

**特點：**

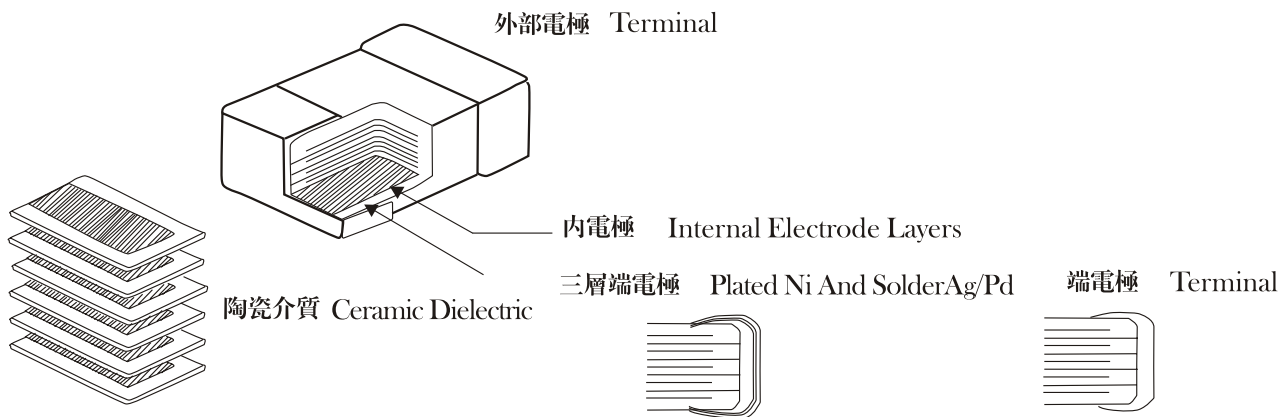
1. 产品尺寸精度高，便于自动贴片机高效率装配；
2. 端电极三层电极，适合波峰焊和回流焊；
3. 介电体与外表为同种材料，环境条件影响小，高绝缘电阻，高可靠性；
4. 含有从COG到Y5V各种温度特性介质，适用于通讯、计算机、家用电器和仪器仪表等普通电子设备。

**FEATURES**

1. Stringent dimensional tolerance allow highly reghly reliable,high speed automatic chip mounting on PCBS;
2. Terminal are plated with ni and solder,suited to flow and reflow soldering.
3. High insulation resistance and high reliability;
4. These capacitors have temperature characteristics ranging form COG to Y5V ,applied to general electronic equipment,instrument panel and household electrical appliances.

**產品結構圖**

**PERFORMANCE CHARACTERISTICS**



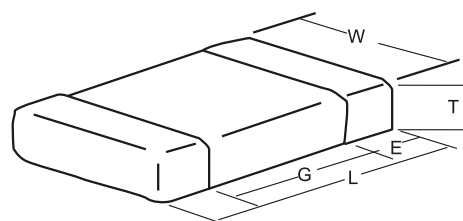
**產品型號代碼**

**ORDERING CODE**

例 Ex. :       $\frac{CB}{①}$        $\frac{0603}{②}$        $\frac{C}{③}$        $\frac{102}{④}$        $\frac{J}{⑤}$        $\frac{0.50}{⑥}$        $\frac{C}{⑦}$        $\frac{T}{⑧}$

**① 類別碼 TYPE CODE**

**② 尺寸碼 DIMENSIONS**



規格型號		尺寸 (mm)			
英制	公制	L	W	T	E
0201	0603	0.60±0.03	0.30±0.03	0.30±0.03	0.15±0.05
0402	1005	1.00±0.05	0.50±0.05	0.50±0.05	0.25±0.10
0603	1608	1.60±0.10	0.80±0.10	0.80±0.10	0.30±0.10
0805	2012	2.00±0.20	1.25±0.20	0.65±0.10	0.50±0.25
				0.85±0.10 1.00±0.10 1.25±0.20	
1206	3216	3.20±0.30	1.60±0.20	0.80±0.10 1.00±0.10 1.25±0.20	0.50±0.25
1210	3225	3.20±0.30	2.50±0.20	≤2.5	0.50±0.25
1808	4520	4.50±0.40	2.00±0.20	≤2.5	0.50±0.10
1812	4532	4.50±0.40	3.20±0.30	≤2.5	0.50±0.10
2220	5750	5.70±0.50	5.00±0.50	≤2.5	1.00±0.25
2225	5763	5.70±0.50	6.30±0.50	≤2.5	1.00±0.25

③ 温度特性碼 TEMPERATURE CHARACTERISTICS

代號 CODE	C	B	F
介質材料 Dielectric Material	COG或NPO	X7R	Y5V
使用溫度範圍 Temperature Range	-55~125℃		-30~85℃
溫度特性 Temperature Characteristics	0±30PPM/℃	±15%	+22-82%

④ 電容值碼 CAPACITANCE

代號 CODE	電容值 Capacitance(PF)	代號 CODE	電容值 Capacitance(PF)
0R5	0.5	102	1000
010	1	103	10000
100	10	104	100000
101	100	105	1000000

⑤ 电容误差码 CAPACI

代号 CODE	电容值 CAPACITANCE TOLERANCE	代号 CODE	电容值 Capacitance(PF)
C	±0.25PF	J	±5%
D	±0.5PF	K	±10%
F	±1%	M	±20%
G	±2%	Z	-80-20%

⑥ 额定电压 RATED VOLTAGE

代号 CODE	规格 CHARACTERISTIC	额定电压 RATED VOLTAGE
004	4	4V
006	6.3	6.3V
010	10	10V
016	16	16V
025	25	25V
035	35	35V
050	50	50V
100	100	100V
200	200	200V
250	250	250V
500	500	500V
630	630	630V
102	1000	1000V
202	2000	2000V
302	3000	3000V
402	4000	4000V
502	5000	5000V

⑦ 元件厚度 COMPONENTS THICKNESS

代号 CODE	厚度 THICKNESS
P	0.30±0.03MM
A	0.50±0.05MM
B	0.65±0.10MM
C	0.8±0.10MM
D	0.85±0.10MM
E	1.15±0.10MM
F	1.25±0.10MM
H	1.60±0.20MM
I	1.90±0.20MM
J	2.50±0.20MM
K	3.20±0.30MM

⑧ 包装 PACKAGING CODE

代号 CODE	包装 PACKAGING
B	袋散装 BULK PACKAGE IN A BAG
T	编带 TAPE&REEL PACKAGE

## COG (NPO) 介质电容器

### COG (NPO) DIELECTRIC CAPACITORS

COG(NPO)類介質電容器是最常用的溫度補償型電容器，屬於I類介質材料，其性能穩定。溫度系數在 $0 \pm 30 \text{ppm}/^\circ\text{C}$ 以內，電容值隨頻率和電壓的變化小於 $\pm 0.05\%$ ，具有好的高頻特性，Q值超過1000。

COG(NPO) is the most popular formulation of the "temperature-compensation" capacitor according to EIA, it is class I dielectric materials. COG(NPO) ceramics offer very stable capacitor dielectrics. And temperature coefficient is within  $0 \pm 30 \text{ppm}/^\circ\text{C}$ . Typical capacitance change with frequency and voltage is negligible at less than 0.05%. COG(NPO) formulations show no aging characteristics. COG(NPO) formulation usually have a "Q" in excess of 1000 and shows little capacitance.

#### 主要性能參數 PERFORMANCE CHARACTERISTICS

容值範圍 Capacitance Range	0.2pF~10nF
容差 Capacitance Tolerance	通常: $\pm 5\%$ , $\pm 10\%$ . Preferred $\pm 5\%$ , $\pm 10\%$ 當 $CR \leq 10 \text{pF}$ 時 $\pm 0.25 \text{pF}$ , $\pm 0.5 \text{pF}$ For values $\leq 10 \text{pF}$ , Preferred tolerance is $\pm 0.5 \text{pF}$ , also available $\pm 0.25 \text{pF}$
使用溫度 Operating Temperature Range	-55~125 $^\circ\text{C}$
溫度系數 Temperature Coefficient	$0 \pm 30 \text{ppm}/^\circ\text{C}$
額定電壓 Rated Voltage	25V, 50V, 100V, 200V
損耗或Q值 Dissipation Factor And "Q"	$CR \leq 30 \text{pF}$ $Q \leq 1000$ $CR < 30 \text{pF}$ $Q \leq 400 + 20CR$
絕緣電阻 Insulation Resistance	10 G $\Omega$ 以上 more than 10 G $\Omega$
耐壓 Dielectric Withstanding Voltage	2.5倍額定電壓 250% rated voltage
測試電壓 Test Voltage	$1 \pm 0.2 V_{\text{rms}}$
測試頻率 Test Frequency	$CR \leq 1000 \text{pF}$ 時, 1KHz For values $1000 \text{pF} \leq 1 \text{KHz}$ $CR \leq 1000 \text{pF}$ 時, 1MHz For values $1000 \text{pF} \leq 1 \text{MHz}$

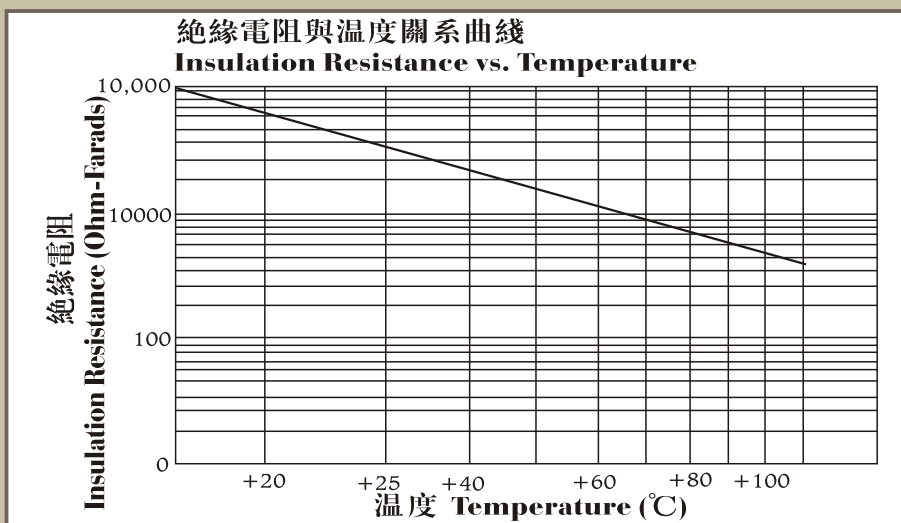
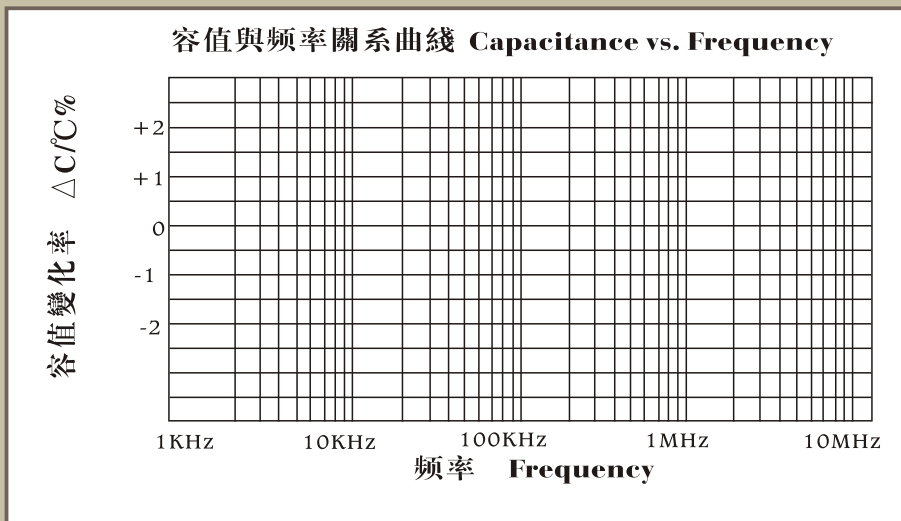
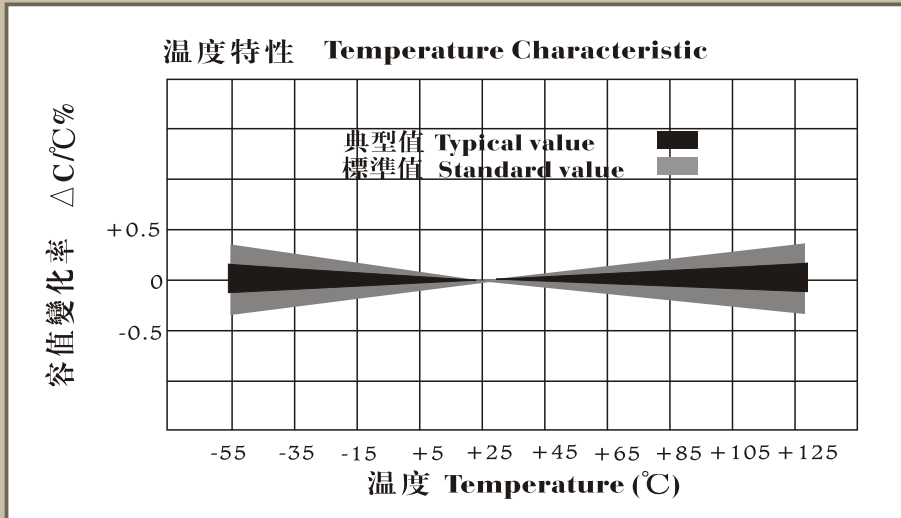
#### 尺寸與容值範圍 CAPACITANCE RANGE VS. CHIP SIZE

尺寸 Size	25V	50V	100V	200V
0402	--	0.2pF~100nF	--	--
0603	0.2pF~1.0nF	0.2pF~470nF	0.2pF~330nF	--
0805	0.5pF~4.7nF	0.5pF~2.2nF	0.5pF~1.0nF	0.5pF~470nF
1206	0.5pF~10nF	0.5pF~4.7nF	0.5pF~2.2nF	0.5pF~1.0nF



COG(NPO)介質電容器 COG(NOP) DIELECTRIC CAPACITORS

特征曲線 TYPICAL CHARACTERISTIC CURVES



## X7R 介質電容器 X7R DIELECTRIC CAPACITORS

X7R類介質電容器是在工業中廣泛使用的一種溫度穩定型電容器，屬於Ⅱ類介質材料，具有中等介電常數，在使用溫度(-55℃~+125℃)範圍內容值變化率在±15%以內，容值老化率為1%。

X7R formulations are called "temperature stable" ceramics and fall into eia class II dielectric materials.

X7R is the most popular of these intermediate dielectric constant materials. Its temperature variation of capacitance is within ±15% from -55 to 125°C. Its aging rate is 1%.

### 主要性能參數 PERFORMANCE CHARACTERISTICS

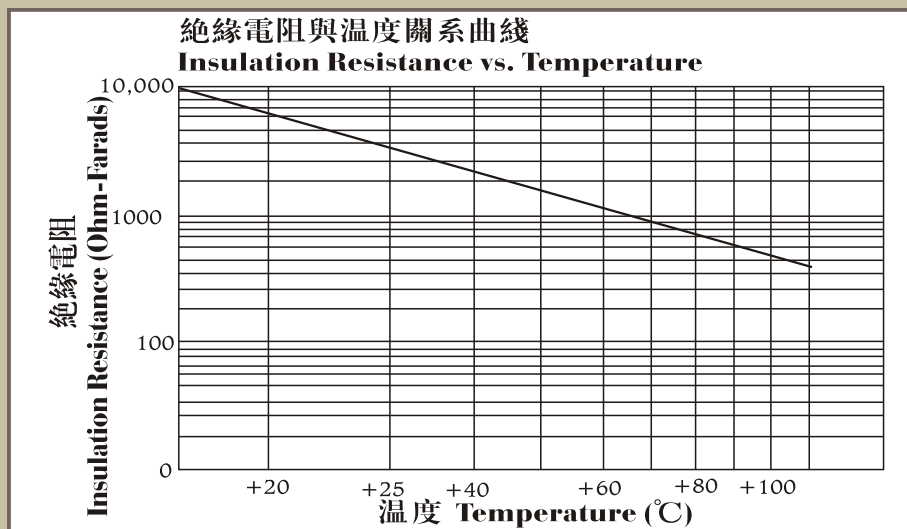
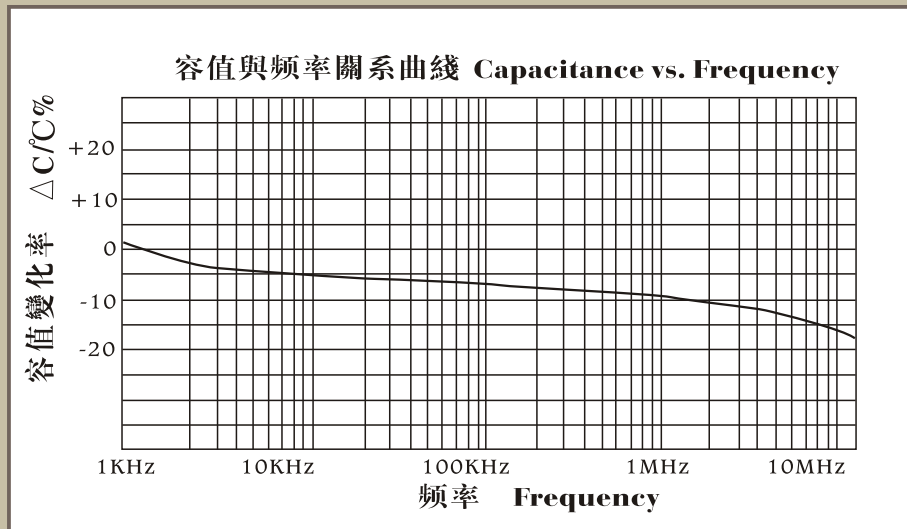
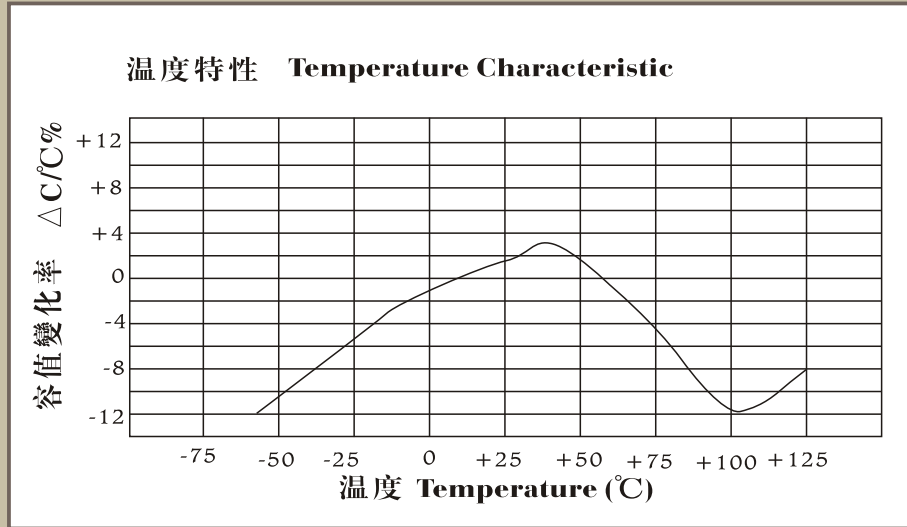
容值範圍 Capacitance Range	100pF~4.7nF
容差 Capacitance Tolerance	通常: ±10%, ±20%. Preferred ±10%, ±20%
使用溫度 Operating Temperature Range	-55~125°C
溫度特性 Temperature Characteristics	±15%以內 within ±15%
額定電壓 Rated Voltage	6.3V, 10V, 16V, 25V, 50V, 100V
損耗 Dissipation Factor	額定電壓6.3V時, DF ≤ 5.0% For 6.3V: DF ≤ 5.0% 額定電壓16V和10V時, DF ≤ 3.5% For 16V and 10V: DF ≤ 3.5% 額定電壓25V以上時, DF ≤ 2.5% For 25V min: DF ≤ 2.5%
絕緣電阻 Insulation Resistance	100GΩ或500Ω以上, 取最小值以上 100GΩ min. or 500Ω F min whichever is less
耐壓 Dielectric Withstanding Voltage	2.5倍額定電壓 250% rated voltage
測試電壓 Test Voltage	1±0.2Vrms
測試頻率 Test Frequency	1KHz

### 尺寸與容值範圍 CAPACITANCE RANGE VS. CHIP SIZE

尺寸 Size	10V	16V	25V	50V	100V
0402	100pF~47nF	100pF~22nF	100pF~10nF	100pF~4.7nF	--
0603	100pF~0.47μF	100pF~0.22μF	100pF~0.1μF	100pF~47μF	100pF~4.7nF
0805	1.0pF~2.2μF	100pF~1.0μF	100pF~0.47μF	100pF~0.22μF	100pF~22nF
1206	1.0pF~4.7μF	1.0pF~2.2μF	1.0pF~1.0μF	1.0pF~0.47μF	1.0pF~0.1μF

X7R 介質電容器 X7R DIELECTRIC CAPACITORS

特征曲綫 TYPICAL CHARACTERISTIC CURVES



## Y5V 介質電容器 Y5V DIELECTRIC CAPACITORS

Y5V類介質電容器是一種普通用途的電容器，在使用溫度(-30~+85°C)範圍內容值變化率較大，+22/-82%以內，具有高介電常數，可以用小的尺寸做大容量的電容。

Y5V formulations are for general-purpose use in a limited temperature range. They have a wide temperature characteristic of +22 / -82% capacitance change over the operating temperature range of -30 to +85 Y5V's high dielectric constant allows the manufacture of the highest capacitance value in given case size.

### 主要性能參數 PERFORMANCE CHARACTERISTICS

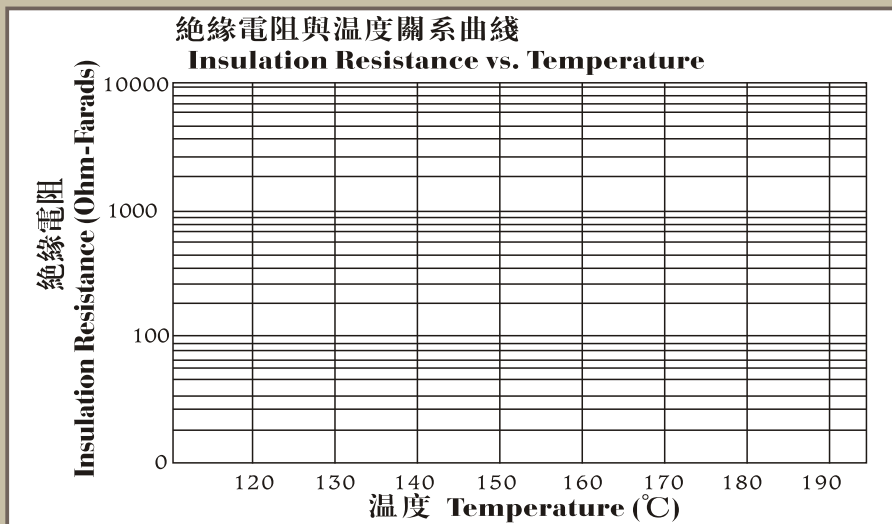
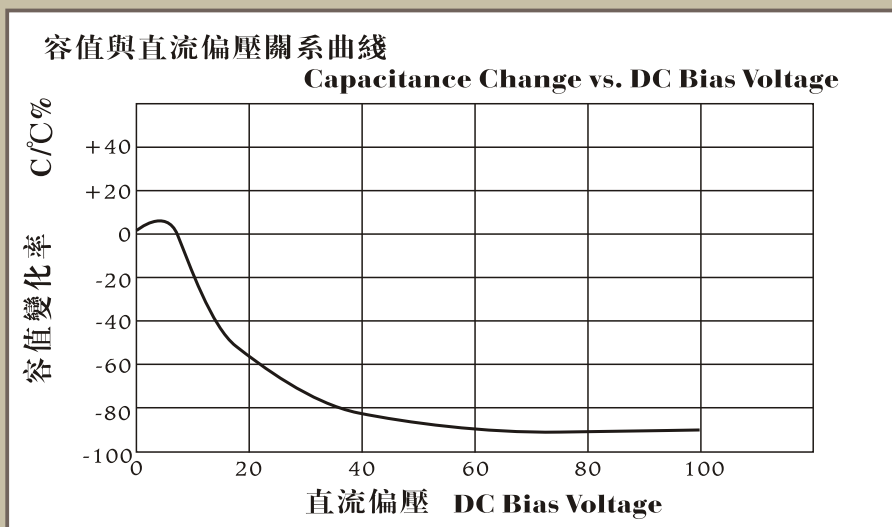
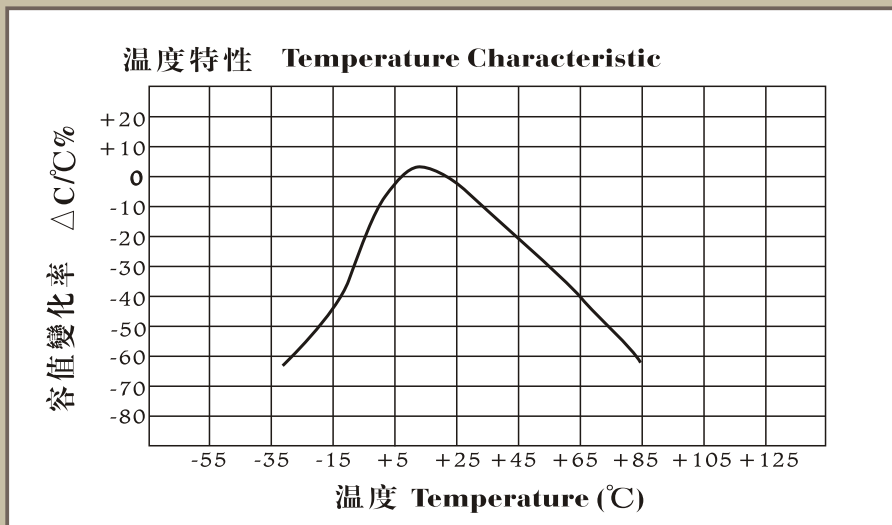
容值範圍 Capacitance Range	1000pF~10nF
容差 Capacitance Tolerance	±80%, -20%.
使用溫度 Operating Temperature Range	-30~85°C
溫度特性 Temperature Characteristics	±22%/-82%以內 within±22%/-82%
額定電壓 Rated Voltage	10V,16V,25V ,50v
損耗 Dissipation Factor	額定電壓10V時, DF ≤12.50% For 10V: DF≤12.50% 額定電壓16V, DF ≤9% For 16V :9.0% max 額定電壓25V以上時, DF ≤5.0% For 25V min: 5.0%max
絕緣電阻 Insulation Resistance	100GΩ或500Ω 以上, 取最小值以上 100G Ω min.or500 Ω F min whichever is less
耐壓 Dielectric Withstanding Voltage	2.5倍額定電壓 250% rated voltage
測試電壓 Test Voltage	1±0.2Vrms
測試頻率 Test Frequency	1KHz

### 尺寸與容值範圍 CAPACITANCE RANGE VS.CHIP SIZE

尺寸 Size	10V	16V	25V	50V
0402	1.0nF~0.33 μ F	1.0nF~0.1 μ F	1.0nF~0.33 μ F	1.0nF~10nF
0603	2.2nF~1.0 μ F	2.2nF~0.68 μ F	2.2nF~0.22 μ F	2.2nF~0.1 μ F
0805	10nF~4.7 μ F	10nF~2.2 μ F	10nF~1.0 μ F	10nF~0.47 μ F
1206	10nF~10 μ F	10nF~4.7 μ F	10nF~2.2 μ F	10nF~1.0 μ F

Y5V 介質電容器 Y5V DIELECTRIC CAPACITORS

特征曲線 TYPICAL CHARACTERISTIC CURVES



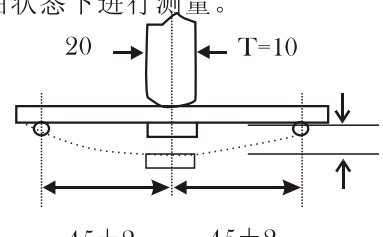
特点:

1. 产品尺寸精度高, 便于自动贴片机高效率装配;
2. 端电极为三层电极, 适合波峰焊和同流焊;
3. 介电体与外表为同种材料, 环境条件影响小, 高绝缘电阻, 高可靠性;
4. 含有从COG到Y5V各种温度特性介质, 适用于通讯、计算机、家用电器和仪器仪表等普通电子设备。

可靠性测试 Reliability Test

项目 Item	技术规格 Technical Specification				测试方法 Test Method and Remarks					
容量 Capacitance	I 类 Class I	应符合指定的误差级别 Should be within the specified tolerance.				标称容量 Capacitance	测试频率 Measuring Frequency	测试电压 Measuring Voltage		
						≤1000 pF	1MHZ±10%	1.0±0.2Vrms		
		>1000 pF	1KHZ±10%							
	II 类 Class II	应符合指定的误差级别 Should be within the specified tolerance.				C≤10 uF: 测试频率: 1KHZ±10% 测试电压: 1.0±0.2Vrms Test Frequency: 1KHZ±10% Test Voltage: 1.0±0.2Vrms				
						C>10 uF: X7R、Y5V: 测试频率: 120±24HZ 测试电压: 0.5±0.1Vrms Test Frequency: 120±24HZ Test Voltage: 0.5±0.1Vrms				
		Z5U: 测试频率: 1±0.1KHZ 测试电压: 0.5±0.05Vrms Test Frequency: 1±0.1KHZ Test Voltage: 0.5±0.05Vrms								
损耗角正切 (DF, tan δ) Dissipation Factor	I 类 Class I	DF≤0.15%				标称容量 Capacitance	测试频率 Measuring Frequency	测试电压 Measuring Voltage		
						≤1000 pF	1MHZ±10%	1.0±0.2Vrms		
						>1000 pF	1KHZ±10%			
	II 类 Class II	X7R	≥50V	25V	16V	10V	6.3V	C≤10 uF: 测试频率: 1KHZ±10% 测试电压: 1.0±0.2Vrms Test Frequency: 1KHZ±10% Test Voltage: 1.0±0.2Vrms		
≤2.5%			≤3.5%	≤3.5%	≤5.0%	≤5.0% (C<33uF) ≤10.0% (C<33uF)				
	Y5V Z5U	≥25V		16V	10V	6.3V	C>10 uF: X7R、Y5V: 测试频率: 120±24HZ 测试电压: 0.5±0.1Vrms Test Frequency: 120±24HZ Test Voltage: 0.5±0.1Vrms Z5U: 测试频率: 1±0.1KHZ 测试电压: 0.5±0.05Vrms Test Frequency: 1±0.1KHZ Test Voltage: 0.5±0.05Vrms			
≤7.0% (C<10uF) ≤9.0% (C≥10uF)		≤12.5%	≤12.5%	≤12.5%						
绝缘电阻 (IR) Insulation Resistance	I 类 Class I	C≤10 nF, Ri≥50000MΩ C>10 nF, Ri Cr≥500S				测试电压: 额定电压 测试时间: 60±5 秒 测试温度: ≤75% 测试温度: 25℃±5℃ 测试充放电电流: ≤50mA Measuring Voltage: Rated Voltage Duration: 60±5s Test Humidity: ≤75% Test Temperature: 25℃±5℃ Test Current: ≤50mA				
	II 类 Class II	X7R	C≤25 nF, Ri≥10000MΩ C>25 nF, Ri Cr≥100S							
			Y5V Z5U	C≤25 nF, Ri≥4000MΩ C>25 nF, Ri Cr≥100S						

项目 Item	技术规格 Technical Specification				测试方法 Test Method and Remarks
介质耐电强度(DWV) Dielectric Withstanding Voltage	不应有介质被击穿或损伤 No breakdown or damage				测量电压: I类: <b>300%</b> 额定电压 II类: <b>250%</b> 额定电压 时间: <b>1~5秒</b> 充/放电电流: 不应超过 <b>50mA</b> (这部分说明不包括中高压MLCC) Measuring Voltage: Class I :300% Rated voltage Class II : 250% Rated voltage Duration:1~5s Charge/Discharge Current:50mA max. (This method excludes high-voltage MLCC)
可焊性 Solderability	上锡率应大于 <b>95%</b> 外观: 无可见损伤。 At least 95% of the terminal electrode is covered by new solder Visual Appearance:No visible damage				将电容在 <b>80~120℃</b> 的温度下预热 <b>10~30秒</b> . Preheating conditions:80 to 120℃;10~30s
			有铅焊料: <b>(Sn/Pb:63/37)</b> 浸锡温度: <b>235±5℃</b> 浸锡时间: <b>2±0.5s</b> Solder Temperature:235±5℃ Duration:2±0.5s		无铅焊料: 浸锡温度: <b>245±5℃</b> 浸锡时间: <b>2±0.5s</b> Solder Temperature:245±5℃ Duration:2±0.5s
耐焊接热 Resistance to Soldering Heat	项目 Item	NPO至SL NPO toSL	X7R	Y5V、 Z5U	将电容在 <b>100~200℃</b> 的温度下预热 <b>10±2分钟</b> . 浸锡温度: <b>265±5℃</b> 浸锡时间: <b>5±1s</b> 然后取出溶剂清洗干净, 在 <b>10倍</b> 以上的显微镜底下观察。 放置时间: <b>24±2小时</b> 放置条件: 室温 Preheating conditions:100 to 200℃;10±2min. Solder Temperature:265±5℃ Duration:5±1s Clean the capacitor with solvent and examine it with a 10X(min)minicroscope. Recovery Time:24±2h Recovery condition:Room temperature.
	$\Delta C/C$	$\leq \pm 0.5\%$ 或 $\pm 0.5PF$ ,取较大值 $\leq \pm 0.5\%$ or $\pm 0.5PF$ ,whichever is larger	-5~+10%	-10~+20%	
	DF	同初始标准 Samc to initial valuc.			
	IR	同初始标准 Samc to initial valuc.			
	外观: 无可见损伤 上锡率: $\geq 95\%$ Appearance:No visible damage.At least 95% of the teminal electrode is coverd by new solder.				

项目 Item	技术规格 Technical Specification	测试方法 Test Method and Remarks																														
抗弯曲强度 Resistance to Flexure of Substrate (Bending Strength)	外观: 无可见损伤。 Appearance: No visible damage.	<p>试验基板: <math>Al_2O_3</math> 或 PCB 弯曲深度: 1mm 施压速度: 0.5mm/sec. 单位: mm 应在弯曲状态下进行测量。</p>  <p>Test Board: <math>Al_2O_3</math> or PCB Warp: 1mm Speed: 0.5mm/sec. Unit: mm The measurement should be made with the board in the bending position.</p>																														
端头结合强度 Termination Adhesion	外观无可见损伤 No visible damage.	<p>施加的力: <b>5N</b>      时间: <b>10 ± 1S</b> Applied Force: 5N      Duration: 10 ± 1S</p>																														
温度循环 Temperature Cycle	<p>I类: <math>\leq \pm 1\%</math>或<math>\pm 1pF</math>, 取两者中最大者 II类: B: <math>\leq \pm 10\%</math> E,F: <math>\leq \pm 20\%</math></p> <p>Class I: <math>\leq \pm 1\%</math> or <math>\pm 1pF</math>, whichever is larger. Class II: B: <math>\leq \pm 10\%</math> E,F: <math>\leq \pm 20\%</math></p>	<p>预处理* (2类): 上限类别温度, 1小时      恢复: <b>24 ± 1h</b> 初始测量 循环次数: <b>5次</b>, 一个循环分以下4步:</p> <table border="1"> <thead> <tr> <th>阶段</th> <th>温度( °C )</th> <th>时间(分钟)</th> </tr> </thead> <tbody> <tr> <td>第1步</td> <td>下限温度( <math>\frac{NPOX7R}{15V-25Z5U+10} -55</math> )</td> <td><b>30</b></td> </tr> <tr> <td>第2步</td> <td>常温 ( +20 )</td> <td><b>2~3</b></td> </tr> <tr> <td>第3步</td> <td>上限温度( <math>\frac{NPOX7R}{15V/Z5U} +125</math> )</td> <td><b>30</b></td> </tr> <tr> <td>第4步</td> <td>常温 ( +20 )</td> <td><b>2~3</b></td> </tr> </tbody> </table> <p>试验后放置(恢复)时间: <b>24 ± 2h</b> Preheating conditions: up-category temperature, 1h Recovery time: 24 ± 1h Initial Measurement Cycling Times: 5times, 1 cycle, 4steps:</p> <table border="1"> <thead> <tr> <th>Step</th> <th>Temperature( °C )</th> <th>Time(min)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Low-category temp. ( <math>\frac{NPOX7R}{15V-25Z5U+10} -55</math> )</td> <td>30</td> </tr> <tr> <td>2</td> <td>Normal temp. (+20)</td> <td>2~3</td> </tr> <tr> <td>3</td> <td>Up-category temp. ( <math>\frac{NPOX7R}{15V/Z5U} +125</math> )</td> <td>30</td> </tr> <tr> <td>4</td> <td>Normal temp. (+20)</td> <td>2~3</td> </tr> </tbody> </table> <p>Recovery time after test: 24 ± 1h</p>	阶段	温度( °C )	时间(分钟)	第1步	下限温度( $\frac{NPOX7R}{15V-25Z5U+10} -55$ )	<b>30</b>	第2步	常温 ( +20 )	<b>2~3</b>	第3步	上限温度( $\frac{NPOX7R}{15V/Z5U} +125$ )	<b>30</b>	第4步	常温 ( +20 )	<b>2~3</b>	Step	Temperature( °C )	Time(min)	1	Low-category temp. ( $\frac{NPOX7R}{15V-25Z5U+10} -55$ )	30	2	Normal temp. (+20)	2~3	3	Up-category temp. ( $\frac{NPOX7R}{15V/Z5U} +125$ )	30	4	Normal temp. (+20)	2~3
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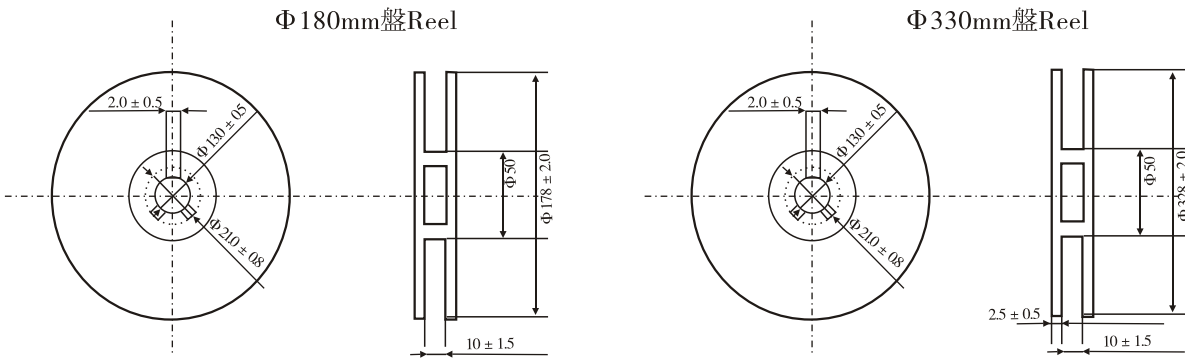
项目 Item	技术规格 Technical Specification		测试方法 Test Method and Remarks
潮湿试验 Moisture Resistance	$\Delta C/C$	I 类: $\leq \pm 2\%$ 或 $\pm 1pF$ , 取两者之中较大者 II 类: <b>B:</b> $\leq \pm 10\%$ <b>E,F:</b> $\leq \pm 30\%$ Class I: $\leq \pm 2\%$ or $\pm 1pF$ , whichever is larger. Class II: <b>B:</b> $\leq \pm 10\%$ <b>E,F:</b> $\leq \pm 30\%$	温度: $40 \pm 2^\circ C$ 湿度: $90 \sim 95\%RH$ 时间: 500小时
	DF	$\leq 2$ 倍初始标准 Not more than twice of initial value.	放置条件: 室温 放置时间: 24小时(I 类); 48小时(II 类)
	IR	I 类: $R_i \geq 2500M\Omega$ 或 $R_i \cdot C_R \geq 25S$ 取两者之中较小者. Class I: $R_i \geq 2500M\Omega$ 或 $R_i \cdot C_R \geq 25S$ whichever is smaller.	Temperature: $40 \pm 2^\circ C$ Humidity: $90 \sim 95\%RH$ Duration: 500h
		II 类: $R_i \geq 1000M\Omega$ 或 $R_i \cdot C_R \geq 25S$ 取两者之中较小者. Class II: $R_i \geq 1000M\Omega$ 或 $R_i \cdot C_R \geq 25S$ whichever is smaller.	Recovery conditions: Room temperature Recovery Time: 24h(Class I) or 48h(Class 2)
外观: 无损伤. Appearance: No visible damage.			
寿命试验 Life Test	$\Delta C/C$	I 类: $\leq \pm 2\%$ 或 $\pm 1pF$ 取两者之中较大者. II 类: <b>B:</b> $\leq \pm 20\%$ <b>E,F:</b> $\leq \pm 30\%$ Class I: $\leq \pm 2\%$ or $\pm 1pF$ , whichever is larger. Class II: <b>B:</b> $\leq \pm 20\%$ <b>E,F:</b> $\leq \pm 30\%$	低压产品 ( $< 100V$ ): 电压: 1.5倍额定工作电压 时间: 1000小时 充电电流: 不应超过50mA 放置条件: 室温
	DF	$\leq 2$ 倍初始标准 Not more than twice of initial value.	放置时间: 24小时(I 类), 或 48小时(II 类), Low-Voltage ( $< 100V$ ):
	IR	I 类: $R_i \geq 4000M\Omega$ 或 $R_i \cdot C_R \geq 40S$ 取两者之中较小者. Class I: $R_i \geq 4000M\Omega$ 或 $R_i \cdot C_R \geq 40S$ whichever is smaller.	Applied Voltage: $1.5 \times$ Rate Voltage Duration: 1000h Charge/Discharge Current: 50mA max
		II 类: $R_i \geq 2000M\Omega$ 或 $R_i \cdot C_R \geq 50S$ 取两者之中较小者. Class II: $R_i \geq 2000M\Omega$ 或 $R_i \cdot C_R \geq 50S$ whichever is smaller.	Recovery Conditions: Room Temperature Recover Time: 24h (Class 1), or 48h (Class 2)
外观: 无损伤. Visual Appearance: No visible damage.			
中高压产品 寿命试验 Middle & high voltage Life Test	$\Delta C/C$	I 类: $\leq \pm 2\%$ 或 $\pm 1pF$ , 取两者之中较大者 II 类: <b>B:</b> $\leq \pm 20\%$ <b>E,F:</b> $\leq \pm 30\%$ Class I: $\leq \pm 2\%$ or $\pm 1pF$ , whichever is larger. Class II: <b>B:</b> $\leq \pm 20\%$ <b>E,F:</b> $\leq \pm 30\%$	中高压产品: $100V \leq$ 额定电压 $< 500V$ : 2倍工作电压 $500V \leq$ 额定电压 $\leq 1000V$ : 1.5倍工作电压 额定电压 $> 1000V$ : 1.2倍工作电压 时间: 100小时 充电电流: 不应超过50mA 温度: $125^\circ C$ (NPO X7R); $85^\circ C$ (Y5V) 放置条件: 室温
	DF	$\leq 2$ 倍初始标准 Not more than twice of initial value.	放置时间: 24小时(I 类), 或 48小时(II 类), Applied Voltage:
	IR	I 类: $R_i \geq 4000M\Omega$ 或 $R_i \cdot C_R \geq 40S$ 取两者之中较小者. Class I: $R_i \geq 4000M\Omega$ 或 $R_i \cdot C_R \geq 40S$ whichever is smaller.	$100V \leq$ Rated Voltage $< 500V$ : 2Multiple $500V \leq$ Rated Voltage $\leq 1000V$ : 1.5Multiple $> 1000V$ Rated Voltage: 1.2Multiple Duration: 100h
		II 类: $R_i \geq 2000M\Omega$ 或 $R_i \cdot C_R \geq 50S$ 取两者之中较小者. Class II: $R_i \geq 2000M\Omega$ 或 $R_i \cdot C_R \geq 50S$ whichever is smaller.	Charge/Discharge Current: 50mA max. Temperature: $125^\circ C$ (NPO X7R); $85^\circ C$ (Y5V) Recovery Conditions: Room Temperature Recovery Time: 24h(Class 1), or 48h(Class 2)
外观: 无损伤. Visual Appearance: No visible damage.			

■ 電容器包裝 PACKAGE OF CAPACITORS

產品包裝 PACKAGING

編帶盤式包裝 Tape&Reel Package

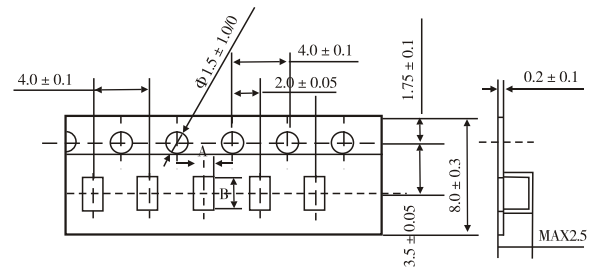
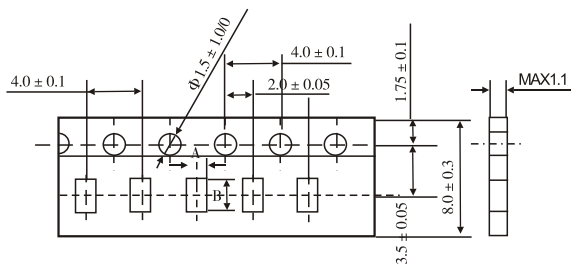
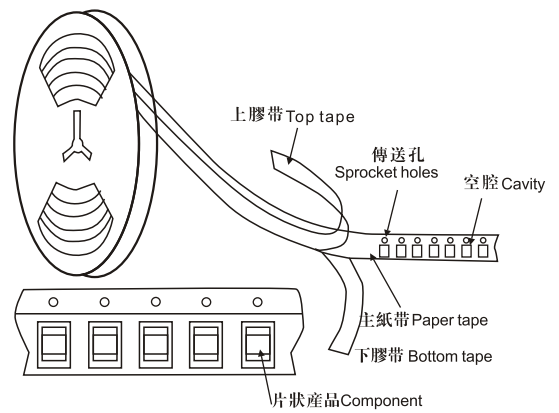
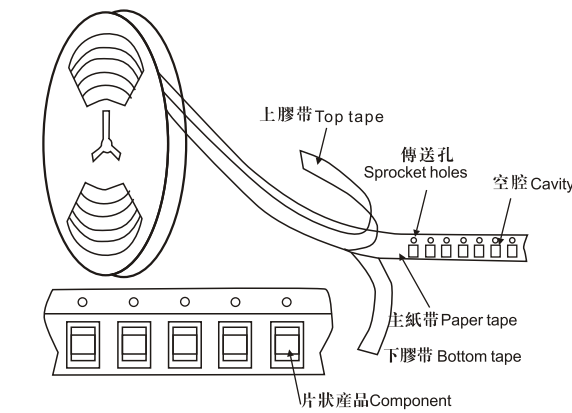
A. 編帶盤尺寸 Dimension of Reel



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B. 紙帶 Paper Tape

C. 塑料帶 Embossed Tape



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## 電容器包裝 PACKAGE OF CAPACITORS

型號 Type	A	B
0402	0.65±0.1	1.15±0.1
0603	1.05±0.1	1.85±0.1
0805 (T<1.0mm)	1.55±0.15	2.3±0.15
1206 (T<1.0mm)	2.0±0.2	3.6±0.2

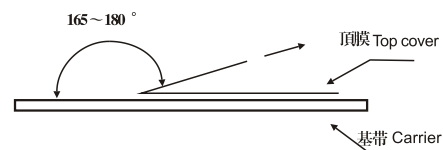
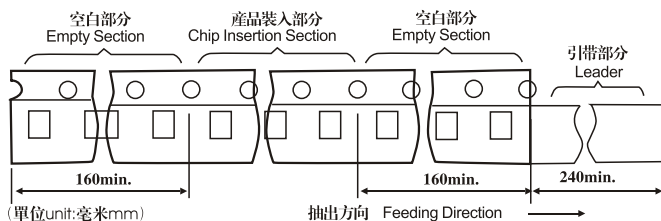
型號 Type	A	B
0805(T=1.25mm)	1.45±0.2	2.25±0.2
1206(T>1mm)	1.9±0.2	3.5±0.2

### 包裝要求

- (1) 包裝電容器的編帶是順時針卷繞的，由上往下的方向拉出編帶時，傳送孔處於編帶的右側。
- (2) 在編帶的前端，至少留出5個間距的引出帶。
- (3) 在編帶時，必須按下圖留出印帶部分或空白部分。
- (4) 在盤帶的安裝中的產品裝錯的數量每盤必須小6：表示數量的0.1%或1個為限，不連續發生錯誤。
- (5) 上膠帶和下膠帶不應超出編帶的邊緣，不能擋住傳送孔。
- (6) 傳送孔的累計誤差為10個間距：0.3毫米以內。
- (7) 上膠帶的剝離力矩應在0.1至0.6牛頓以內，其方向如右下图所示。

### Taping Method

- (1) Tapes for capacitors are wound clockwise. The sprocket holes are to the right as the tape is pulled toward the user.
- (2) The top tape and base tape are not attached at the end of the tape for a minimum of 5 pitches.
- (3) Part of the leader and part of the empty tape shall be attached to the end of the tape as following illustration
- (4) Number of missing capacitors is less than 0.1% of the total number quoted per reel or 1pc, whichever is greater, and are not continuous.
- (5) The top tape and bottom tape shall not protrude beyond the edges of the tape and shall not cover sprocket below.
- (6) Cumulative tolerance of sprocket holes, 10 pitches: ±0.3mm.
- (7) Peeling off force: 0.1 to 0.6n in the direction shown down.



- 袋式散裝數量：2000個/袋或按客戶要求 Bulk Packaging In A Bag.2000Pcs Or Customer-Made