



目 錄

Table of Contents

目錄與規格書版本變更履歷.....	01
**Table of contents and Version change list	
系列料號清單.....	02
**Part No. List	
ROHS 證書&粉末塗料 UL94-V0 阻燃證書 (請自行下載)	03
**ROHS certificate & powder coating UL94-V0 flame resistance certificate (Please download by yourself)	
圖面&電氣特性說明	04
**Drawing & electrical characteristics description	
薄膜電容器技術規範/料號編碼&外觀印字&尺寸.....	05~06
**Technical specification for Capacitors/Part Number Code & Appearance Printing& Size	
產品編號&薄膜電容器結構.....	07
**Product number & structure of film capacitor	
溫度和頻率特性.....	08~09
Temperature and frequency characteristics	
焊接條件.....	10
soldering process	
物質安全料表.....	11~15
**MSDS	
塑膠薄膜電容器的使用上注意事項及指導.....	16
**Guideline of notabilia for the usage of plastic film capacitors	

規格書版本更新履歷

Datasheet Version update list

Version 版本	Update content 變更內容	Update Date 變更日期	Remark 備註



MER 系列承認書

Series acknowledgement

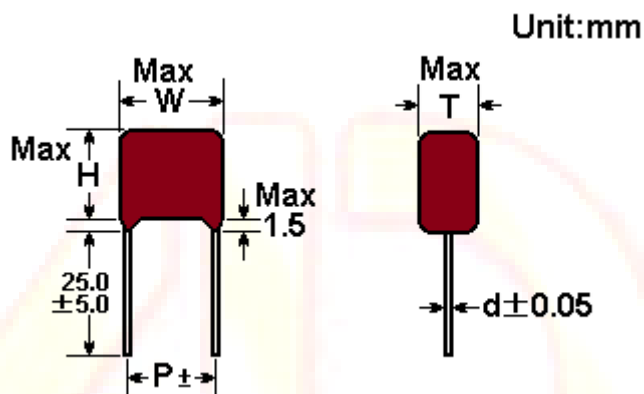
NO	客戶料號 Customer Part Number	規格 specification	料號 Part No
1		MER104K400VDC	MER104K2GC1
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
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17			
18			
19			
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制訂者	版本	制訂日期	修訂說明
劉亦婷	0	2022/06/15	首次發行  Adobe Acrobat Document "ROHS"請開啟  Adobe Acrobat 文件 "94-V0 阻燃證書"請開啟  Adobe Acrobat Document "產地證明"
核 准	審 核		制 訂
陳勝傑	蔡育君		劉亦婷



Metallized Polyester Film Capacitor. TYPE : MER104K/400VDC



TYPE	MER	
DIMENSIONS	Unit	mm
CAPACITANCE	μF	0.1
Max. Voltage	VDC	400
Max. Insulation Resistance	IR	Cap $\leq$ 0.33 μF IR>9000MOHM Cap>0.33 μF IR>3000MOHM $\times\mu\text{F}$



1.Part Name: Metallized Polyester Film Capacitor.

2.Type: MER- PFC (Radial Lead)

3.Working Voltage: 400(2G) VDC

4.Capacitance Range: 0.1 μ F

5.Capacitance Range Tolerance: K ($\pm 10\%$)

6.Temperature Range: - 40°C -- +105°C

7.Flame retardant resin : PBT 94-V0

8.Characteristics

ARTICLE	APPLICATION ITEM	CHARACTERSTICS	TEST METHOD
1.	Dielectric Strength (Between Terminals)	No damage	Add DC test voltage of 175% rated W.V for 1-5 Sec.
	Test voltage between terminals and case (Utc)		1kV 1.2Khz applied for 60s at 25 $\pm$ 5°C
2.	Insulation Resistance (Between Terminals)	Cap $\leq$ 0.33 μ F IR>9000MOHM Cap>0.33 μ F IR>3000MOHM $\times\mu$ F	Measured at 100VDC after 1 minute.
3.	Capacitance	Within the specification	Measured with frequency 10Khz and AC voltage less than 6V.
4.	Dissipation factor	$\tan \delta < 1.0\%$	
5.	Tensile strength of terminations	No damage	Loading force in bending the lead to 90° of the body. lead dial(mm) load (Kg) 0.6
6.	Vibration	No opening and short happened No damage in element junction and appearance.	10 - 55Hz 1.5 mm amplitude 3 directions 2H Per direction.
7.	Solder ability	Good tinning, by eye measurement more than 3/4 of circumference is covered with new solder.	Solder temp. 245°C $\pm$ 5°C dwell time 2 $\pm$ 0.5 Sec
8.	Cold	Capacitance change within + 0 -8% of 20°C	At - 40°C no Voltage applied
9.	Heat	Capacitance change within + 5 -0% of 20°C	At + 105°C no Voltage applies.



ARTICLE	APPLICATION ITEM	CHARACTERSTICS	TEST METHOD
10.	Humidity life test	Appearance No damage Dielectric strength : No damage IR : over 30% of article tanD < 1.1% cap. change within ±8%	Temp. and humidity 40°C 90 - 95% R. H. add W.V. for 500H then keep 16H under room temp.
11.	Heat life test	Appearance : no damage IR : Over 30% of article Tan D < 1.1% cap. change : within ±5% of that test.	Add 140% of W.V. 105°C in chamber for 5,000H then keep under standard condition 2H.
12.	Epoxy resin filled	UL-94V0 powder epoxy will not overflow the bottom of the body.	By vernier measurement
13.	A storage needs to be kept indoors at -10~+40°C and relative humidity of under 75% without any sudden temperature changes, direct sunlight and corrosive gas around.		

8. Marking

- a. w.v.
- b. Capacitance
- c. Capacitance tolerance
- d. Trading mark

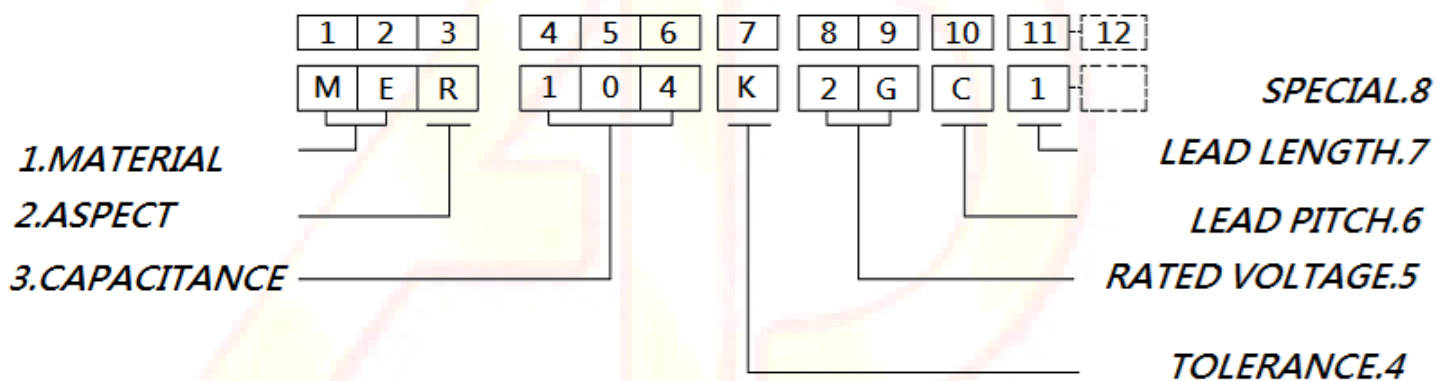
9. Terminal & Dimension

PART NO.	VOLTAGE	CAPACITANCE		DIMENSION				
		SYMBOL	μF	W	T	H	P	d
MER104K2GC1	400VDC	104	0.1	13.0	6.0	12.0	10.0±0.8	0.6

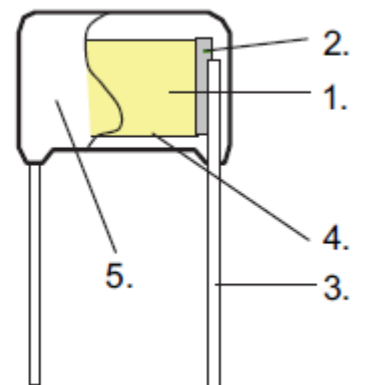


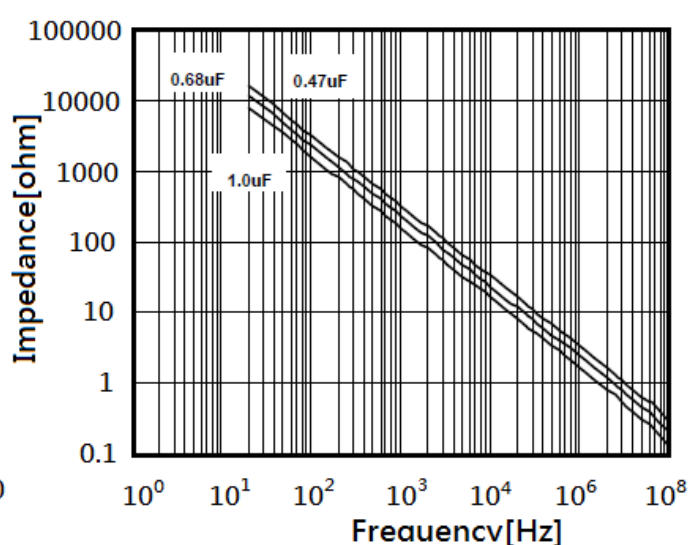
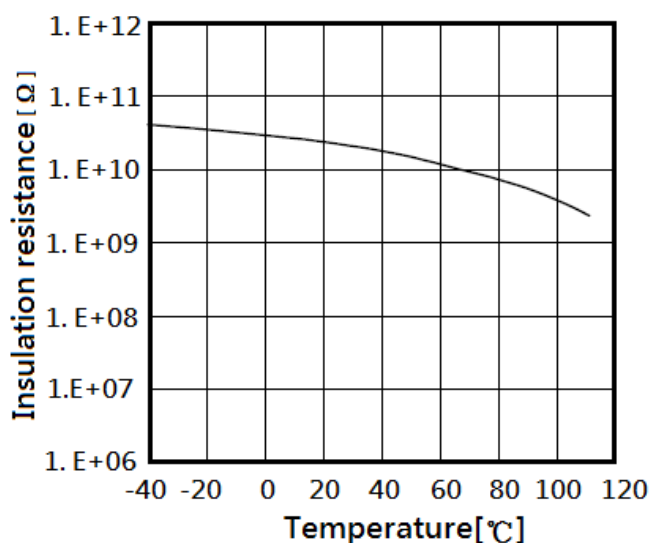
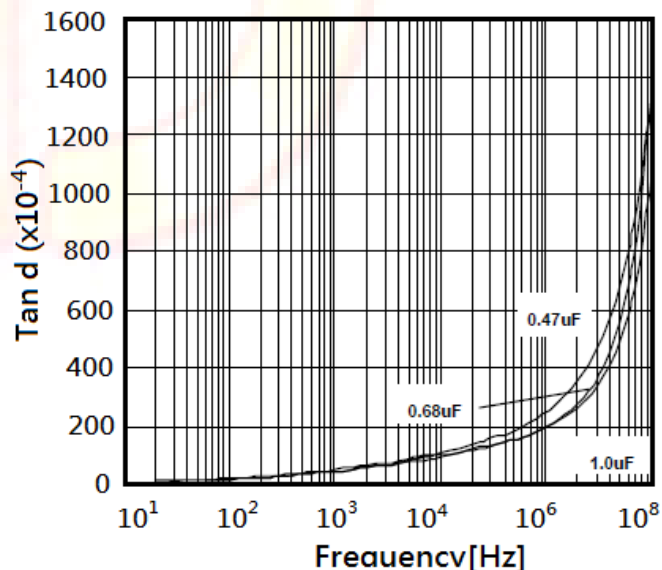
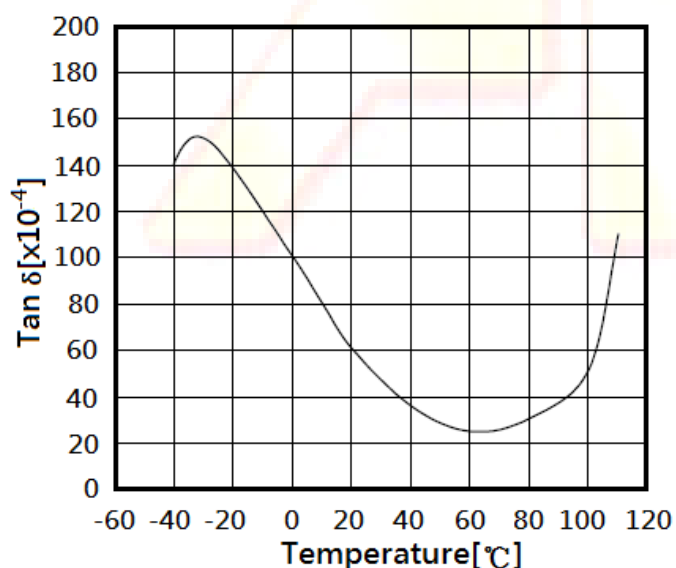
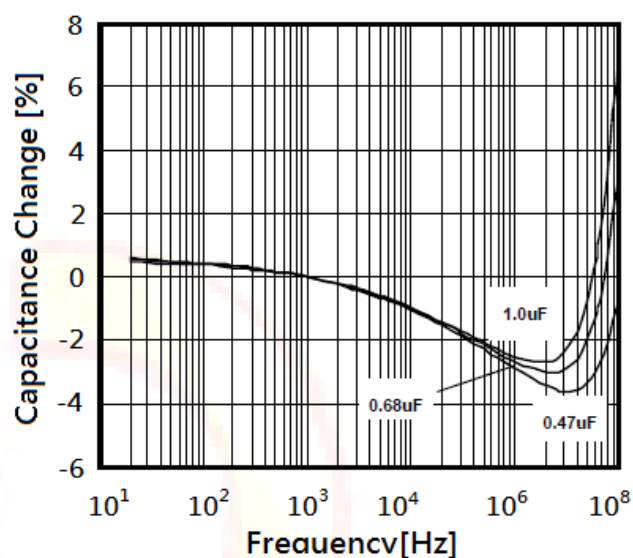
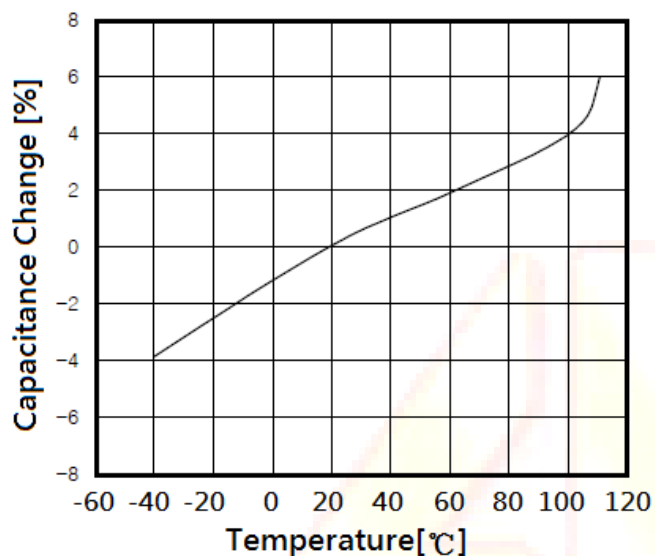
10. (AID) PART NO.

HOW TO ORDER(AIDComputer CODE)



1.	DIELECTRIC	Metallized Polyester Film
2.	METAL SPRAY	Special Solder
3.	LEAD WIRE	Copper-clad Steel Wire
4.	INNER COATION	Inner Coating UL 94-V0
5.	OUTER COATION	Epoxy Resin



**TEMPERATURE AND FREQUENCY CHARACTERISTICS**

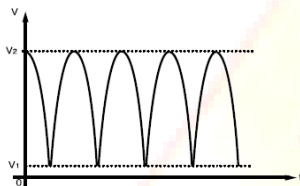


允許電流對頻率特性

允許電流通常由均方根電流和尖峰電流表示。均方根電流如下附圖所示

允許尖峰電流中的連續尖峰電流值應為持續電流，單個尖峰電流應為不連續電流，如開關動作中的脈衝電流。

最高次數的單峰電流次數應限制在10000次內(若有超過10000次，請告知我們)。



$$\text{Here: } V_1 \geq 0, V_2 \leq U_R, V_{rms} = (V_2 - V_1) \div \sqrt{2}, I_{rms} = 2\pi f \times C \times (V_1 - V_2) \div \sqrt{2}$$

U_R is the rated voltage of the capacitor

Characteristics of permissible current
(Arms) Vs Frequency (sinusoidal wave
 $\Delta T \leq 12^\circ\text{C}$, $TH \leq 40^\circ\text{C}$)

允許電流 (Arms) 對頻率特性曲線圖
(正弦波, $\Delta T \leq 12^\circ\text{C}$, $TH \leq 40^\circ\text{C}$)

Permissible Current vs Frequency Characteristic

A permissible current is regulated by both a root-mean-square value current and a peak current.

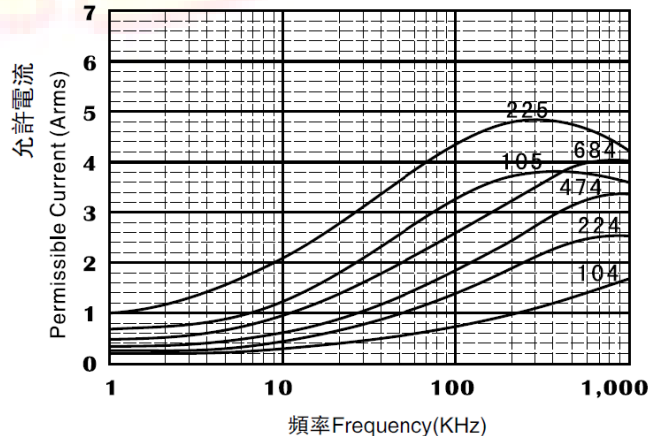
A root-mean-square value current is to be a permissible current value to frequency attached.

The values of continuous peak current in the allowable peak current shall be those of continuous current, and the values of single peak current shall be those of discontinuous current such as rush current in switching on or off. The highest number of times of single peak current shall be limited to 10,000 times. (In case of exceeding 10,000 times, please contact us.)

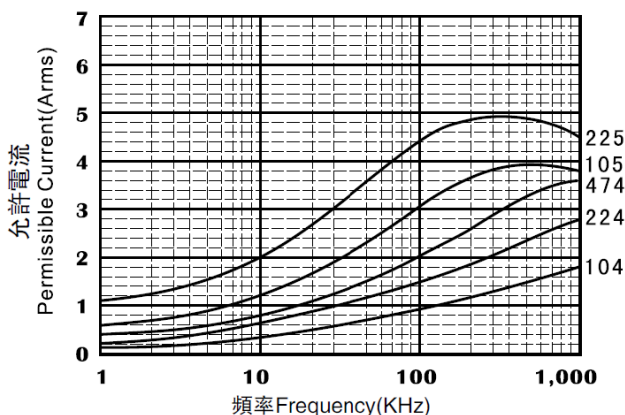
注: MTF產品只適用於DC濾波和DC模塊電路,意指施加給電容的電壓必須是單向漣波電壓,電壓代表波型如下圖示。不適用於交流電路,對此有何疑問請和我們的技術人員聯系。

a: The MTF series is only recommended to use in DC-filter or DC-blocking circuits. It means the voltage applied to the capacitors must be unidirectional ripple voltage. The typical voltage curve is as following reference. If you have any questions for this note, please feel free to contact our technical engineer.

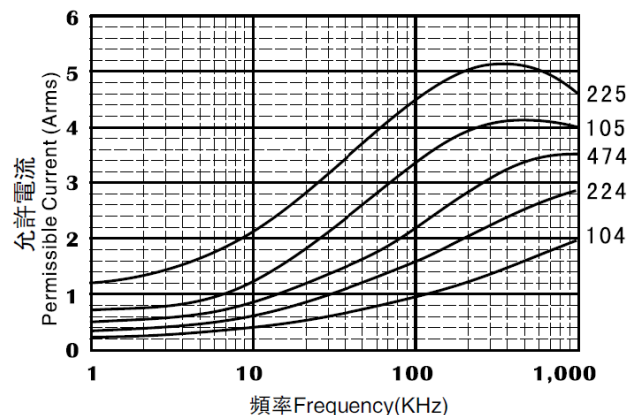
MER 400V/450V



MER 500V/550V



MER 630V





Soldering Process

Internal temperature of the capacitor must be kept as follows:

Polyester: preheating : T_{max} T 125° C

soldering : T_{max} T 135° C

Polypropylene: preheating : T_{max} T 100° C

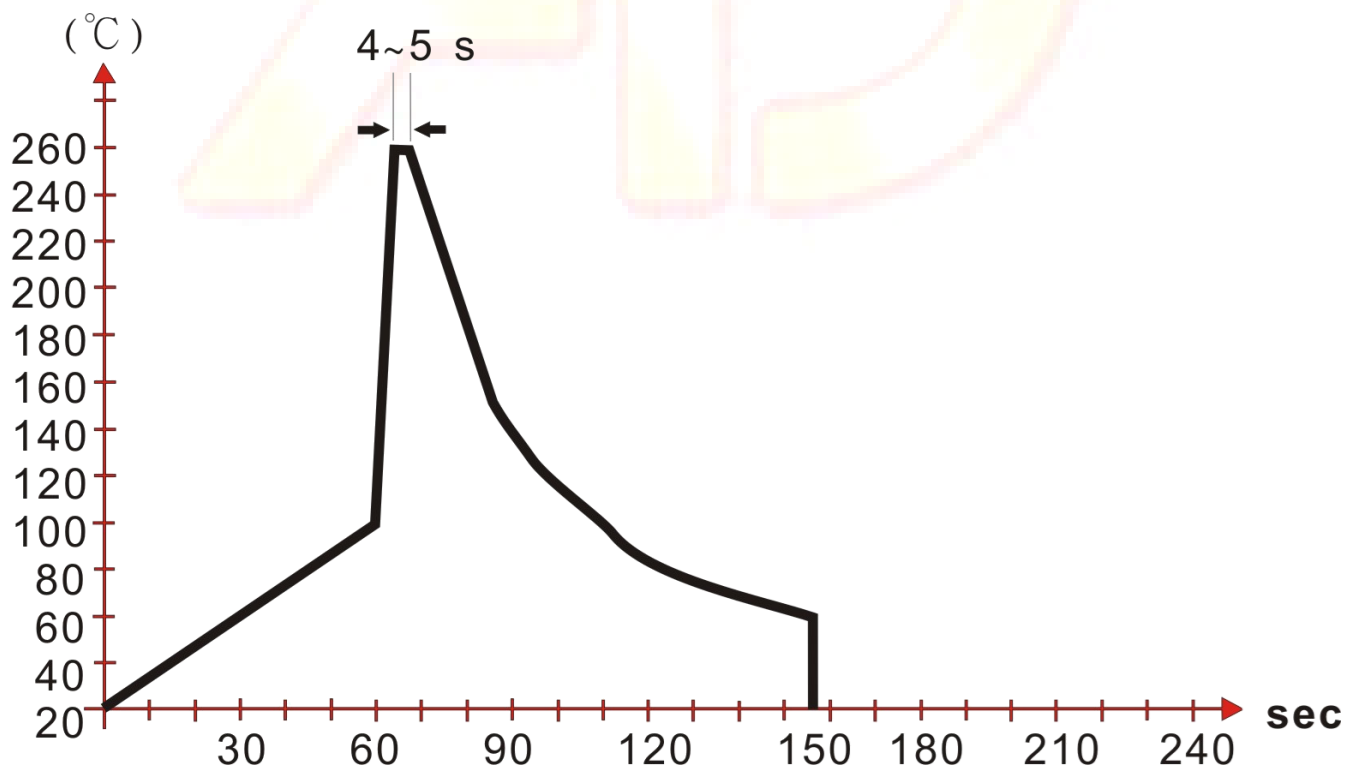
soldering : T_{max} T 110° C

Single wave soldering

Soldering bath temperature : T P 260 ° C

Dwell time : t P 5 sec

Due to different soldering processes and heat requirements the graphs are to be regarded as a recommendation only.





MSDS 物質安全資料表

一、物品與廠商資料/Product and Company Identification

物品名稱: 電容器 Product Name Capacitors
物品編號: MER104K2GC1 Product Code

二、成份辨識資料/Composition, Information on Ingredients

成分名稱 Component Chemical Name & Common Name :		化學文摘登記號碼 CAS No. :	濃度(成分百分比) Concentration(Percentage) :
部件名稱	組成物質		
素子	鋅	7440-66-6	0.93%
	鋁	7429-90-5	0.07%
	PE 基膜	9003-07-0	99.0%
噴金屬	錫鋅	7440-66-6	44.65%
	鋅	7440-31-5	55.35%
引腳 (CU 線-0.8mm)	錫	7440-50-8	4.0%
	銅	7440-31-5	96.0%
環氧耐燃塗料 (UL94-V0)	環氧粉末(棕色)	EF-8277BL(G)	100.00%



三、危害辨識資料/ Hazard Identification

最重要危害效應 Most Important Health Hazards and Reactions	健康危害效應/Health Hazards and Reactions : 無
	環境影響/Environmental Impact : 無
	物理性及化學性危害/Physical and Chemical Hazards : 無
	特殊危害/Specific Hazards : 無
主要症狀/Cardinal Symptoms : 無	
物品危害分類/Hazard Classification : 無	

四、急救措施/ First Aid Measures

不同暴露途徑之急救方法/ First Aid Measures for Different Kinds of Exposures : • 吸入/Inhalation : 無 • 皮膚接觸/Skin Contact : 無 • 眼睛接觸/Eye Contact : 無 • 食入/Ingestion : 無
最重要症狀及危害效應/Most Important Symptoms and Hazard Reactions : 無
對急救人員之防護/Protection to First-Aid Attendants : 無
對醫師提示/Suggestions to Doctors : 無

五、滅火措施/ Firefighting Measures

適用滅火劑/Suitable Extinguishing Media : 乾粉滅火劑、二氧化碳滅火劑
滅火時可能遭遇之特殊危害/Special Hazards in Fire : 無
特殊滅火程式/Special Fire - Fighting Procedures : 無
消防人員之特殊防護設備/Required Special Protective Equipment for Fire-Fighters : 無

六、洩漏處理方式/Accidental Release Measures

個人應注意事項/ Personal Precautions : 無
環境注意事項/Environmental Precautions : 無
清理方法/Methods for Cleaning : 無



七、安全處置與儲存方法/ Handling and Storage

處置/Handling: 濕度在 75%以下

儲存/Storage: 常溫 $\leq 35^{\circ}\text{C}$ 濕度在 75%以下

八、暴露預防措施/ Exposure Controls, Personal Protection

工程控制/ Engineering Measures:

控制參數/ Control Parameters:

- 八小時日時量平均容許濃度(TWA)/短時間時量平均容許濃度(STEL)/最高容許濃度(Ceiling): 無資料
- 生物指標/ BEIs: 無資料

個人防護設備/ Personal Protection Equipment:

- 呼吸防護/Respiration: 無

手部防護/Hand: 防護手套:

- 眼睛防護/Eye: 護目鏡
- 皮膚及身體防護/Skin & Body: 無眼睛防護/Eye: 無

衛生措施/Hygiene Measures: 無

九、物理及化學性質/ Physical and Chemical Properties

物質狀態/ State of Substance: 固態	形狀/Appearance: 固態
顏色/Color: 藍色	氣味/Odor: 無味
pH 值/pH Value: -	沸點/沸點範圍/Boiling Point: 260°C
分解溫度/Decomposing Temperature: 260°C	開火點: - Flashpoint 測試方法: 開杯閉杯 Test Methods: Open Slot Close slot
自燃溫度/Self-lighting Temperature: -	爆炸界限/Explosion Limits: -
蒸氣壓/Vapor Pressure: -	蒸氣密度/Vapor Density: -
密度/Density: 1.14	溶解度/Dissolution: -



十、安定性及反應性/Stability and Reactivity

安定性/Stability: 安定

特殊狀況下可能之危害反應/Possible Hazard Reaction Under Special Conditions: 無

應避免之狀況/Conditions to Avoid: 無

應避免之物質/Materials to Avoid: 無

危害分解物/Hazardous Decomposition Products: 無

十一、毒性資料/ Toxicological Information

急毒性/Acute Toxicity: 無

局部效應/Local Reactions: 無

敏感性/Sensitivity: 無

慢毒性或長期毒性/Chronicons Long-term Toxicity: 無

特殊效應/Special Reactions: 無

8mg/kg(懷孕 8-15 的雌鼠

IARC 將之列為 Group1

ACGIH 將之列為 A2:

十二、生態資料/ Ecological information

可能之環境影響/環境流布/Possible Environmental Impact/Environmental Run-offs: 無

十三、廢棄處置方法/Disposal considerations

可廢棄處置方法/Disposal Methods: 回收再生使用/回收公司回收再生使用/廢棄

十四、運送資料/Transport information

國際運送規定/International Transportation Regulations: 無資料

聯合國編號/Referencing: 無資料

國內運送規定/Domestic Transportation Regulations: 無資料

特殊運送方法及注意事項/Special Transportation Methods and Precautions: 無資料



十五、法規資料/Regulatory information

適用法規/Applicable Regulation: 無資料

十六、其它資料/Other information

適用法規/Applicable Regulation: 無資料

參考文獻

Ref. Document

無

製表日期

Date Prepared

2022 年 06 月 15 日



Guideline of notabilia for the usage of plastic film capacitors

塑膠薄膜電容器的使用上注意事項及指導

Plastic film capacitors use organic films for their dielectrics, thus the capacitors may fume or flame, depending on the circuit conditions they are in, when they are damaged by applying over-voltage or over-current.

塑膠薄膜電容器使用有機薄膜為介質，當使用超過額定電壓及額定電流，可能產生火焰，導致電容損壞，故請使用於正確的迴路。

1. Circuit Design 迴路設計

- ① Please use capacitors within the range of their characteristic ratings, only after confirming their operating and mounting environments.

請確認電容器的使用範圍僅止於明定之額定特性規範，請先確認電容器使用之環境是否符合規範。

- ② In case of selecting a capacitor, please select the most suitable one which fits to your operating conditions.

請依照適合的作業條件選擇相對應的電容器使用。

- ③ Capacitors used for Across-The-Line, Line-By-Pass and Antenna-Coupling to suppress noises in an equipment, the capacitors need to be approved by overseas Safety Standards or 'Electric Appliance and Material Control' by Ministry of International Trade and Industry.

電容器用於跨接，旁路迴路及天線耦合等抑制噪音的裝置，需通過海外安全標準或日本通商產業省之電器用品安全法。

- ④ An applying voltage to a capacitor, including the peak of surge and ripple voltage (D.C. voltage + A.C. Peak), cannot be exceeded the rating voltage.

電容器之應用電壓，包括突波和紋波電壓的峰值(直流電壓+交流峰值)不可超過額定電壓。

- ⑤ Do not apply a current over its permissible level. Also, make sure to check the surrounding temperature and inherent temperature rise of a capacitor since a permissible current can be restricted by those factors.

切勿使用超出電容器可承載之電流並檢查電容器周圍之溫度，因有許多因素會影響電流之變化，進而造成電容器之溫度上升。

- ⑥ Please contact AID for further details, if mechanical resonance (hum) occurs to a capacitor.

如電容器的發出共振(嗡嗡)之噪音時，請與AID聯繫。

- ⑦ Do not conduct a rapid charge and discharge to a capacitor which may lead to characteristics degradations or break down of the capacitor.

請不要對電容器進行快速的充電和放電，此可能會導致電容器之特性退化或損壞。

2. Mounting 安裝

- ① Do not apply any exceeding tension or torsion to lead wires of a capacitor, during the mounting process.

請不要使用任何超過電容導線可承受之張力進行插件。

- ② Please mount a capacitor where it does not contact any other heating parts, high voltage parts and other parts.

請確認電容器使用環境，避免接觸任何其他升溫熱物件、高壓和其他部分料件。

- ③ Please conduct soldering process by strictly following the specified conditions.

進行焊接過程時，請嚴格遵循指定之焊接條件。

3. Case of an emergency 緊急情況

- ① If a fuming, a flaming or an usual smell occurs from an equipment during its usage, please cut off the power supply by switching it off, pulling the plug out or other methods.

如使用設備有冒煙，火花或冒出不尋常之氣味，請切斷電源，拔掉插頭或以其它方法關閉設備。

4. Storing and handling 儲存和處理

- ① A storage needs to be kept indoors at -10~+40°C and relative humidity of under 75% without any sudden temperature changes, direct sunlight and corrosive gas around.

需保存於-10 ~ 40°C，相對濕度低於75%並確保沒有任何突然的溫度變化，避免直接陽光之曝曬及接觸腐蝕性氣體之環境。

- ② Do not apply and exceeding vibration, shock (dropping) and pressure.

不應過度震動、碰撞和及外力的衝擊。

5. Rejection 報廢

- ① In case of rejecting capacitors, please seek for professionals who deal with the industrial wastes treatments.

對於報廢電容器，請找處理工業廢品之專業人士處理。