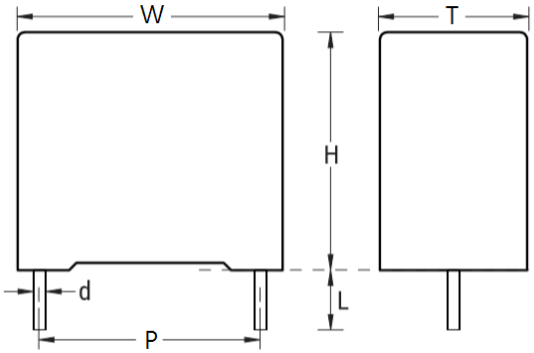
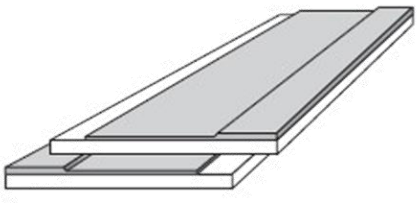
電磁干擾抑制電容器 (X2 類) - SMXW / SMXV series

EMI Suppression Capacitor, Class X2

■ **外形圖 Outline Drawing (For Example)**



■ **構造 Construction**



■ **典型應用**

適用於需要 X2 安全等級的跨線應用中的電磁干擾 (EMI) 抑制，用於電容器故障不會導致觸電的情況。不用於 “串聯電源” 型應用。

■ **Typical Applications**

For worldwide use in electromagnetic interference (EMI) suppression in across-the-line applications requiring X2 safety classification. Intended for use in situations where capacitor failure would not result in exposure to electric shock. Not for use in "series with mains" type applications.

■ **特徵**

金屬化聚丙烯薄膜徑向鍍錫引線，
電容器封裝在自熄耐溶劑塑料殼中，
採用符合 UL 94 V-0 要求的熱固性樹脂材料。

■ **Features**

Metallized polypropylene film with radial leads of tinned wire. The capacitor is encapsulated in a self-extinguishing solvent resistant plastic case with thermosetting resin material meeting UL 94 V–0 requirements.

■ **規格 Specifications**

參考標準 Reference Standard		GB/T 6346.14 (IEC 60384-14)	
容量範圍 Capacitance Range		0.001μF ~ 4.7μF	
容量誤差 Capacitance Tolerance		±10% (K)	
額定電壓 Rated Voltage (U_N)		275Vac (SMXW)	310Vac (SMXV)
氣候類別 Climatic Category		40/100/21	40/110/56
工作溫度範圍 Operating Temperature Range		-40℃~100℃	-40℃~110℃
被動可燃性等級 Passive Flammability Class		C	B
耐電壓 Voltage Proof	引線間 Between Terminals	U_N x 4.3 (DC), 60s	
	引線與外殼間 Between Terminal and Case	U_N x 200%+1500Vac, 60sec.	
損耗因素 Dissipation Factor		≤ 10 x 10^{-4} at 1kHz, (1Vrms Max. at 20℃)	
絕緣電阻 Insulation Resistance		C_R ≤ 0.33μF, IR ≥ 15000MΩ C_R > 0.33μF, IR x C_R ≥ 5000s (100Vdc, 60sec / 20℃)	

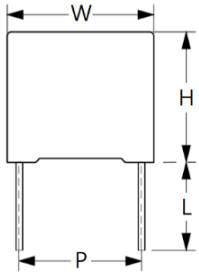
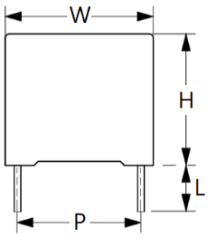
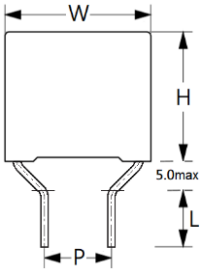
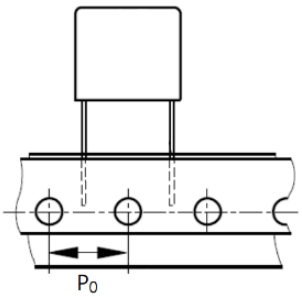
電磁干擾抑制電容器 (X2 類) - SMXW / SMXV series

EMI Suppression Capacitor, Class X2

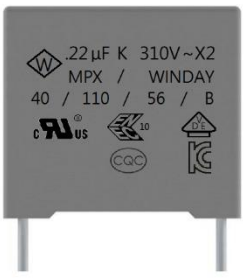
■ **產品代碼構成 Product code system (For Example)**

SMXV	G	104	K	D2X5	A	B	15	15
型號 Type	內部使用 Internal Use	容值 Capacitance	公差 Tolerance	外殼代碼 Case Code	交直流 AC/DC	引線成形 Lead Forming	引線間距 Lead Pitch	引線長度 Lead Length
SMXW= X2 275Vac **SMXV=** X2 310Vac	--	104 =100nF =0.1μF	K=±10%	D2X5=18*12*6 D3XX=18*13.5*7.5 D4XX=18*14.5*8.5 E4XX=26.5*19*10 F3XX=31*25*14	A=AC	(表一) Shown as Table I	08=7.5mm 10=10mm 15=15mm 23=22.5mm 28=27.5mm	04=3.5mm 15=15mm 23=23mm

(表一) Table I

引線成形 Lead Forming			
B (Straight 15mm)	**K** (Short)	**U** (Vertical Kink)	**T** (Taping)
			

■ **標示 Marking (For Example)**

Marking	
SMXW (275Vac)	SMXV (310Vac)
	
1. "W" is a trademark of WINDAY	2. Capacitance: .22μF indicates 0.22μF or 220nF
3. Capacitors Tolerance: K=±10%	4. Rated Voltage: 250V~/275V~ and 310V~
5. Capacitors Class: X2	6. Type of the Capacitors: MPX
7. Manufacturer: WINDAY	8. Climatic Category: GMF 40/100/21 and 40/110/56
9. Passive flammability category: B	10. Recognized Approval Mark

電磁干擾抑制電容器 (X2 類) -

EMI Suppression Capacitor, Class X2

■ Dimensions (mm)

275Vac (SMXW) / 310Vac (SMXV)						
Cap. μF	W	H	T	P	d	Part number
0.0010	10	9	4	7.5	0.6	SMXVI102KB3LTA*08**
0.0022	10	9	4	7.5	0.6	SMXVI222KB3LTA*08**
0.0033	10	9	4	7.5	0.6	SMXVF332KB3LTA*08**
0.0047	10	9	4	7.5	0.6	SMXVJ472KB3LTA*08**
0.0068	10	9	4	7.5	0.6	SMXVI682KB3LTA*08**
0.010	10	9	4	7.5	0.6	SMXVI103KB3LTA*08**
0.022	10	10	5	7.5	0.6	SMXVH223KB7LTA*08**
0.033	10	12	6	7.5	0.6	SMXVI333KB5LTA*08**
0.047	10	12	6	7.5	0.6	SMXVG473KB5LTA*08**
0.068	10	12	6	7.5	0.6	SMXVG683KB5LTA*08**
0.1	10	12	6	7.5	0.6	SMXVF104KB5LTA*08**
0.0010	13	9	4	10	0.6	SMXVJ102KC1XXA*10**
0.0010	13	11	5	10	0.6	SMXVJ102KC2X1A*10**
0.0022	13	9	4	10	0.6	SMXVI222KC1XXA*10**
0.0022	13	11	5	10	0.6	SMXVJ222KC2X1A*10**
0.0033	13	9	4	10	0.6	SMXVJ332KC1XXA*10**
0.0033	13	11	5	10	0.6	SMXVJ332KC2X1A*10**
0.0047	13	9	4	10	0.6	SMXVJ472KC1XXA*10**
0.0047	13	11	5	10	0.6	SMXVJ472KC2X1A*10**
0.0068	13	9	4	10	0.6	SMXVJ682KC1XXA*10**
0.0068	13	11	5	10	0.6	SMXVI682KC2X1A*10**
0.010	13	9	4	10	0.6	SMXVI103KC1XXA*10**
0.010	13	11	5	10	0.6	SMXVJ103KC2X1A*10**
0.022	13	9	4	10	0.6	SMXVH223KC1XXA*10**
0.022	13	11	5	10	0.6	SMXVI223KC2X1A*10**
0.033	13	9	4	10	0.6	SMXVG333KC1XXA*10**
0.033	13	11	5	10	0.6	SMXVH333KC2X1A*10**
0.047	13	9	4	10	0.6	SMXVF473KC1XXA*10**
0.047	13	11	5	10	0.6	SMXVG473KC2X1A*10**
0.068	13	11	5	10	0.6	SMXVG683KC2X1A*10**
0.068	13	12	6	10	0.6	SMXVG683KC3XXA*10**
0.10	13	11	5	10	0.6	SMXVF104KC2X1A*10**

275Vac (SMXW) / 310Vac (SMXV)						
Cap. μF	W	H	T	P	d	Part number
0.10	13	12	6	10	0.6	SMXVG104KC3XXA*10**
0.15	13	12	6	10	0.6	SMXVF154KC3XXA*10**
0.15	13	14	8	10	0.6	SMXVG154KC5LTA*10**
0.22	13	12	6	10	0.6	SMXVE224KC3XXA*10**
0.22	13	14	8	10	0.6	SMXVF224KC5LTA*10**
0.33	13	14	8	10	0.6	SMXVE334KC5LTA*10**
0.33	12.5	16.5	10.5	10	0.6	SMXVF334KC9XXA*10**
0.47	13	14	8	10	0.6	SMXVE474KC5LTA*10**
0.47	12.5	16.5	10.5	10	0.6	SMXVF474KC9XXA*10**
0.010	18	11	5	15	0.8	SMXVJ103KD1XXA*15**
0.022	18	11	5	15	0.8	SMXVJ223KD1XXA*15**
0.033	18	11	5	15	0.8	SMXVI333KD1XXA*15**
0.047	18	11	5	15	0.8	SMXVI473KD1XXA*15**
0.068	18	11	5	15	0.8	SMXVH683KD1XXA*15**
0.10	18	11	5	15	0.8	SMXVG104KD1XXA*15**
0.10	18	12	6	15	0.8	SMXVG104KD2X5A*15**
0.15	18	11	5	15	0.8	SMXVF154KD1XXA*15**
0.15	18	12	6	15	0.8	SMXVG154KD2XXA*15**
0.22	18	12	6	15	0.8	SMXVF224KD2XXA*15**
0.22	18	13.5	7.5	15	0.8	SMXVG224KD3X5A*15**
0.22	18	14.5	8.5	15	0.8	SMXVG224KD4X5A*15**
0.33	18	12	6	15	0.8	SMXVE334KD2XXA*15**
0.33	18	13.5	7.5	15	0.8	SMXVF334KD3XXA*15**
0.33	18	14.5	8.5	15	0.8	SMXVG334KD4XXA*15**
0.33	18	15.5	9.5	15	0.8	SMXVG334KD5XXA*15**
0.47	18	14.5	8.5	15	0.8	SMXVF474KD4XXA*15**
0.47	18	15.5	9.5	15	0.8	SMXVG474KD5XXA*15**
0.47	18	19	10.8	15	0.8	SMXVG474KD7XXA*15**
0.68	18	15.5	9.5	15	0.8	SMXVF684KD5XXA*15**
0.68	18	19	10.8	15	0.8	SMXVG684KD7XXA*15**
0.82	18	19	10.8	15	0.8	SMXVF824KD7XXA*15**
1.0	18	19.2	11.2	15	0.8	SMXVF105KD8X3A*15**

電磁干擾抑制電容器 (X2 類) -

EMI Suppression Capacitor, Class X2

■ Dimensions (mm)

275Vac (SMXW) / 310Vac (SMXV)						
Cap. μF	W	H	T	P	d	Part number
0.22	26.5	15	6	22.5	0.8	SMXVH224KE1XXA*23**
0.22	26.5	16.5	7	22.5	0.8	SMXVH224KE2XXA*23**
0.33	26.5	16.5	7	22.5	0.8	SMXVH334KE2XXA*23**
0.33	26.5	17	8.5	22.5	0.8	SMXVH334KE3X5A*23**
0.47	26.5	15	6	22.5	0.8	SMXVF474KE1XXA*23**
0.47	26.5	16.5	7	22.5	0.8	SMXVG474KE2XXA*23**
0.47	26.5	17	8.5	22.5	0.8	SMXVG474KE3X5A*23**
0.47	26.5	19	10	22.5	0.8	SMXVH474KE4X5A*23**
0.68	26.5	16.5	7	22.5	0.8	SMXVF684KE2XXA*23**
0.68	26.5	17	8.5	22.5	0.8	SMXVG684KE3XXA*23**
0.68	26.5	19	10	22.5	0.8	SMXVH684KE4XXA*23**
0.82	26.5	19	10	22.5	0.8	SMXVG824KE4XXA*23**
0.82	26	21.5	12	22.5	0.8	SMXVH824KE6XXA*23**
1.0	26.5	17	8.5	22.5	0.8	SMXVF105KE3XXA*23**
1.0	26.5	19	10	22.5	0.8	SMXVG105KE4XXA*23**
1.0	26	21.5	12	22.5	0.8	SMXVH105KE6XXA*23**
1.2	26.5	19	10	22.5	0.8	SMXVF125KE4XXA*23**
1.2	26	21.5	12	22.5	0.8	SMXVG125KE6XXA*23**
1.5	26.5	19	10	22.5	0.8	SMXVF155KE4XXA*23**
1.5	26	20	11	22.5	0.8	SMXVF155KE5XXA*23**
1.5	26	21.5	12	22.5	0.8	SMXVF155KE6XXA*23**
1.5	26.5	23	13	22.5	0.8	SMXVG155KE7XXA*23**
1.8	26	21.5	12	22.5	0.8	SMXVF185KE6XXA*23**
1.8	26	25	15	22.5	0.8	SMXVG185KE24LA*23**
2.2	26.5	23	13	22.5	0.8	SMXVF225KE7XXA*23**
2.2	26	25	15	22.5	0.8	SMXVG225KE24LA*23**

(1) The symbol * means style of lead forming

(2) The symbol ** means the lead length

275Vac (SMXW) / 310Vac (SMXV)						
Cap. μF	W	H	T	P	d	Part number
0.47	31	16	10	27.5	0.8	SMXVI474KF15XA*28**
0.47	31.5	19.5	10.8	27.5	0.8	SMXVI474KF1X5A*28**
0.68	31.5	19.5	10.8	27.5	0.8	SMXVH684KF1X5A*28**
0.82	31.5	19.5	10.8	27.5	0.8	SMXVH824KF1X5A*28**
0.82	31.5	21.5	13	27.5	0.8	SMXVH824KF2X5A*28**
1.0	31.5	19.5	10.8	27.5	0.8	SMXVG105KF1X5A*28**
1.0	31.5	21.6	13	27.5	0.8	SMXVH105KF2XXA*28**
1.0	31	25	14	27.5	0.8	SMXVI105KF3XXA*28**
1.2	31.5	19.5	10.8	27.5	0.8	SMXVG125KF1X5A*28**
1.2	31.5	21.6	13	27.5	0.8	SMXVH125KF2XXA*28**
1.5	31.5	19.5	10.8	27.5	0.8	SMXVG155KF1XXA*28**
1.5	31.5	21.6	13	27.5	0.8	SMXVG155KF2XXA*28**
1.5	31	25	14	27.5	0.8	SMXVH155KF3XXA*28**
1.8	31	25	14	27.5	0.8	SMXVG185KF3XXA*28**
2.0	31.5	19.5	10.8	27.5	0.8	SMXVF205KF1XXA*28**
2.0	31.5	21.6	13	27.5	0.8	SMXVF205KF2XXA*28**
2.0	31	25	14	27.5	0.8	SMXVG205KF3XXA*28**
2.2	31.5	21.6	13	27.5	0.8	SMXVF225KF2XXA*28**
2.2	31	25	14	27.5	0.8	SMXVG225KF3XXA*28**
2.2	31	29	15.5	27.5	0.8	SMXVH225KF31LA*28**
2.2	32	28	18	27.5	0.8	SMXVH225KF13XA*28**
2.5	31	25	14	27.5	0.8	SMXVG255KF3XXA*28**
3.0	31	25	14	27.5	0.8	SMXVF305KF3XXA*28**
3.3	32	28	18	27.5	0.8	SMXVG335KF13XA*28**
3.3	31	31	22	27.5	0.8	SMXVH335KF8XXA*28**
4.0	31	25	14	27.5	0.8	SMXVF405KF3XXA*28**
4.7	32	28	18	27.5	0.8	SMXVF475KF13XA*28**
4.7	31	31	22	27.5	0.8	SMXVG475KF8XXA*28**
4.7	41	28.5	16	37.5	0.8	SMXVF475KTB55A*38**
4.7	41.5	35.5	22.5	37.5	0.8	SMXVH475KJ20LA*38**

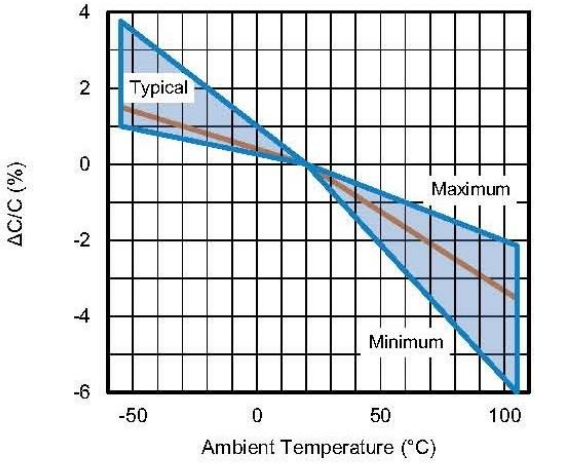
■ **檢驗要求 Inspection requirements**

<table>
<tr><th>試驗項目 Test items</th><th>性能要求 Performance requirements</th><th>試驗條件 Conditions of test</th></tr>
<tr><td rowspan="6">4.3 引出端強度
Robustness of terminations</td><td rowspan="6">無斷線, 電容器無可見損壞
No wire breakage and no damage of capacitor
最終測量結果 Final measurements
(1) 無可見損壞 No visible damage
(2) △C/C ≤ 5% of the initial value</td><td>拉力 Tensile U_{a1} (Duration : 10s±1s)</td></tr>
<tr><td>線徑 Wire diameter | 負載 Load</td></tr>
<tr><td>d ≤ 0.8mm | 10N (±10%)</td></tr>
<tr><td>d ≤ 1.25mm | 20N (±10%)</td></tr>
<tr><td>彎曲 Bending U_b (4*90°, duration : 2 times/bend)</td></tr>
<tr><td>線徑 Wire diameter | 負載 Load
d ≤ 0.8mm | 5N (±10%)
d ≤ 1.25mm | 10N (±10%)</td></tr>
<tr><td>4.4 耐焊接熱
Resistance to soldering heat</td><td>無預乾燥 No pre-drying,
焊接溫度 Solder bath: 260±5℃
焊接時間 Solder time: 5±0.5sec</td></tr>
<tr><td>4.5 可焊性
Solderability</td><td rowspan="5">無可見損壞, 標記清晰
No visible damage, Legible marking
最終測量結果 Final measurements
△C/C ≤ 5% of the initial value</td><td>焊接溫度 Solder temperature: 235±5℃
焊接時間 Solder time: 2±0.5sec</td></tr>
<tr><td>4.20 標記耐溶劑
Solvent resistance of the marking</td><td>溶劑 Solvent: Isopropyl alcohol
溶劑溫度 Solvent temperature: 25℃
擦拭材料 Rubbing material: Cotton wool
浸漬時間 Immersion time: 5 min</td></tr>
<tr><td>4.6 溫度快速變化
Rapid change of temperature</td><td>下限溫度 Lower temperature: -40℃
上限溫度 Upper temperature: 100 or 110℃
循環次數 Number of cycles: 5 times
持續時間 Duration t_1 = 30 min</td></tr>
<tr><td>4.7 振動
Vibration</td><td>頻率範圍 Frequency range: 10~55Hz
振幅軸向 Course: X、Y、Z (axis)
持續時間 2h / axis (6h in total)
位移振幅 Displacement amplitude: 0.75mm</td></tr>
<tr><td>4.8 碰撞
Bump</td><td>加速度 Acceleration: 400m/s^2, 4000 times
脈沖持續時間 Pulse duration: 6ms</td></tr>
<tr><td rowspan="2">4.11 氣候序列
Climatic sequence</td><td rowspan="2">無可見損壞, 標記清晰
No visible damage, Legible marking
最終測量結果 Final measurements
(1) △C/C ≤ 5% of the initial value
(2) Increase of tan δ over:
≤ 0.008 for C_N ≤ 1μF or ≤ 0.005 for C_N > 1μF
(3) Voltage proof:
No permanent breakdown or flashover
IR ≥ 50% of the applicable limits</td><td>乾熱 Dry Heat
上限溫度 Upper temperature: 100 or 110℃
持續時間 Duration: 16Hrs
濕熱循環 Damp heat, cyclic, Test Db,
第一次循環 First cycle</td></tr>
<tr><td>寒冷 Cold
下限溫度 Lower temperature: -40℃
持續時間 Duration: 2Hrs
濕熱循環 Damp heat, cyclic, Test Db,
剩餘循環 Remaining cycle</td></tr>
</table>

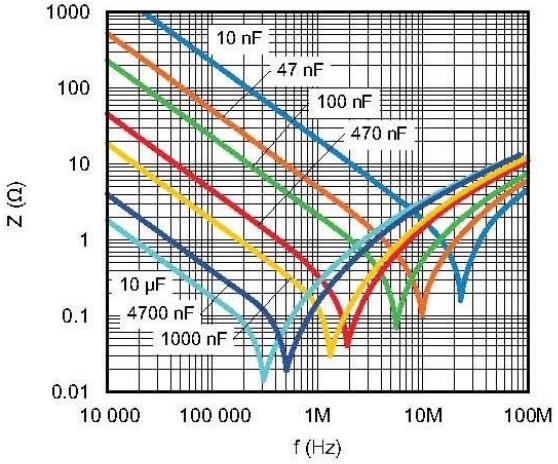
■ **檢驗要求 Inspection requirements**

<table>
<tr><th>試驗項目 Test items</th><th>性能要求 Performance requirements</th><th>試驗條件 Conditions of test</th></tr>
<tr><td>4.12 濕熱穩態
Damp Heat, Steady State</td><td>無可見損壞, 標記清晰
No visible damage, Legible marking
最終測量結果 Final measurements
(1) △C/C ≤ 5% of the initial value
(2) Increase of tan δ over:
≤ 0.008 for C_N ≤ 1μF or ≤ 0.005 for C_N > 1μF
(3) Voltage proof:
No permanent breakdown or flashover
(4) IR ≥ 50% of the applicable limits</td><td>溫度 Temperature: 40°C ±2°C
濕度 Relative humidity: 93±3%
持續時間 Duration: 21 or 56 days</td></tr>
<tr><td>4.14 耐久性
Endurance</td><td>無可見損壞, 標記清晰
No visible damage, Legible marking
最終測量結果 Final measurements
(1) △C/C ≤ 10% of the initial value
(2) Increase of tan δ over:
≤ 0.008 for C_N ≤ 1μF or ≤ 0.005 for C_N > 1μF
(3) Voltage proof:
No permanent breakdown or flashover
(4) IR ≥ 50% of the applicable limits</td><td>額定電壓 x 125%, 每小時上升至 1000VAC 0.1 秒
上限類別溫度, 1000 小時
1.25 x U_R VAC 50 Hz, once every hour
increase to 1,000VAC for 0.1 second,
1,000 hours at upper category temperature</td></tr>
<tr><td>4.15 充電和放電
Charge and discharge</td><td>最終測量結果 Final measurements
(1) △C/C ≤ 10% of the initial value
(2) Increase of tan δ over:
≤ 0.008 for C_N ≤ 1μF or ≤ 0.005 for C_N > 1μF
(3) IR ≥ 50% of the applicable limits</td><td>實驗電壓 Test voltage : √2 x U_R VDC
充放電 Charge and discharge: 1 sec/time
重複次數 Repeated for 10000 cycles</td></tr>
<tr><td>4.17 阻燃性試驗
Passive flammability test</td><td>電容器移開火焰後，B 類電容器持續燃燒時間不得超過 10s，C 類電容器持續燃燒時間不得超過 30s
After removing test flame from capacitor,
The capacitor must not continue to burn for more than 10s for Class B, To 30s for Class C
棉紙不得點燃 The tissue paper shall not ignite</td><td>實際體積 V 的試驗持續時間: (單位: mm3)
Test duration for actual volume V in mm3:
<table>
<tr><th>Class</th><th>250<V≤500</th><th>500<V≤1750</th><th>V>1750</th></tr>
<tr><td>B</td><td>20</td><td>30</td><td>60</td></tr>
<tr><td>C</td><td>10</td><td>20</td><td>30</td></tr>
</table></td></tr>
<tr><td>4.18 自燃性試驗
Active flammability test</td><td>連接至 U_{RAC} 的試驗電容器上 20 次 2.5kV 放電循環
20 cycles of 2.5kV discharges on the test capacitor connected to U_{RAC}</td><td>電容器周圍的紗布不得燃燒
The cheese cloth around the capacitors shall not burn with a flame</td></tr>
</table>

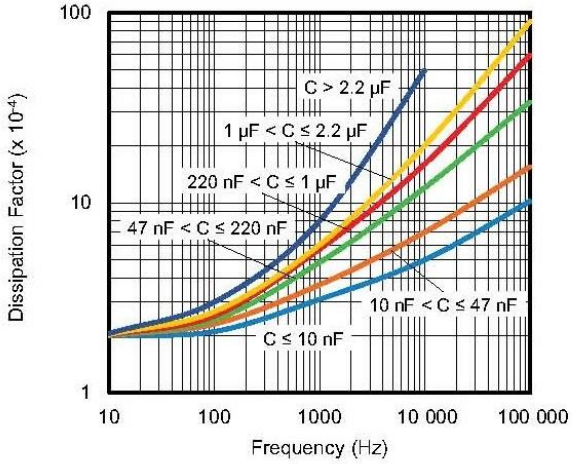
■ 特性 Characteristics



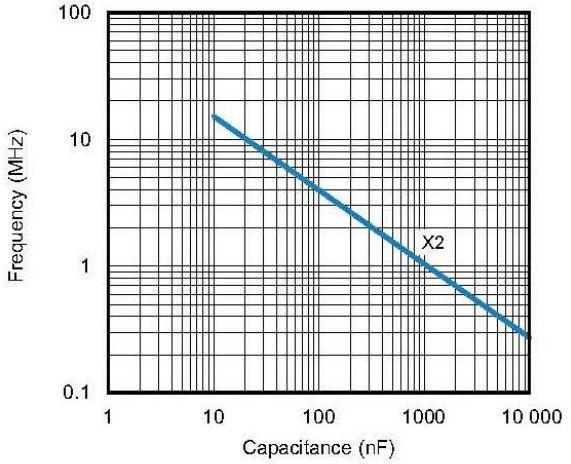
Capacitance as a function of ambient temperature
(typical curve)



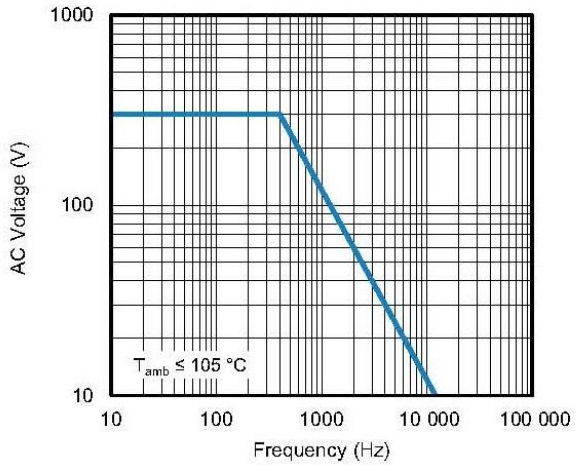
Impedance as a function of frequency
(typical curve)



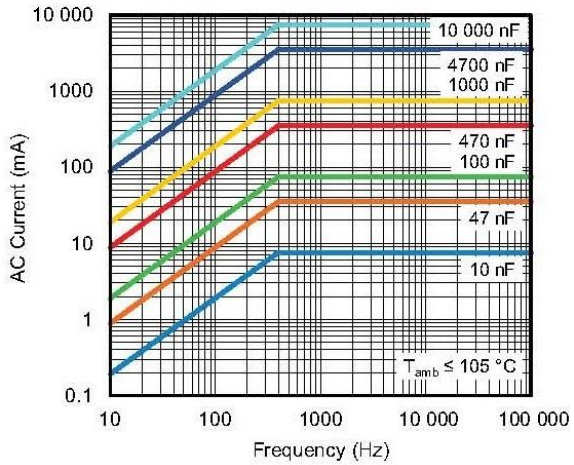
Tangent of loss angle as a function of frequency
(typical curve)



Resonant frequency as a function of capacitance
(typical curve)

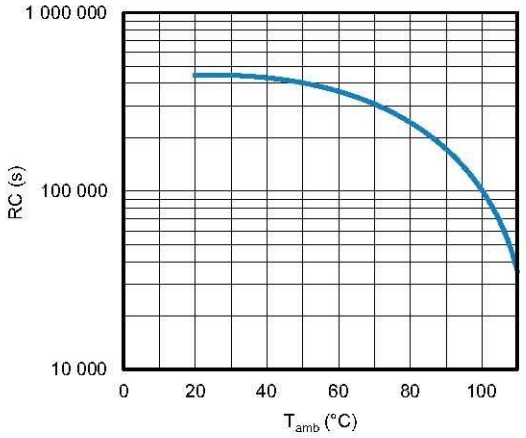


Max. RMS voltage as a function of frequency



Max. RMS current as a function of frequency

■ 特性 Characteristics



Insulation resistance as a function of ambient temperature

■ MPX-X2 型安全標準認證表 Approval sheets for safety standard of type MPX-X2

認證標志 Approval marks	標準 Standards	證書號 Certificate	氣候類別 Climatic Category	容量範圍 Capacitance Range	額定電壓 Rated Voltage
c UL us	IEC 60384-14:2013	E302125	40/100/21	0.001～4.7μF	275Vac
			40/110/56		310Vac
10 VDE	IEC 60384-14:2013	40030283	40/100/21	0.001～4.7μF	275Vac
			40/110/56		310Vac
CQC	GB/T6346. 14-2015	CQC13001096493	40/100/21	0.001～4.7μF	275Vac
			40/110/56		310Vac
KC	KC60384-14	SU03034-12001C SU03034-12002C SU03034-12003D SU03034-12004D SU03034-17001A	40/100/21	0.001～4.7μF	275Vac
			40/110/56		310Vac

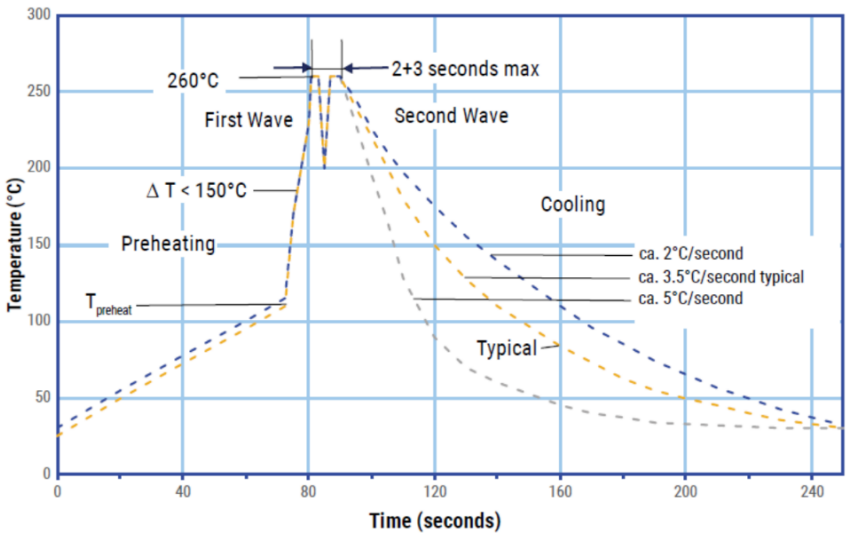
■ 薄膜电容器焊接指南 Soldering Guidelines for Film Capacitors

聚丙烯膜電容器對熱特別敏感 (聚丙烯膜的熔點為 160°C ~ 170°C)，波峰焊可能具有破壞性，尤其是對於小型聚丙烯膜電容器 (引線間距為 5 mm 至 15 mm)，焊接過程中必須非常小心。
一般來說，IEC 出版物 61760–1 第 2 版中的波峰焊接曲線可作為成功焊接的可靠指南。(請參見圖 1)
Polypropylene capacitors are especially sensitive to heat (the melting point of polypropylene is 160 – 170°C).
Wave soldering can be destructive, especially for mechanically small polypropylene capacitors (with lead spacing of 5 – 15 mm), and great care must be taken during soldering. In general, the wave soldering curve from IEC Publication 61760–1 Edition 2 serves as a solid guideline for successful soldering. See Figure 1.

通孔的薄膜电容器不建議採用回流焊。將電容器暴露在超過上述建議限值可能會導致電容器退化或永久性損壞。
Reflow soldering is not recommended for through-hole film capacitors. Exposing capacitors to a soldering profile in excess of the recommended limits may result in degradation or permanent damage to the capacitors.

請勿將聚丙烯膜電容器通過粘合劑固化爐來固化表面安裝部件的樹脂，須在表面安裝零件固化後插入通孔零件。
如果通孔部件必須通過粘合劑固化過程，請咨詢 WINDAY，討論烘箱中的實際溫度分布。
建議最多進行兩次焊接循環。在第二次焊接循環之前，請留出時間使電容器表面溫度恢復到正常溫度。
Do not place the polypropylene capacitor through an adhesive curing oven to cure resin for surface mount components. Insert through-hole parts after curing the surface mount parts. Contact WINDAY to discuss the actual temperature profile in the oven, if through-hole components must pass through the adhesive curing process.
A maximum two soldering cycles is recommended.
Allow time for the capacitor surface temperature to return to normal before the second soldering cycle.

■ 波峰焊建議 Wave Soldering Recommendations (Figure 1)



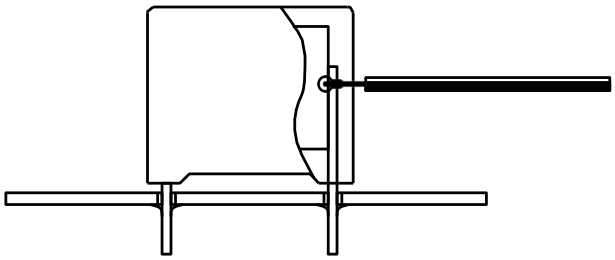
■ 波峰焊建議 Wave Soldering Recommendations (Continue)

1. 該表顯示了焊接過程的最高設置溫度 The tables indicates the maximum set-up temperature of the soldering process

介電薄膜材料 Dielectric Film Material	最高預熱溫度 Max. Preheat Temperature		最高峰值焊接溫度 Max. Peak Soldering Temperature	
	Pitch ≤ 15 mm	**Pitch > 15 mm**	**Pitch ≤ 15 mm**	**Pitch > 15 mm**
聚乙酯膜 Polyester	130°C	130°C	270°C	270°C
聚丙烯膜 Polypropylene	110°C	130°C	260°C	270°C

2. 電容器內部測得的最高溫度 The maximum temperature measured inside the capacitor

介電薄膜材料 Dielectric Film Material	元件內部測得的最高溫度 Maximum Temperature Measured Inside the Element
聚乙酯膜 Polyester	160°C
聚丙烯膜 Polypropylene	110°C



設置溫度，使元件內的最高溫度低於極限：

Set the temperature so that inside the element the maximum temperature is below the limit.

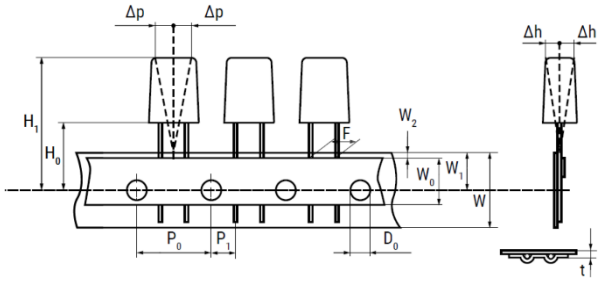
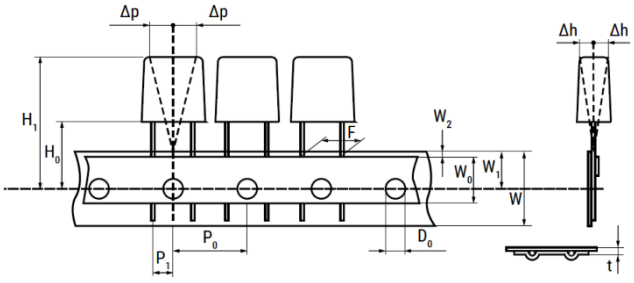
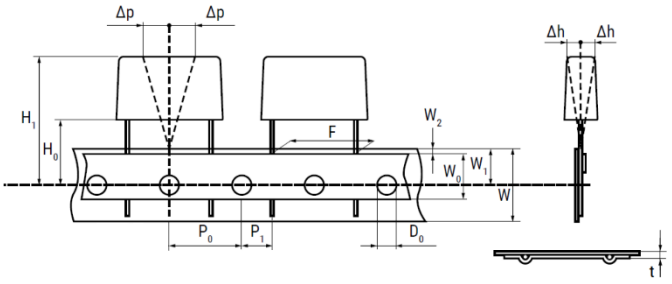
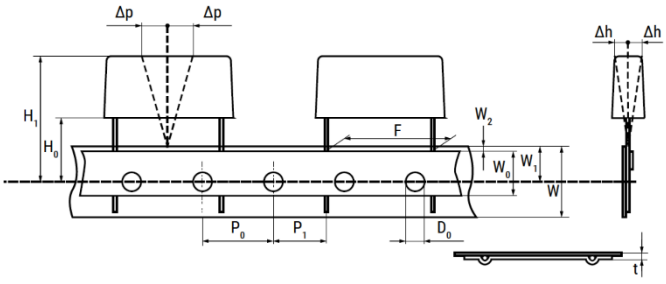
■ 儲存條件和期限 Storage conditions and duration

包裝好的電容器應存放在清潔、通風、乾燥的庫房內，不靠近熱源，不受陽光直射，嚴禁與化學試劑、酸和有害氣體一起儲存。T_{stg} = +5°C 至+35°C，最大相對濕度為 75%，無冷凝，儲存一年。

Packaged capacitors should be kept in clean, ventilated, dry coffers, not near the heat source, not subject to direct sunlight, is strictly prohibited and chemical reagents, acid and harmful gas storage together.

T_{stg} = +5°C to +35°C with relative humidity of maximum 75% without condensation, storage for one year.

■ 引線編帶 Lead Taping (IEC 60286-2) Table II

間距 Lead Spacing 5 mm	間距 Lead Spacing 7.5 mm
	
間距 Lead Spacing 10 - 15 mm	**間距 Lead Spacing 22.5 - 27.5 mm**
	

■ 編帶規格 Taping Specification

尺寸單位 Dimensions in mm								
引線間距 Lead Spacing	+0.8/-0.2	F	5	7.5	10	15	22.5	27.5
載帶寬度 Carrier Tape Width	+1/-0.5	W	18	18	18	18	18	18
膠帶寬度 Hold-down Tape Width	Minimum	W_0	9.5	9.5	9.5	9.5	9.5	9.5
鏈孔位置 Position of Sprocket Hole	±0.5	W_1	9	9	9	9	9	9
帶與帶距 Distance Between Tapes	Minimum	W_2	3	3	3	3	3	3
鏈孔直徑 Sprocket Hole Diameter	±0.2	D_0	4	4	4	4	4	4
進料孔距 Feed Hole Lead Spacing	±0.2(1)	P_0(3)	12.7	12.7	12.7	12.7	12.7	12.7
引線-鏈孔 Distance Lead-Feed Hole	±0.7	P_1	3.85	3.75	7.7	5.2	7.8	5.3
平面偏差 Deviation Tape - Plane	Minimum	Δp	1.3	1.3	1.3	1.3	1.3	1.3
橫向偏差 Lateral Deviation	±2	Δh	2	2	2	2	2	2
總厚度 Total Thickness	±0.2	T	0.7	0.7	0.7	0.7	0.7	0.7
鏈孔-本體 Sprocket Hole/Cap Body	±0.5	H_0(2)	18.5	18.5	18.5	18.5	18.5	18.5

(1) 最大累計進料孔誤差，每20個零件 1mm / Maximum cumulative feed hole error, 1 mm per 20 parts.

(2) 16.5 mm 可根據要求提供 / 16.5 mm available on request.

(3) 15.0 mm 可根據要求提供 / 15.0 mm available on request (F ≥ 10mm).