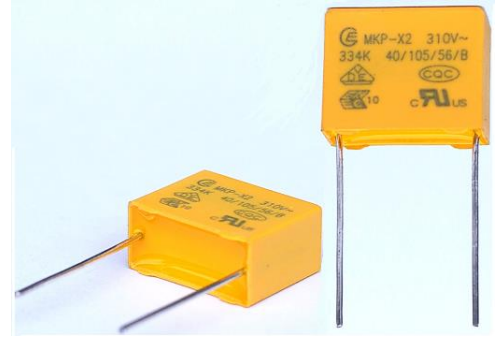
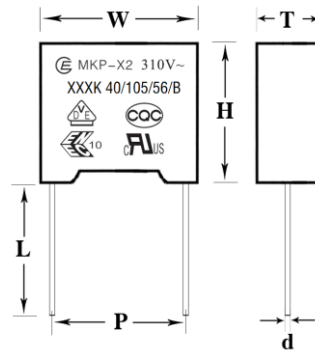


1 product brief introduction 产品简介

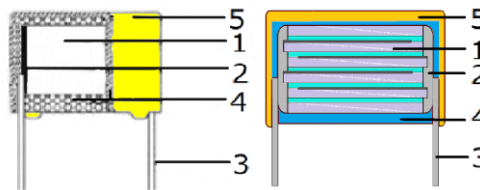


1.1 part No 产品类别代码: MKP

1.2 Construction and main materials of products 产品结构和主要材料

MKP series are wound with metallized polypropylene film dielectric, non-inductive construction, CP wire and encapsulated in plastic case with flame retardant epoxy resin sealed. They have excellent features of self-healing and good flame retardant according to UL94V-0.

MKP 电容系列是由金属化聚丙烯膜无感结构卷绕而成，采用镀锡铜包钢线、塑胶壳体以及阻燃环氧树脂封装而成。它们有自我修复的优良特性和优良的阻燃性，符合 UL94V-0 标准。



NO.	Main Construction 主要结构	Materials 、Specification 材料、规格	Note 注意
1	Dielectric 电极+介质	Metallized Polypropylene Film 金属化聚丙烯膜	-/-
2	Solder 焊接端子	Sn-Zn alloy 锡锌合金	-/-
3	Terminal 引线	CP wire (Ø0.8or0.6mm) 镀锡铜包钢线 (Ø0.6 或 0.8mm)	-/-
4	Sealed Material 封装材料	Epoxy resin 环氧树脂	UL94V-0
5	Plastic Case 塑胶壳体	PBT	UL94V-0

1.3 Features 特性

- ◆ Metallized polypropylene non-induction construction 金属化聚丙烯、无感结构
- ◆ High moisture-resistance 优良的耐湿性
- ◆ Self-healing property 自愈性
- ◆ Excellent active and passive flame resistant abilities (conforming to UL94-0) 优异的阻燃性能(符合 UL94V-0)
- ◆ Withstanding overvoltage stressing 能够承受过压冲击

1.4 Hazardous Substances Compliance:All products pass following compliance or standard: ROHS: REACH; PAHS;HF;and Phthalates-Phthalates Regulation.

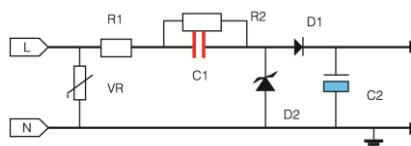
产品有害物质法规符合性: 产品符合 ROHS; REACH; PAHS; HF (如需要); 邻苯二甲酸盐等法规。

1.5 Applications 用途

- ◆ X2 class for interference suppression 抑制电磁干扰
- ◆ "across the line" applications 跨接线路
- ◆ Capacitance divider where seriesed with the mains in energy meters,LED drivers and control boards in white goods and home appliances. 适用于电表、LED 驱动、控制器等串联在电路中阻容降压。

For the purpose of RC voltage divider, please choose "D" mark sub class model. (This "D" mark sub class model has the features of high stability in capacity and smaller in capacity drop, however it does not suitable for using acrossing the line or as an EMI suppression filter)

注: 用于阻容降压时, 请注意选用标注有 D (MKP-X2/D) 字样的产品小类 (该小类电容量稳定性高, 容降小, 但不适宜用于跨接线路、抑制电磁干扰)。



Typical divider circuit 典型降压电路---降压电容器



1.6 Electrical Specifications 电气特性

Item 项目	Specification 标准要求
Climatic Category 气候类别 Passive Flammability Class 阻燃等级	40/105/56/B (C)
Operating Temperature 工作温度	-40°C ~ +105°C
Capacitance Range 容量范围	0.0047μF ~ 2.2μF
Capacitance Tolerance 容量偏差	J: ±5% K: ±10%
Maximum Continuous DC Voltage 最大连续直流电压	630VDC
Maximum Continuous AC Voltage 最大连续交流电压	310VAC(50/60Hz)
Rated AC Voltage(IEC60384-14) 额定交流电压	310VAC/300VAC(50/60Hz)
Dissipation Factor 介质损耗	≤0.1%(1KHz at 20~25°C)
Insulation Resistance 绝缘电阻	≥15000MΩ for C _R ≤0.33μF; ≥5000S for C _R >0.33μF (Measured at 100±10VDC/60s/20~25°C)
Withstand Voltage Between Terminals 端子间耐压	1600VDC/1min, no breakdown or flashover. (Voltage raising time 5-10sec, cut off current 10mA, ARC=OFF) 标准品, 施加测试电压 1600VDC/1 分钟, 无击穿或飞弧。 (电压上升时间 5~10sec, 漏电流 10mA, ARC=OFF)
Withstand Voltage Between Terminals and Case 端子与壳体间耐压	2100VAC/1min, no breakdown or flashover. 施加测试电压 2100VAC/1 分钟, 无击穿或飞弧。

1.7 Pulse handling capability

“dv/dt” represents the maximum permissible voltage change per unit of time for non-sinusoidal voltages, expressed in V/μS.

“k₀” represents the maximum permissible pulse characteristic of the waveform applied to the capacitor, expressed in V²/μS.

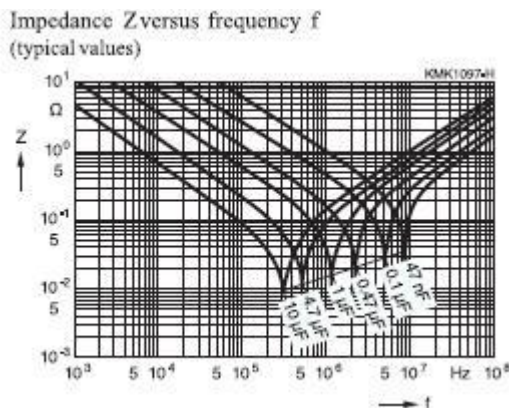
Note:

The values of dv/dt and k₀ provided below must not be exceeded in order to avoid damaging the capacitor.

dv/dt and k₀ values

Lead spacing	10mm	15mm	22.5mm	27.5mm
dv/dt in V/μS	475	340	170	120
k ₀ in V ² /μS	408500	292400	146200	103200

1.8 电气特性图



2 Part number system 产品代码

MKP	334	K	310	A	15	M	35	0	(60S***)
1	2	3	4	5	6	7	8	9	1011 12

1 Product Categories 产品类别代码:

MKP:X2 Metallized polypropylene film capacitor MKP-X2 金属化聚丙烯膜抗干扰电容器

2 Capacitance Code 电容量代码:

The first 2 digits indicate significant figures, and the third digit specifies the number of zero to follow.
前两位数为电容的实际数字,最后一位为倍乘数。

0= $\times 1$ 1= $\times 10$ 2= $\times 100$

3= $\times 1000$ 4= $\times 10000$ 9= $\times 0.1$

This gives the capacitance in picofarad. 电容量值单位为皮法 (pF)。

102 = $10 \times 10^2 \text{ pF} = 1,000 \text{ pF} = 1.0 \text{ nF} = 0.001 \mu\text{F}$ 105 = $10 \times 10^5 \text{ pF} = 1,000,000 \text{ pF} = 1000 \text{ nF} = 1 \mu\text{F}$

3 Capacitance Tolerance 电容量允许偏差:

J= $\pm 5\%$ K= $\pm 10\%$

4 Rated Voltage 额定电压:

310=310V

300=300V

5 Voltage Type 电压类别:

A=alternative voltage 交流电压

6 Lead Space 引线间距(mm):

07=7.5 10=10.0 15=15.0 22=22.5 27=27.5

7 Lead Style 线型形状: L:直线 M:直线短脚

8 Lead Length 引线长度(mm):

35=3.5 \pm 0.5 40=4.0 \pm 0.5 50=5.0 \pm 0.5 80=8.0 \pm 1.0 10=10.0 \pm 1.0 20=18.0Min

9 RoHS Symbol 环保标识:

0: Environmentally friendly products (in compliance with RoHS, Reach, and do not contain PAH or phthalates).
环保产品 (符合RoHS、Reach、不含多环芳烃、不含邻苯二甲酸盐)

1: Non environmentally friendly 非环保

2: In addition to being compliant with the aforementioned environmentally friendly criteria "0", it should also show that the amount of halogens contained in the product meets the criteria.

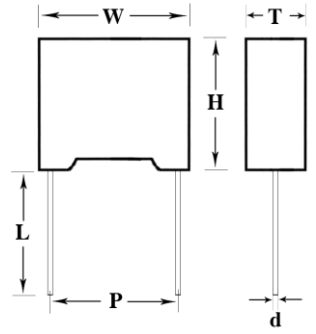
除符合上述"0"代表的环保要求外,还表示该产品含卤素量符合规定要求。

10~12 Management Code 内部管理码

3 Dimension sheet规格尺寸:

(The table lists only 310V~ rated voltage series, 300V~ series shares all the features except the rated voltage)

(本表仅列明额定电压 310V~系列规格, 300V~系列额定电压规格仅额定电压值不同)



3.1 Normal Specification form规格表

MANUFACTURER P/N 产品代码	CAP 容量 (μ F)	Dimension 尺寸(mm)					
		P 间距	W 宽	H 高	T 厚	Φ d 线径	
MKP472K310A07L---(12)	0.0047	7.5	10	9	4	0.6	
MKP562K310A07L---(12)	0.0056		10	9	4	0.6	
MKP682K310A07L---(12)	0.0068		10	10	5	0.6	
MKP822K310A07L---(10)	0.0082		10	10	5	0.6	
MKP103K310A07L---(80)	0.01		10	9	4	0.6	
MKP223K310A07L---(80)	0.022		10	9	4	0.6	
MKP333K310A07L---(60)	0.033		10	11	5	0.6	
MKP473K310A07L---(60)	0.047		10	11	5	0.6	
MKP563K310A07L---(60)	0.056		10	12	6	0.6	
MKP683K310A07L---(60)	0.068		10	12	6	0.6	
MKP472K310A10L---(12)	0.0047		10	13	9	4	0.6
MKP562K310A10L---(12)	0.0056			13	9	4	0.6
MKP682K310A10L---(12)	0.0068	13		9	4	0.6	
MKP103K310A10L---(10)	0.01	13		9	4	0.6	
MKP153K310A10L---(80)	0.015	13		9	4	0.6	
MKP183K310A10L---(80)	0.018	13		9	4	0.6	
MKP223K310A10L---(80)	0.022	13		9	4	0.6	
MKP273K310A10L---(80)	0.027	13		9	4	0.6	
MKP333K310A10L---(80)	0.033	13		11	5	0.6	
MKP473K310A10L---(60S)	0.047	13		9	4	0.6	
MKP473K310A10L---(60)	0.047	13		11	5	0.6	
MKP563K310A10L---(60)	0.056	13		11	5	0.6	
MKP683K310A10L---(60)	0.068	13		12	6	0.6	
MKP823K310A10L---(60)	0.082	13		12	6	0.6	
MKP104K310A10L---(60)	0.1	13		12	6	0.6	
MKP154K310A10L---(60)	0.15	13		14	8	0.6	
MKP103K310A15L---(12)	0.01	15		18	11	5	0.8
MKP473K310A15L---(80)	0.047			18	11	5	0.8
MKP563K310A15L---(70)	0.056			18	11	5	0.8
MKP683K310A15L---(70)	0.068			18	11	5	0.8
MKP823K310A15L---(60)	0.082		18	11	5	0.8	
MKP104K310A15L---(60S)	0.1		18	11	5	0.8	
MKP154K310A15L---(60)	0.15		18	12	6	0.8	
MKP224K310A15L---(60S)	0.22		18	13.5	6	0.8	
MKP224K310A15L---(60)	0.22		18	13.5	7.5	0.8	
MKP334K310A15L---(60S)	0.33		18	14.5	8.5	0.8	
MKP334K310A15L---(60)	0.33		18	16	10	0.8	
MKP394K310A15L---(60)	0.39		18	16	10	0.8	
MKP474K310A15L---(60)	0.47		18	16	10	0.8	
MKP564K310A15L---(60)	0.56		18	18.5	11.1	0.8	
MKP684K310A15L---(60)	0.68		18	18.5	11.1	0.8	
MKP224K310A22L---(60)	0.22		22.5	26.5	15	6	0.8
MKP334K310A22L---(60)	0.33			26.4	16.5	7	0.8
MKP474K310A22L---(60)	0.47			26.4	16.5	7	0.8
MKP564K310A22L---(60)	0.56	26.5		17	8.5	0.8	
MKP684K310A22L---(60)	0.68	26.5		17	8.5	0.8	



MKP824K310A22L---(60)	0.82	27.5	26.5	19	10	0.8
MKP105K310A22L---(60)	1.0		26.0	20	11	0.8
MKP155K310A22L---(60)	1.5		26.5	23	13	0.8
MKP474K310A27L---(60)	0.47		32	18	9	0.8
MKP564K310A27L---(60)	0.56		32	18	9	0.8
MKP684K310A27L---(60)	0.68		32	18	9	0.8
MKP824K310A27L---(60)	0.82		31.5	18	9	0.8
MKP105K310A27L---(60)	1.0		31.5	20	11	0.8
MKP155K310A27L---(60)	1.5		31.5	22	13	0.8
MKP225K310A27L---(60)	2.2		31.0	24.5	15	0.8

3.2 Reduce Size Specification form 小型化产品规格表

MANUFACTURER EG P/N EG 产品代码	CAP 容量 (μF)	Dimension 尺寸(mm)				
		P 间距	W 宽	H 高	T 厚	Φd 线径
MKP154K310A10L---(48)	0.15	10	13	12	6	0.6
MKP224K310A10L---(48S)	0.22		13	16	6.5	0.6
MKP224K310A10L---(48)	0.22		13	14	8	0.6
MKP224K310A15L---(48)	0.22	15	18	12	6	0.8
MKP334K310A15L---(48)	0.33		18	13.5	7.5	0.8
MKP474K310A15L---(50)	0.47		18	14	10	0.8
MKP474K310A15L---(48)	0.47		18	14.5	8.5	0.8
MKP684K310A15L---(48)	0.68		18	16.5	8.4	0.8
MKP105K310A22L---(48)	1.0	22.5	26.5	19	10	0.8
MKP155K310A22L---(48)	1.5		26.5	21.5	12	0.8
MKP225K310A22L---(48)	2.2		26.5	23	13	0.8

These are customer-made items, please choose discretely.

小型化产品为顾客订制品，建议谨慎选择使用。

In order to satisfy the usage of such capacitor under damp heat environment, two sub classes are designed as below

为满足市场对产品在高温高湿环境下使用这种高严酷度使用需求，将产品设计细分出下两小类：






- (1) U (MKP-X2/U) sub class: stands for a category for high moisture and temperature products. Those products have higher resistance to moisture and temperature (withstanding harsher conditions) compared to normal products, so they can be used in relatively higher temperature and more humid conditions. The corresponding technicality standard project test is the steady state damp heat test. Severity value is 85°C, 85%RH, 21D.
- (2) For the purpose of RC voltage divider, please choose “D” mark sub class model. (This “D” mark sub class model has the features of high stability in capacity and smaller in capacity drop, however it does not suitable for using crossing the line or as an EMI suppression filter)

(1) U (MKP-X2/U) 产品小类：该小类为耐高湿热产品类别：该产品相对于普通 X2 类产品而言，对湿热条件属于较高技术级别（较高的严酷度）产品，能在相对高温高湿条件下使用。对应技术标准项目为稳态湿热，严酷度值为 85°C，85%RH，21D。

(2) D (MKP-X2/D) 产品小类：该小类电容量稳定性特别高，容降小（即使是用于高温高湿环境）。适用于对电容量容降要求高的用途。但不适宜用于跨接线路、抑制电磁干扰。


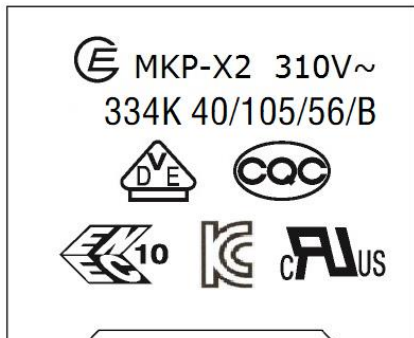







4 Class MKP X2 Approval, Standard, Rated Voltage and File No. 标准及认证

Safety Organization	Standard NO.	Recognition NO.	Rated Voltage	Approved Monogram	
UL/CUL	UL60384-14	E252221	310VAC 300VAC		USA/Canada
CQC	GB/T6346.14-2015	CQC15001123582	310VAC 300VAC		China
VDE	EN 60384-14(VDE 0565 Teil 1-1):2014-04 EN 60384-14:2013-08 IEC 60384-14(ed.4)	40022258	310VAC 300VAC		Germany
ENEC			310VAC 300VAC		European Economic Community
KC	KC 60384-14 (2015-09)	HU03026-17002A HU03026-17003A HU03026-17004A	310VAC 300VAC		Korea

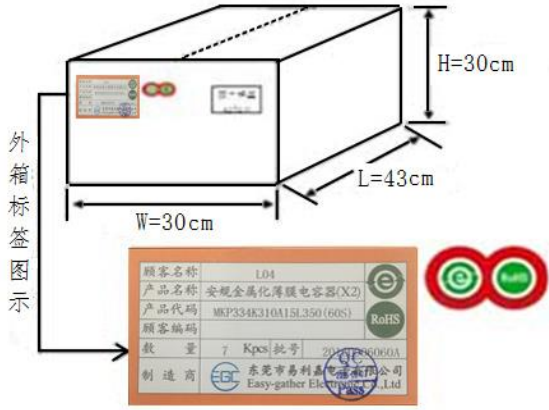
*KC certified capacitance range 472~105 KC 认证电容量范围 472~105

5 Marking 标志

Marking Item		Example	
Manufacturer Marking			
Type Designation	MKP		
Sub-Class Code	X2		
Capacitance, Tolerance	334K		
Rated Voltage	310V~		
Climatic category	40/105/56/B(C)		
Safety Organization Approved Marking	VDE		
	ENEC		
	UL/CUL		
	CQC		
	Korea		

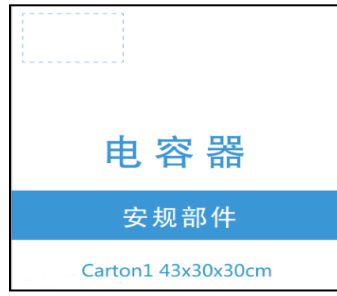
6 Packing in bulk 包装说明

6.1 (Outside packing box)外包装箱尺寸

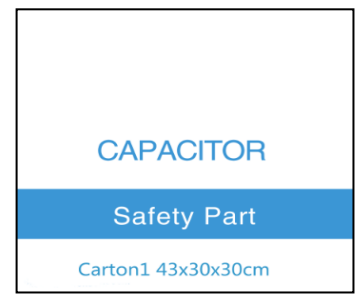


Packing box mark photo

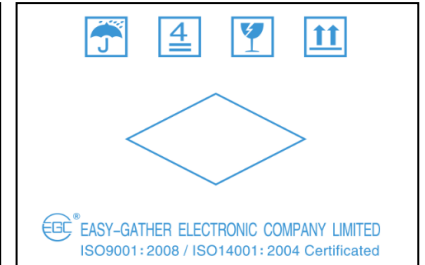
front view 主视图



back view 后视图

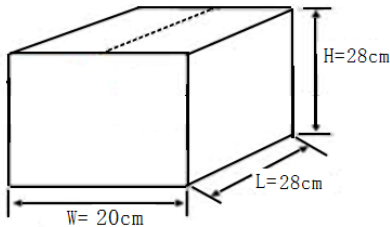


Left drawing 左视图



Right drawing 右视图

6.2 (Inner packing box)内包装箱尺寸



6.3 Bag package picture

内袋包装实物图片:



6.4 Bag mark photo 内袋标签图示:



- 1 PART. NO. 规格代码
- 2 CUST. P/N 客户料号
- 3 RATED CAP.ACITY 标称容量
- 4 RATED VOLTAGE 标称电压
- 5 QUANTITY 包装数量
- 6 LOT NO. 生产批号
- 7 ENVIRONMENT MARK 环保标识
- 8 TOL.ENCE 容量偏差
- 9 PACKAGE DATE 包装日期
- 10 QC SEAL QC合格章



7 Regulation in usage 使用规则

7.1 OPERATING AND STORAGE ENVIRONMENT 使用和储存环境

The insulating coating of capacitors does not form a perfect seal; therefore, do not use or store capacitors in a corrosive atmosphere, especially where chloride gas, sulfide gas, acid, alkali, salt or the likes are present. And avoid exposure to moisture. Before cleaning, bonding, or molding this product, verify that these processes do not affect product quality by testing the performance of a cleaned, bonded or molded product in the intended equipment. Store the capacitors where the temperature and relative humidity do not exceed -10 to 40°C and 15 to 75%.

Being exposed in air for too long may result in attenuation of leads' welding performance.

Please use capacitors within 12 months and the date on packaging label should prevail. If overdue, the capacitors should be confirmed the performance before use.

电容器的绝缘外层不可能完全密封。因此，不要在下列大气环境下使用或者储存电容器：含有腐蚀性气体、特别是放置有含氯气体、含硫气体的地方；放置有酸、碱、盐等物质的地方。也要尽量避免将电容器暴露在潮湿的空气中。在清洗、焊接或者成型产品前要确认这些过程不会影响产品的品质，这种确认可以通过使用特定装备来测试清洗过、焊接过或者成型过的产品。电容器储存温度为-10°C~40°C，相对湿度为15%~75%。

长时间暴露在空气中会导致产品引线焊接性能衰减。

请在 12 个月内使用电容器(以包装标签日期为准)。如超期，应进行性能确认后再使用。

7.2 VIBRATION AND IMPACT 振动和撞击

Do not expose a capacitor or its leads to excessive shock or vibration during use.

使用时，避免电容器及电容器引线受到过多的撞击或者振动。

7.3 SOLDERING 焊接

When soldering this product to a PCB/PWB, do not exceed the solder heat resistance specification of the capacitor. Subjecting this product to excessive heating could melt the internal junction solder and may result in thermal shocks that can crack the ceramic element.

Failure to follow the above cautions may result, worst case in a short circuit and cause fuming or partial dispersion when the product is used.

Welding condition:

(1) Wave-soldering: 260°C ± 5°C, 5 seconds at most.

The severe degree of welding do not exceed: 1) 260°C, 8 seconds; 2) 270°C, 3 seconds.)

(2) Solder with the soldering bit: temperature of the tip of soldering iron do not exceed 350°C and time should be less than 5 seconds.

焊接条件:

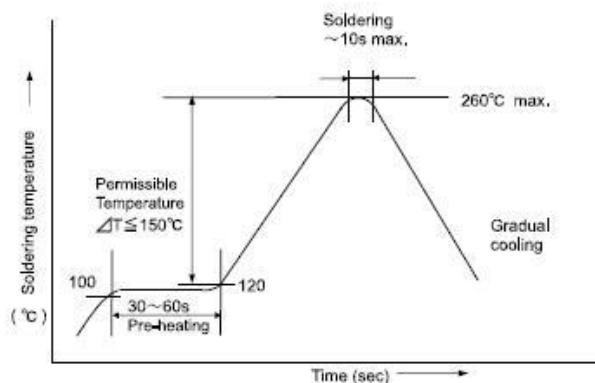
(1) 波峰焊: 260°C ± 5°C、焊接时间小于 5S(焊接严酷度不能超过 1) 260°C, 8S; 2) 270°C, 3S)

(2) 使用烙铁焊接: 烙铁尖端温度不超过 350°C, 焊接时间小于 5S。

在把产品焊接到印刷电路板过程中，不要超过电容器规格中有关耐焊接热的规定。如果产品超过耐焊接热可能会熔化用于内部连接的焊料，产生热冲击而导致陶瓷材料破裂。

上述原因导致产品在使用时出现下列最严重的失效现象: 短路引起冒烟或者局部碎裂。

Flow soldering recommended condition



7.4 Sample and environment for test should be confirmed

耐压试验、脉冲试验、自燃性试验被试验样品及试验环境应符合:

Temperature 环境温度: 小于 35 °C

Relative humidity 相对湿度: 25~75%

TEST SAMPLE: The sample is required to store under a maximum relative humidity of 75% for minimum 24 hours.

试验样品: 应在相对湿度不大于 75%条件下放置 24 小时以上。

8 Specification and test methods 技术指标及试验方法

8.1 Test condition: Unless otherwise specified, the standard range of atmospheric Conditions for marking measurements and test is conducted in the following ambient

测试条件:除非另有规定, 测试应在下列标准大气条件下进行:

Ambient temperature 环境温度: 15~35 °C Relative humidity 相对湿度: 25~75%.

If there may be any doubt on the results, measurements shall be made within the Following limits.

如对测试结果有任何疑问, 则按以下条件测试: temperature 环境温度: 20±2°C , Relative humidity 相对湿度:60~70%.

Default frequency of the related alternating current tests: 50Hz

交流电源相关测试默认频率: 50Hz

8.2 Specification and test methods技术指标及试验方

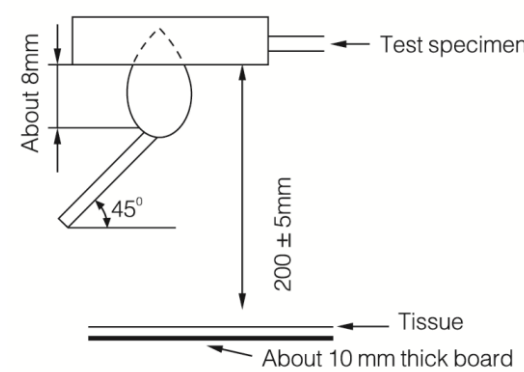
No	Item 项目	Test method 试验方法	Specification 技术参数		
1	Appearance 外观	The appearance shall be inspected by naked eyes. 用肉眼检查外观	No marked defect on appearance 外观无显著缺陷		
2	Dimensions 尺寸	The dimensions shall be measured with slide calipers 用游标卡尺测量尺寸	Dimensions of capacitor and taping shall satisfy specified requirement. 电容器的外型尺寸和编带尺寸应满足规定		
3	Marking 标志	The marking shall be checked by 4x magnifying glass.用 4 倍放大镜检查标志	Legible marking 标志清晰易辨认		
4	Capacitance and tolerance 容量和误差	The capacitance shall be measured at 25°C with 1KHz 1±0.2 Vrms. 电容量测量条件: 25°C, 1KHz1±0.2 Vrms	Refer to 1.6 参照 1.6		
5	Dissipation factor(D.F) 介质损耗	The dissipation factor shall be measured at 25°C with 1KHz 1±0.2 Vrms. 介质损耗测量条件: 25°C, 1KHz 1±0.2 Vrms.	0.1% max		
6	Insulation resistance 绝缘电阻	The insulation resistance shall be measured with 100VDC within 60±5 sec of charging. 绝缘电阻测量条件: 100VDC, 充电 60±5 秒	Test A		Test B or Test C
			CR > 0.33µF RC S	CR ≤ 0.33µF F R MΩ	R MΩ
			5000	15000	30000
7	Dielectric Strength(Voltage Proof) 耐电压	Between Lead Wires 引线之间	The capacitor should not be damaged when test voltages of table below are applied between the lead wires for 60 sec.在引线之间施加下表所示试验电压 60s, 电容器不会损坏。		No failure 不允许有失败
		Type 类型	Test Voltage 试验电压		
		X2	标准 DC1600V(r.m.s.)		
	Body Insulation 本体绝缘	First, the terminals of the capacitor should be connected together. Then, as shown in figure below, a metal foil should be closely wrapped around the body of the capacitor to the distance of about 3 to 4mm from each terminal. Then, the capacitor should be inserted into a container filled with metal balls of about 1mm diameter. Finally, ac voltage of table below is applied for 60 sec. between the capacitor lead wires and metal balls. 首先, 电容器引线终端应连接在一起。然后, 如下图所示, 将金属箔紧密缠绕在电容器本体的距各引出端大约 3 到 4mm 的地方。并将电容器插入充满直径 1mm 金属球的容器内。最后, 在电容器引线和金属球之间施加如下表所示的交流电压, 时间 60s.			
		Type 类型	Test Voltage 试验电压		
X2		AC2100V(r.m.s.)			
					

8	Robustness of Termination 引出端强度	The capacitor body shall be held in such a manner so that the axis of the lead is vertical. The tensile force of 10N(for lead of $\varnothing 0.6 \sim \varnothing 0.8\text{mm}$)shall be applied to the lead in a direction of its axis and acting in a direction away from the body of the capacitor for 10 ± 1 seconds. 使用某种方式固定电容器的本体,并使引线的轴心与本体垂直。为使引线脱离电容器本体,在本体反向引线端沿轴心施加 10N 的拉力(引线直径为 $0.56\text{mm} \sim 0.8\text{mm}$),持续 $10 \pm 1\text{s}$ 。	The capacitor shall be no broken and the lead shall be no loosened or cut off. 电容器未损坏,引线未松动或者断开										
9	Solderability Of leads 引线可焊性	The lead wire of a capacitor should be dipped into molten solder for $2 \pm 0.5\text{sec}$. The depth of immersion is up to about 1.5 to 2.0mm from the root of lead wires. Temp.of solder: Lead Free solder(Sn-3Ag-0.5Cu) $245 \pm 5^\circ\text{C}$ H63 Eutectic Solder $235 \pm 5^\circ\text{C}$ 引线应浸入熔融的焊料里 2 ± 0.5 秒,浸入深度大约为 $1.5 \sim 2\text{mm}$ (从引线底端算起) 焊料温度:无铅焊料(锡-3银-0.5铜) $245 \pm 5^\circ\text{C}$ H63 共晶焊料 $235 \pm 5^\circ\text{C}$	A new uniform coating of solder shall cover a minimum of 3/4 of the surface being immersed 新的焊料层应均匀覆盖至少 3/4 被浸入表面										
10	Resistance to Soldering heat 耐焊接热	Temperature of solder bath $260 \pm 5^\circ\text{C}$. The immersing depth of lead shall be a position 2-0.5mm from the seating plane,using a thermal screen. The thickness of the screen is $1.5 \pm 0.5\text{mm}$. The immersion time shall be 10 ± 1 seconds. Post-treatment:The capacitor shall be preserved at the standard atmospheric condition for 1 to 2 hours. 焊浴温度: $260 \pm 5^\circ\text{C}$ 。引线浸入深度:离底座 2-0.5mm。使用隔热板(厚度为 $1.5 \pm 0.5\text{mm}$)。浸入时间: 10 ± 1 秒。 后处理:电容器应在标准大气压条件下放置 1-2 小时。	Appearance 外观 Dissipation Factor 介质损耗 Capacitance Change 电容量变化 ($\Delta C/C_0$) Voltage proof (between leads) 耐电压(引线之间)	No visible damage 没有明显损坏 As spec.参照规格书 Within $\pm 5\%$ 低于 $\pm 5\%$ Refer to Item 8.2.7 参照 8.2.7									
11	Solvent Resistance 耐溶剂性	The capacitor shall be immersed into isopropyl alcohol for $30 \pm 5\text{nds.seco}$ 电容器应浸入异丙醇中 30 ± 5 秒	Appearance 外观	No visible damage 无明显损坏 Legible marking 标志清晰									
12	Damp heat steady state 稳态湿热	The capacitor shall be stored for 56 days ($1350 \pm 8\text{hours}$) at a temperature of $40^\circ\text{C} \pm 2^\circ\text{C}$ and a relative humidity of (93 ± 3) %. Pre-treatment: the capacitor shall be stored at a temperature of $85^\circ\text{C} \pm 2^\circ\text{C}$ for 1 hour,and then the capacitor shall be recovered for 24 ± 2 hours. Post-treatment: the capacitor shall be stored for 1 to 2 hours at the standard atmospheric condition. (Temperature:15 to 35°C ,Relative humidity:45 to 75%,Atmospheric pressure:86 to 106kPa) 将电容器在 $40^\circ\text{C} \pm 2^\circ\text{C}$ 、相对湿度 (93 ± 3) %条件下储存 56 天 (1350 ± 8 小时)。 预处理: 在温度 $85^\circ\text{C} \pm 2^\circ\text{C}$ 下储存电容器 1 小时,然后电容器恢复 24 ± 2 小时。 后处理: 在标准大气压下储存电容器 1-2 小时。(温度: $15 \sim 35^\circ\text{C}$,相对湿度: $45 \sim 75\%$,大气压力: $86 \sim 106$ 千帕)	Capacitance Change 电容量变化 ($\Delta C/C_0$) Dissipation Factor 介质损耗 I.R. Voltage proof 耐电压	Capacitance Change 电容量变化 Within $\pm 5\%$ Specifications 技术参数 $\Delta \text{tg}\delta \leq 0.005 (C_R > 1\mu\text{F})$ $\Delta \text{tg}\delta \leq 0.008 (C_R \leq 1\mu\text{F})$ Test A Test B or Test C <table border="1" data-bbox="1174 1771 1543 1933"> <tr> <td>$C_R > 0.33\mu\text{F}$</td> <td>$C_R \leq 0.33\mu\text{F}$</td> <td>R</td> </tr> <tr> <td>C S</td> <td>R</td> <td>M Ω</td> </tr> <tr> <td>3000</td> <td>8000</td> <td>15000</td> </tr> </table> Refer to Item 8.2.7 参照 8.2.7	$C_R > 0.33\mu\text{F}$	$C_R \leq 0.33\mu\text{F}$	R	C S	R	M Ω	3000	8000	15000
$C_R > 0.33\mu\text{F}$	$C_R \leq 0.33\mu\text{F}$	R											
C S	R	M Ω											
3000	8000	15000											



13	Endurance test(life) 耐久性试验(寿命)	<p>The capacitor shall be subjected to three impulses as shown below.</p> <p>Then the capacitors are placed at a temperature of 105 °C for 1000 hours. Throughout the test, the capacitors are subjected 50Hz/60Hz , 1.25URvoltages,except that once each hour the voltage is increased to 1000 Vrms for 0.1sec. Post-treatment:the capacitor shall be preserved for 24±2 hours at standard atmospheric condition.</p> <p>电容器应经受 3 次脉冲, 如下图。然后将电容器放置在 105 °C 下实验 1000 小时。在整个实验过程中, 持续对电容器施加 50Hz/60Hz 1.25UR 电压, 每间隔一小时应将电压升高到 1000 Vrms, 且持续时间 0.1 秒 后处理: 在标准大气压下, 电容器恢复 24±2 小时。</p>	Appearance 外观	No visible damage 无明显损伤	
		Capacitance Change 电容量变化 (ΔC/C0)	Capacitance Change 电容量变化 Within±10%		
Dissipation Factor 介质损耗	Specifications 技术参数 Δtgδ≤0.005(CR>1μF) Δtgδ≤0.008(CR≤1μF)				
Insulation resistance 绝缘电阻	Test A		Test B or Test C		
	CR>0.33μF RC S	CR≤0.33μF R MΩ	R MΩ		
		3000	8000	15000	
Voltage proof 耐电压	Refer to Item 8.2.7 参照 8.2.7				

14	Active Flammability 自燃性	<p>The capacitor should be individually wrapped in at least one but not more than two complete layers of cheese-cloth. The capacitor should be subjected to 20 discharges. The interval between successive discharges should be 5 sec. The UAC should be maintained for 2 min. after the last discharge.</p> <p>电容器应单独缠绕在粗棉布上至少 1 圈但不超过 2 圈。电容器应经受 20 次放电。放电间隔为 5 秒。在最后一次放电后, UAC 应持续 2 分钟。</p> <p>C_{1,2}:1uf±10% C₃:0.033uf±5% 10kV L₁to 4:1.5mH±20% 16A Rod core choke C_t:3uf±5% 10kV R:100Ω±2% C_x:Capacitor under test U_{AC}:U_R±5% F:Fuse, Rated 10A U_R:Rated Voltage U_t:Voltage applied to C_t</p>	The cheese-cloth should not be on fire. 粗棉布不会着火。	
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15	Passive flammability 阻燃性	 <p>Length of flame:12mm 火焰长度：12mm</p> <p>Gas burner: Length 35mm min. 煤气燃烧器：至少 35mm</p> <p>Inside diameter:0.5±0.1mm 内径：0.5±0.1mm</p> <p>Outside diameter: 0.9mm min. 外径：最小值 0.9mm</p> <p>Gas: Butane gas purity 95% min. 气体：丁烷气纯度至少 95%</p>	Severity and Requirements 严酷等级和要求			
			Flaming Ratings 有焰燃烧等级	Severity Level 严酷等级 Flame is applied for a time (S) against the capacitor volumes range (mm) 针对电容器体积范围 (mm) 施加火焰时间 (S)		
			250 < Volumes 体积 ≤ 500	500 < Volumes 体积 ≤ 1750	Volumes 体积 > 1750	
			20	30	60	10
			10	20	30	30

Attach page 附件