\%$; X7R: $\leq 20\%$ Y5V: $\leq 30\%$</td> </tr> <tr> <td>D.F.</td> <td>≤ 2倍初始標準 ≤ 2 times of original data</td> </tr> <tr> <td>IR</td> <td>R.C > $25\Omega.F$</td> </tr> </table>	外觀 Appearance	外觀無可見損傷，標志清晰 There shall be no evidence of damage or flash over during the test and sign in focus.	容量變化 $\Delta C/C$ Capacitance change	NPO: $\leq 3\%$; X7R: $\leq 20\%$ Y5V: $\leq 30\%$	D.F.	≤ 2 倍初始標準 ≤ 2 times of original data	IR	R.C > $25\Omega.F$	<table border="1"> <tr> <td>條件 Condition</td> <td>NPO</td> <td>X7R</td> <td>Y5V</td> <td>Z5U</td> </tr> <tr> <td>溫度 Temperature</td> <td colspan="2">$+125^{\circ}\text{C}$</td> <td colspan="2">$+85^{\circ}\text{C}$</td> </tr> <tr> <td>時間 Time</td> <td colspan="4">T=1000h</td> </tr> <tr> <td>電壓 Voltage</td> <td colspan="4">V=1.5Vr</td> </tr> <tr> <td>恢復時間 Recovery time</td> <td colspan="4">24 ± 1h</td> </tr> </table>	條件 Condition	NPO	X7R	Y5V	Z5U	溫度 Temperature	$+125^{\circ}\text{C}$		$+85^{\circ}\text{C}$		時間 Time	T=1000h				電壓 Voltage	V=1.5Vr				恢復時間 Recovery time	24 ± 1 h			
外觀 Appearance	外觀無可見損傷，標志清晰 There shall be no evidence of damage or flash over during the test and sign in focus.																																		
容量變化 $\Delta C/C$ Capacitance change	NPO: $\leq 3\%$; X7R: $\leq 20\%$ Y5V: $\leq 30\%$																																		
D.F.	≤ 2 倍初始標準 ≤ 2 times of original data																																		
IR	R.C > $25\Omega.F$																																		
條件 Condition	NPO	X7R	Y5V	Z5U																															
溫度 Temperature	$+125^{\circ}\text{C}$		$+85^{\circ}\text{C}$																																
時間 Time	T=1000h																																		
電壓 Voltage	V=1.5Vr																																		
恢復時間 Recovery time	24 ± 1 h																																		



■ 徑向引綫電容器 RADIAL LEADS MONOLITHIC CAPACITOR

● 訂貨方式 HOW TO ORDER

CT4 0805 Y 104 M 500 P
 ↓ ↓ ↓ ↓ ↓ ↓ ↓
 A B C D E F G



A:

產品類別 PRODUCT TYPE	
代號 CODE	類別 TYPE
CC4	I類徑向引綫電容器 CLASS I DIELECTRIC RADIAL LEADS
CT4	II類徑向引綫電容器 CLASS II DIELECTRIC RADIAL LEADS

B:

單位：英寸
UNIT: INCHES

芯片尺寸規格 (長 X 寬) CMOS CHIP SIZE (L X W)	
CODE	CHIP SIZE
0805	0.06X0.03/0.08X0.05
1206	0.12X0.06
1210	0.12X0.10
1812	0.18X0.12
2225	0.22X0.25
3035	0.30X0.35

C:

溫度特性 TEMPERATURE CHARACTERISTICS			
N	COG (NPO)	0 ± 30ppm/°C	(-55+125°C)
B	X7R	± 15%	(-55+125°C)
Y(F)	Y5V	+30 -80 %	(-25+85°C)
E	Z5U	+22 -56 %	(-10+85°C)

D:

標稱容量 CAPACITANCE
前兩位數字為有效數字，後一位數字表示零的個數。 FIRST TWO DIGITS ARE SIGNIFICANT THIRD DIGIT IS NUMBER OF ZEROS. 例如： FOR EXAMPLE: 104=100000pF 5R6=5.6pF

E:

容量偏差 TOLERANCE	
B	± 0.10pF
C	± 0.25pF
D	± 0.5pF
F	± 1.0%
G	± 2.0%
J	± 5.0%
K	± 10%
M	± 20%
N	± 30%
S	+50%-20%
Z	+80%-20%
P	+100%-0%

B.C.D適用C < 10PF
 B.C.D FOR C < 10PF
 NPO: B.C.D.F.G.J.K.M
 X7R: K.M.S.Z
 Y5V/Z5U: M.S.Z.P

F:

額定電壓 RATED VOLTAGE
代碼與標稱容量相似 THE CODE MEANING IS SAME AS CAPACITANCE 例如： FOR EXAMPLE: 250=25V 500=50V 101=100V

G:

包裝方式 Packaging Style		
編帶 Tape & Reel	P	盒帶包裝 Ammo
	T	卷盒包裝 Reel
散包裝 Bulk	F1	2.54mm
	F3	5.08mm
	F5	3.50mm

(F1, F3, F5表示腳距)