

 东莞市全鹏电子科技有限公司		制作日期	2019-5-17	版本	07
文件名称	MPX Approval Sheet-QP (BOX-TYPE Metallized Polypropylene Film Interference Suppression Capacitor)	文件编号	QP-AP-28	页码	13/01

一、 产品结构、特点及用途

First, the product mix, characteristics and uses

1. 该型号电容器是以聚酯膜作介质，以聚酯膜上真空蒸镀的金属层作电极，经无感卷绕成芯子，然后在芯子两端面喷涂金属并焊接镀锡引线径向引出，以阻燃塑料外壳和环氧树脂封装而成。

The model is based on polyester film as dielectric capacitors, polyester film vacuum deposition of metal layers as electrodes, with no sense of winding into the cores, and surface coating in the cores at both ends of tin metal and welding wire radial leads to flame-retardant plastic case and epoxy resin packages.

2. 该型号电容器体积小，电性能优良，可靠性高。

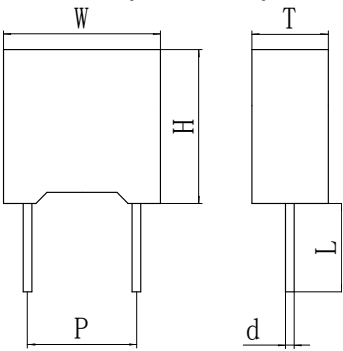
The model capacitor small in size, excellent electrical properties, high reliability.

3. 该型号电容器主要适用于电子设备的直流或脉动电路中，如旁路、隔直、耦合、退耦、脉冲、逻辑、定时、振荡等电路。

The model is mainly applied to electronic equipment capacitor DC or pulse circuit, such as bypass, blocking, coupling, decoupling, pulse, logic, timing, oscillator and other circuits.

二、 产品规格及外形尺寸

Second, product specifications and dimensions



厚度 Thickness T(mm)	尺寸误差 (Size error)					
	宽度 Width W(mm)	厚度 Thickness T (mm)	高度 Height H (mm)	间距 Spacing P (mm)	引线直径 Lead diameter d (mm)	引线长度 Lead Length L (mm)
≤3.5	W± 0.2	T± 0.2	H± 0.3	P± 0.4	0.5± 0.05	短: 4 ^{+1.5} 长: 18 ^{+1/-2}
>3.5	W± 0.3	T± 0.4	H± 0.4		0.6± 0.05	

1. P=5mm, I 型 (外形尺寸单位: mm) (耐电压: 1.6U_R, 2s)

P=5mm, I Type continued (Dimensions unit: mm) (Voltage proof: 1.6U_R, 2s)

标称容量 C _R (μF)	63Vdc (40Vac)			100Vdc (63Vac)			250Vdc (160Vac)			400Vdc (200Vac)		
	W	T	H	W	T	H	W	T	H	W	T	H
0.0001	7.2	2.5	6.5	7.2	2.5	6.5	7.2	2.5	6.5	7.2	2.5	6.5
0.00012	7.2	2.5	6.5	7.2	2.5	6.5	7.2	2.5	6.5	7.2	2.5	6.5
0.00015	7.2	2.5	6.5	7.2	2.5	6.5	7.2	2.5	6.5	7.2	2.5	6.5
0.00018	7.2	2.5	6.5	7.2	2.5	6.5	7.2	2.5	6.5	7.2	2.5	6.5
0.00022	7.2	2.5	6.5	7.2	2.5	6.5	7.2	2.5	6.5	7.2	2.5	6.5
0.00027	7.2	2.5	6.5	7.2	2.5	6.5	7.2	2.5	6.5	7.2	2.5	6.5
0.00033	7.2	2.5	6.5	7.2	2.5	6.5	7.2	2.5	6.5	7.2	2.5	6.5
0.00039	7.2	2.5	6.5	7.2	2.5	6.5	7.2	2.5	6.5	7.2	2.5	6.5
0.00047	7.2	2.5	6.5	7.2	2.5	6.5	7.2	2.5	6.5	7.2	2.5	6.5
0.00056	7.2	2.5	6.5	7.2	2.5	6.5	7.2	2.5	6.5	7.2	2.5	6.5

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2. P=5mm, I 型续 (外形尺寸单位: mm) (耐电压: 1.6U_R, 2s)

P=5mm, I Type continued (Dimensions unit: mm) (Voltage proof: 1.6U_R, 2s)

标称容量 C _R (μF)	63Vdc (40Vac)			100Vdc (63Vac)			250Vdc (160Vac)			400Vdc (200Vac)		
	W	T	H	W	T	H	W	T	H	W	T	H
0.00068	7.2	2.5	6.5	7.2	2.5	6.5	7.2	2.5	6.5	7.2	2.5	6.5
0.00082	7.2	2.5	6.5	7.2	2.5	6.5	7.2	2.5	6.5	7.2	2.5	6.5
0.001	7.2	2.5	6.5	7.2	2.5	6.5	7.2	2.5	6.5	7.2	2.5	6.5
0.0012	7.2	2.5	6.5	7.2	2.5	6.5	7.2	2.5	6.5	7.2	2.5	6.5
0.0015	7.2	2.5	6.5	7.2	2.5	6.5	7.2	2.5	6.5	7.2	2.5	6.5
0.0018	7.2	2.5	6.5	7.2	2.5	6.5	7.2	2.5	6.5	7.2	2.5	6.5
0.0022	7.2	2.5	6.5	7.2	2.5	6.5	7.2	2.5	6.5	7.2	2.5	6.5
0.0027	7.2	2.5	6.5	7.2	2.5	6.5	7.2	2.5	6.5	7.2	2.5	6.5
0.0033	7.2	2.5	6.5	7.2	2.5	6.5	7.2	2.5	6.5	7.2	2.5	6.5
0.0039	7.2	2.5	6.5	7.2	2.5	6.5	7.2	2.5	6.5	7.2	2.5	6.5
0.0047	7.2	2.5	6.5	7.2	2.5	6.5	7.2	2.5	6.5	7.2	2.5	6.5
0.0056	7.2	2.5	6.5	7.2	2.5	6.5	7.2	2.5	6.5	7.2	2.5	7.5
0.0068	7.2	2.5	6.5	7.2	2.5	6.5	7.2	2.5	6.5	7.2	3.5	7.5
0.0082	7.2	2.5	6.5	7.2	2.5	6.5	7.2	2.5	6.5	7.2	3.5	7.5
0.01	7.2	2.5	6.5	7.2	2.5	6.5	7.2	2.5	6.5	7.2	4.5	9.5
0.012	7.2	2.5	6.5	7.2	2.5	6.5	7.2	2.5	6.5	7.2	4.5	9.5
0.015	7.2	2.5	6.5	7.2	2.5	6.5	7.2	2.5	6.5	7.2	4.5	9.5
0.018	7.2	2.5	6.5	7.2	2.5	6.5	7.2	2.5	6.5	7.2	4.5	9.5
0.022	7.2	2.5	6.5	7.2	2.5	6.5	7.2	2.5	6.5	7.2	4.5	9.5
0.027	7.2	2.5	6.5	7.2	2.5	6.5	7.2	3.5	7.5	7.2	6	11
0.033	7.2	2.5	6.5	7.2	2.5	6.5	7.2	3.5	7.5	7.2	6	11
0.039	7.2	2.5	6.5	7.2	2.5	6.5	7.2	3.5	7.5	7.2	6	11
0.047	7.2	2.5	6.5	7.2	2.5	6.5	7.2	3.5	7.5	7.2	6	11
0.056	7.2	2.5	6.5	7.2	2.5	6.5	7.2	3.5	7.5			
0.068	7.2	2.5	6.5	7.2	2.5	6.5	7.2	4.5	9.5			
0.082	7.2	2.5	6.5	7.2	3.5	7.5	7.2	4.5	9.5			
0.1	7.2	2.5	6.5	7.2	3.5	7.5	7.2	4.5	9.5			
0.12	7.2	2.5	6.5	7.2	3.5	7.5	7.2	6	11			
0.15	7.2	3.5	7.5	7.2	4.5	9.5	7.2	6	11			
0.18	7.2	3.5	7.5	7.2	4.5	9.5	7.2	6	11			
0.22	7.2	3.5	7.5	7.2	4.5	9.5	7.2	6	11			
0.27	7.2	3.5	7.5	7.2	4.5	9.5						
0.33	7.2	4.5	9.5	7.2	6	11						
0.39	7.2	4.5	9.5	7.2	6	11						
0.47	7.2	4.5	9.5	7.2	6	11						
0.56	7.2	6	11	7.2	6	11						
0.68	7.2	6	11	7.2	6	11						
0.82	7.2	6	11	7.2	6	11						
1	7.2	6	11	7.2	6	11						

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三、 产品技术性能要求

Third, the product technical performance requirements

1. 引用标准: Q/HR 101-2008、IEC 60384-2
Reference standard: Q/HR 101-2008、IEC 60384-2
2. 气候类别: 55/105/21
Climate category: 55/105/21
3. 额定温度: +85℃
Rated temperature: +85℃
4. 工作温度范围: -55℃~+105℃
Operating temperature range: -55℃~+105℃
5. 额定电压: 63Vdc、100Vdc、250Vdc、400Vdc、630Vdc、1000Vdc
Rated voltage: 63Vdc、100Vdc、250Vdc、400Vdc、630Vdc、1000Vdc
6. 标称容量: 100pF~2.2 μF
Capacitance range: 1000pF~2.2 μF
7. 容量允许偏差: ±5% (J)、±10% (K)
Capacity tolerance: ±5% (J)、±10% (K)
8. 损耗角正切:
Dissipation factor:

测试频率 Test Frequency	$C_R \leq 0.1 \mu F$	$C_R > 0.1 \mu F$
1kHz	$\leq 100 \times 10^{-4}$	$\leq 100 \times 10^{-4}$
10kHz	$\leq 150 \times 10^{-4}$	$\leq 150 \times 10^{-4}$
100kHz	$\leq 300 \times 10^{-4}$	

9. 耐电压: 1.6U_R, 2s; II 型: 1.4U_R, 2s
Voltage proof: 1.6U_R, 2s; II Type: 1.4U_R, 2s
10. 绝缘电阻:
Insulation resistance:

标称容量 Nominal capacity C_R	$U_R \leq 100Vdc$	$U_R > 100Vdc$
$\leq 0.33 \mu F$	$\geq 3750M\Omega$	$\geq 7500M\Omega$
$> 0.33 \mu F$	$\geq 1250s$	

11. 自感: ≈7nH
Inductance: ≈ 7nH
12. 主要技术特性曲线图: 见附录 1
Main technical characteristics curve: See Appendix 1
13. 温度降额电压:
Temperature derating voltage:
在+85℃至+105℃的温度范围内, 每升高 1℃, 所施加电压减少量为额定电压的 1.25%
+85℃ to +105℃ in the temperature range, each increase of 1℃, the applied voltage reduction of 1.25% of rated voltage
14. 最大电压与频率的关系曲线图: 见附录 2
The relationship between the maximum voltage and frequency curve: See Appendix 2
15. 最大电流与频率的关系曲线图: 见附录 3
Maximum current and the frequency of the curve: see Appendix 3

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21. RoHS 符合性:

RoHS compliance:

如无特别说明, 该型号所有规格的产品, 均是无铅产品, 且符合欧盟 RoHS 指令 (2000/53/EC, 2002/95/EC, 2002/96/EC, 2003/11/EC) 的环保要求和《电子信息产品污染控制管理办法》。

If not specified, the model for all specifications of products are lead-free products, and compliance with EU RoHS directive (2000/53/EC, 2002/95/EC, 2002/96/EC, 2003/11/EC) of the Environmental requirements and the "Electronic Information Products Pollution Control Regulations."

22. SVHC 符合性:

SVHC compliance:

如无特别说明, 该型号所有规格的产品, 均符合 REACH 法规 (EC 1907/2006) 的要求。如果有物质超过规定限值, 我们将告知客户。

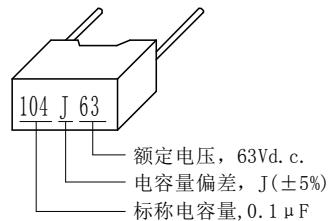
If not specified, all specifications of the model are in line with REACH regulations (EC 1907/2006) requirement. If there are material exceeds the limits, we will inform the customer.

四、标志、包装、运输、储存说明

Fourth, marking, packaging, transportation, storage instructions

1. 标志

Mark



注: 电容量的三位数代码表示法, 其三位数代表的电容量为: 前两位数 $\times 10^{\text{第三位数}}$ pF, 如:

102: $10 \times 10^2 \text{pF} = 1000 \text{pF}$; 683: $68 \times 10^3 \text{pF} = 68000 \text{pF} = 0.068 \mu\text{F}$; 104: $10 \times 10^4 \text{pF} = 100000 \text{pF} = 0.1 \mu\text{F}$; 474: $47 \times 10^4 \text{pF} = 470000 \text{pF} = 0.47 \mu\text{F}$; 105: $10 \times 10^5 \text{pF} = 1000000 \text{pF} = 1 \mu\text{F}$; 等等。

Note: The capacitance of the three-digit code representation, the three-digit capacity on behalf of the power: the former double-digit third digit $\times 10$ pF, such as:

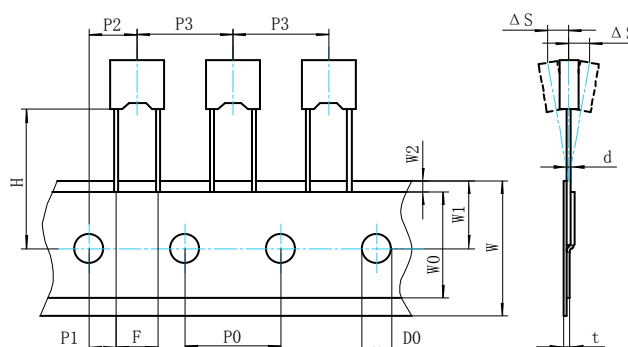
102: $10 \times 102 \text{pF} = 1000 \text{pF}$; 683: $68 \times 103 \text{pF} = 68000 \text{pF} = 0.068 \mu\text{F}$; 104: $10 \times 104 \text{pF} = 100000 \text{pF} = 0.1 \mu\text{F}$; 474: $47 \times 104 \text{pF} = 470000 \text{pF} = 0.47 \mu\text{F}$; 105: $10 \times 105 \text{pF} = 1000000 \text{pF} = 1 \mu\text{F}$; and so on.

2. 包装

Package

2.1 成品编带示意图及相关尺寸 (附表: 技术指标)

The finished braid diagram and related dimensions (Schedule: technical specifications)



图示 P=5 产品编带示意图

The P=5 product braid diagram

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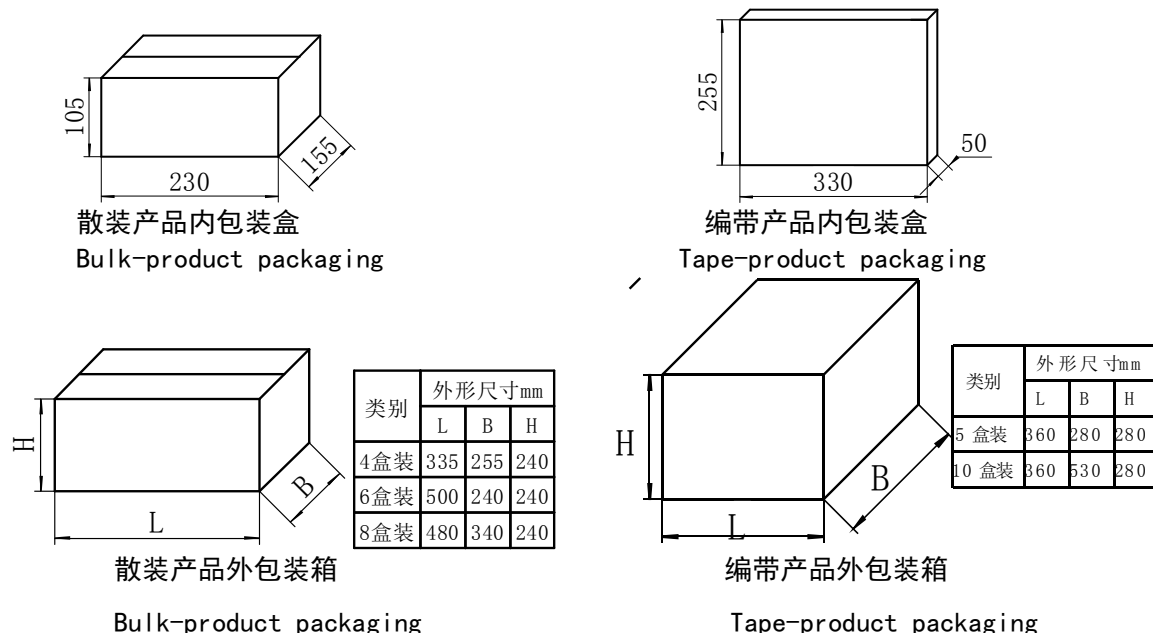
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技术指标名称 Specifications Name	代号 Code	尺寸 (单位 mm) Size (mm)	
		P=5	误差 Error
引线直径 Lead diameter	d	0.5、0.6	±0.05
电容器编带间距 Tape Pitch	P3	12.7	±1
送带孔距 Sent with a pitch	P0	12.7	±0.2
引出线位置 Lead position	P1	3.85	±0.7
电容器本体位置 Capacitor body position	P2	6.35	±1.3
引出线间距 Lead spacing	F	5	+0.6 /-0.1
电容器侧面倾斜 Capacitor side of the tilt	ΔS	0	±2.0
电容器底部至带孔中心距离 The distance to the bottom of hole center capacitor	H	18.5	±0.5
纸带宽度 Tape width	W	18	+1 /-0.5
胶带纸宽度 Paper Tape Width	W0	6	min.
送带孔位置 Sent hole location	W1	9	±0.5
胶带纸位置 Position paper tape	W2	3	max.
送带孔直径 Sent hole diameter	D0	4	±0.2
编带总厚度 Tape total thickness	t	0.7	±0.2

2.2 包装盒示意图及相关尺寸 (附表: 包装数量)

Box diagram and the relevant size (Schedule: packing quantity)



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外壳类型 Shell type	散装每袋数量 (只/袋) Bulk bag number (pcs/pack)	编带每盒数量 (只/盒) Braid each plate number (pcs/box)
2.5x6.5x7.2	1000	2000
3.5x7.5x7.2	1000	1500
4.5x9.5x7.2	500	1000
5x10x7.2	500	1000
5x8x7.5	500	1000
6x11x7.2	500	1000

3. 运输

Transport

装有电容器的包装箱允许以任何方式运输，但应避免雨雪的直接淋浇和机械损伤。

Equipped with a capacitor box to allow the transport in any way, but should avoid direct rain and snow with spraying and mechanical damage.

4. 储存

Store

由于大气中存在氢氯化物、氢硫化物、硫酸物质等，所以产品储存在大气中，必须注意引线的可焊性会变差。

Exists in the atmosphere of hydrogen chloride, hydrogen sulfide, sulfuric acid substances, the products stored in the atmosphere, must pay attention to lead the weldability will be worse.

在不打开原包装的情况下，产品的储存条件应满足以下要求：

Original packaging without opening the case, the product of the storage conditions should meet the following requirements:

(1) 产品不能暴露在高温和高湿状态，要求储存场所的环境温度不超过 35℃, 不低于-5℃，相对湿度不超过 80%。

product can not be exposed to high temperature and high humidity conditions, temperature of storage space required does not exceed 35 °C, not lower than -5 °C, relative humidity of not more than 80%.

(2) 对于储存时间，要求散装产品不超过 24 个月，编带产品不超过 12 个月。

For the storage time required bulk product is not more than 24 months, braid products does not exceed 12 months.

若打开原包装，储存要求将更严格，所以建议储存产品时不要打开原包装。

If the opening of the original packaging, storage requirements become more stringent, it is proposed that storage products, do not open the original packaging.

五、 订购、安装、使用说明

Fifth, ordering, installation, instructions

1、 订购

order

在订购或索要样品时，要尽可能详细地提供以下信息：

In the order or request samples, to provide the following information in detail as possible:

- (1) 额定工作电压：DC；
Rated voltage: DC;
- (2) 标称电容量及其允许偏差；J、K 等；
Nominal capacity and tolerance; J, K, etc.;
- (3) 外形尺寸：电容器本体尺寸、引出线尺寸等；

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Dimensions: capacitor body size, lead size, etc.; (4) 包装形式: 散装、编带 Packing: Bulk, Tape (5) 最终产品种类: 音响功放、电焊机、高中频开关电源、电子节能灯、ADSL、UPS 等; Final Products: color television sets, monitors, switching power supply, electronic energy saving lamps, ADSL, UPS, etc.; (6) 用途或电路图: 直流回路、交流脉冲回路 (S 校正电路、行逆程电路) 等; use or circuit: DC circuit, AC pulse circuit (S correction circuit, horizontal resonance circuits), etc.; (7) 使用条件: 脉冲峰值、频率、波形、电流等; Use conditions: pulse peak, frequency, waveform, current, etc.; (8) 使用环境: 工作环境温度、湿度、散热情况等; use of the environment: the working environment temperature, humidity, thermal conditions, etc.; (9) 安全性: 当电容器短路或开路时对其他部件的影响, 当其他部件或电路工作异常时对电容器的影响。 security: When the capacitor short-circuit or open circuit the influence of other components, while other components or circuit is abnormal on Capacitors. 2、使用 using 2.1 工作电压 Operating Voltage 额定工作电压是指在不大于额定温度下可连续施加的最大电压, 超过该电压可能会导致电容器介质击穿或短路。 Rated working voltage is the maximum voltage at not more than the rated temperature can be continuously applied, more than the voltage may cause the capacitor dielectric breakdown or short circuit. 当一个直流电容器被作为交流电容器使用时, 其最大工作电压由电容器内部的发热情况决定。 When a DC capacitor is used as AC capacitor is used, the maximum working voltage is determined by the heat within the capacitor. 若电容器上施加的电压可能会因为其他部件影响而升高并超过额定电压, 则有必要使用保护装置。 If the voltage on the capacitor may be because other components influence rises and exceeds the rated voltage, it is necessary to use protection device. 2.2 工作电流 Operating Current 电容器的工作电流等于电容器 C 与电压上升速率的乘积, 即 $I=C \times dV/dt$。 Working current of the capacitor is equal to the product of the capacitor C and voltage rising rate, namely $I=C \times dV/dt$. 由于电容器存在损耗, 在高频或高脉冲下使用时会发热引起温升, 温升过高可能引起电容器热击穿。因此, 电容器安全使用条件不仅受额定电压的限制, 而且受额定电流的限制。 Because of the existence of loss in capacitor, high frequency or high pulse use will cause temperature heating, high temperature may cause thermal breakdown of the capacitor. Therefore, safety use of capacitor must be rated voltage constraints, but also by the rated current limit. 由于该型号电容器介质为极性介质, 且体积很小, 所以不建议在高频或高脉冲条件下使用。 Because of this type of capacitor medium polar medium, and the volume is small, so is not recommended in high frequency or high pulse conditions.					

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文件名称	MPX Approval Sheet-QP (BOX-TYPE Metallized Polypropylene Film Interference Suppression Capacitor)	文件编号	QP-AP-28	页码	13/10
2.3 工作频率 the operating frequency 电容器的频率特性是指电容器电容量等参数随频率变化的关系。一般来讲，电容器在高频下工作时，随着工作频率的升高，由于绝缘介质介电系数减小，电容量将会减小，而损耗将增大，并且会影响电容器的分布参数。为了保证电容器的稳定性，一般应将电容器的极限工作频率选择在电容器固有谐振频率的 $1/3 - 1/2$ 。 Frequency characteristics of capacitor is a capacitor capacitance parameter variation with frequency. Generally speaking, the capacitor in high frequency, with the increase of frequency, the dielectric permittivity decreases, capacitance will decrease, and the loss will increase, and will affect the distribution parameters of capacitor. In order to guarantee the stability of capacitor, the general should be working frequency limit the selection of the capacitor in the capacitor resonant frequency of the $1/3 - 1/2$. 2.4 阻燃性 Flammability 尽管该型号电容器在封装时使用了阻燃环氧树脂和阻燃塑料外壳，但外部的持续高温或火焰仍可能导致芯子变形、外封装破裂、甚至电容器芯子融化或燃烧。 Although this type of capacitor used flame retardant epoxy resin and flame retardant plastic casing in the package, but continuous outer high temperature or flame may still lead to core deformation, external packaging, and even rupture of the capacitor core melting or burning.					



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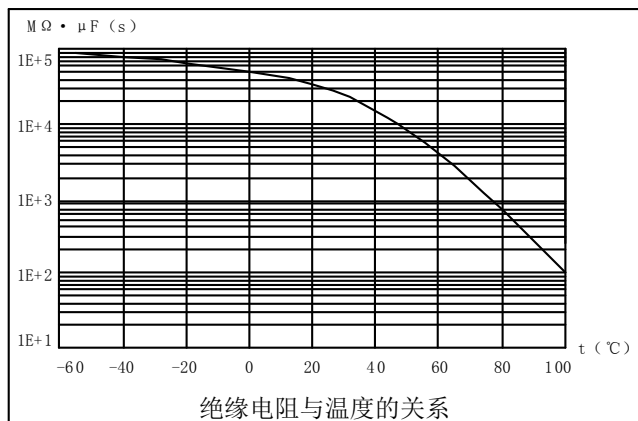
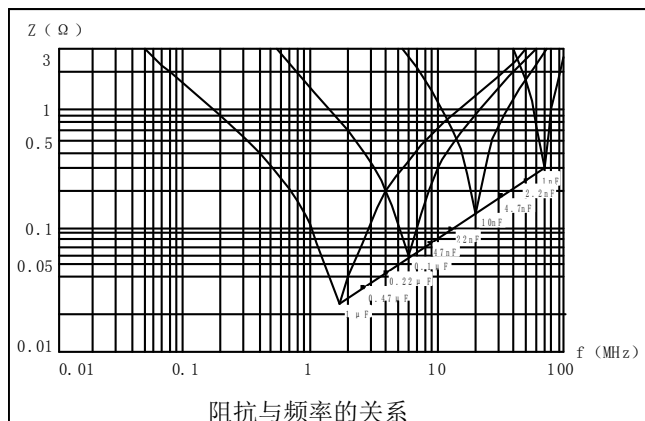
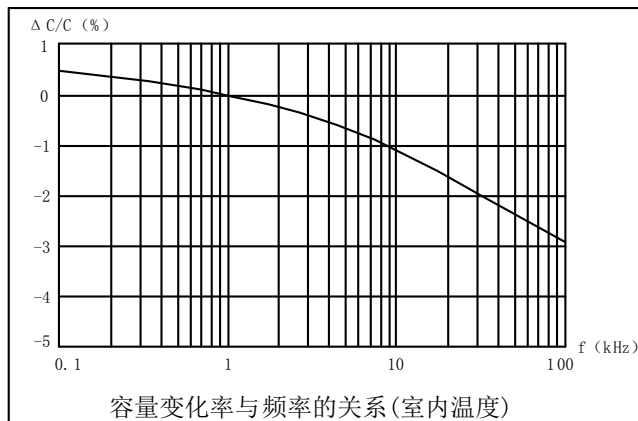
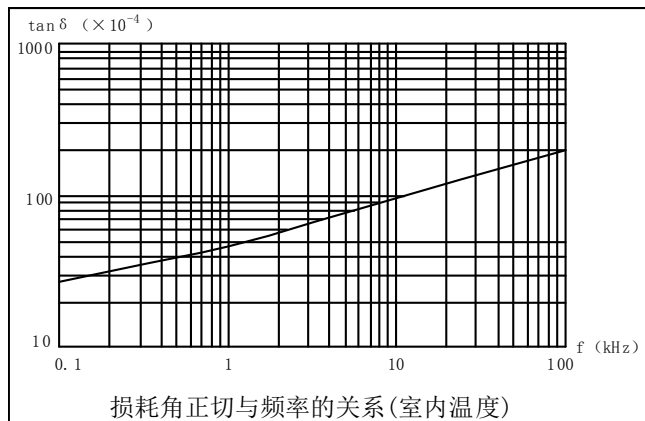
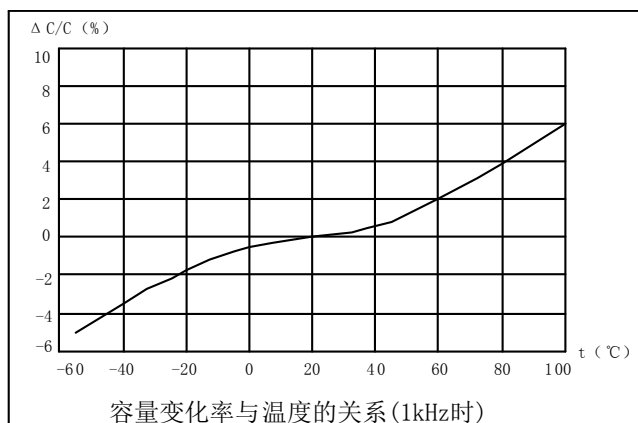
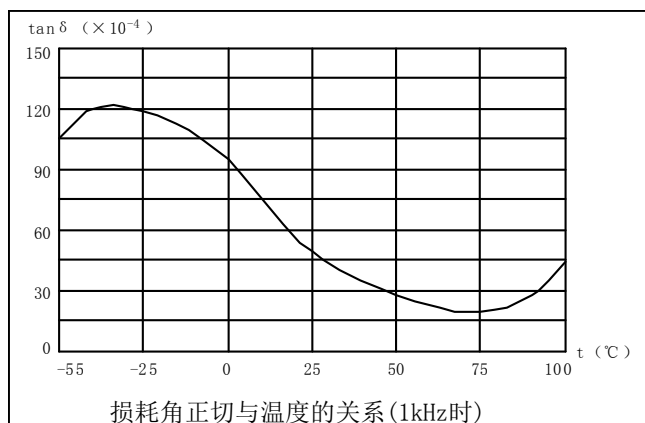
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附录 1:

Appendix 1:

主要技术特性曲线图

Main technical characteristics curve



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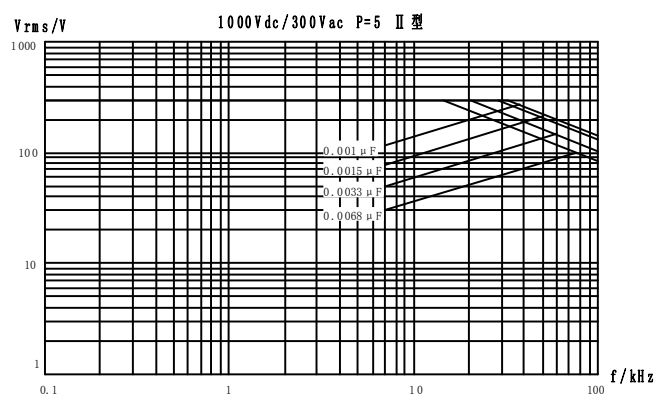
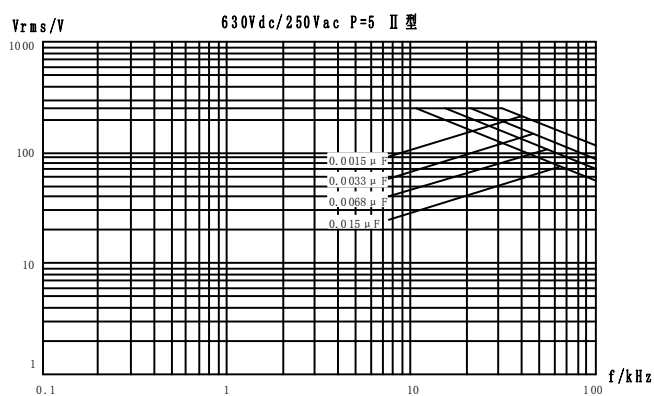
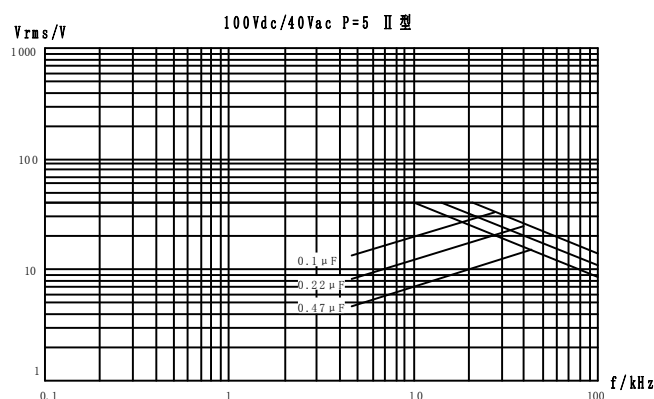
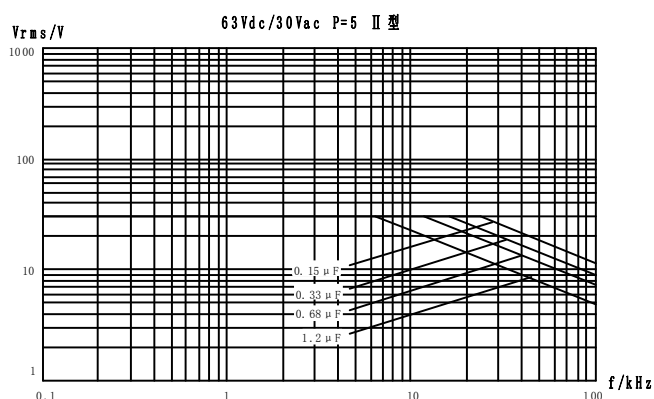
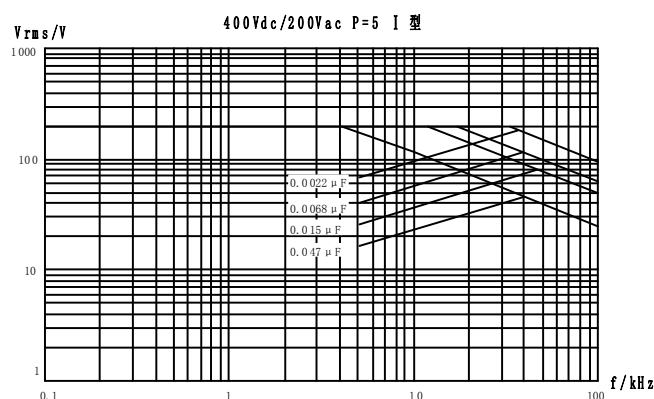
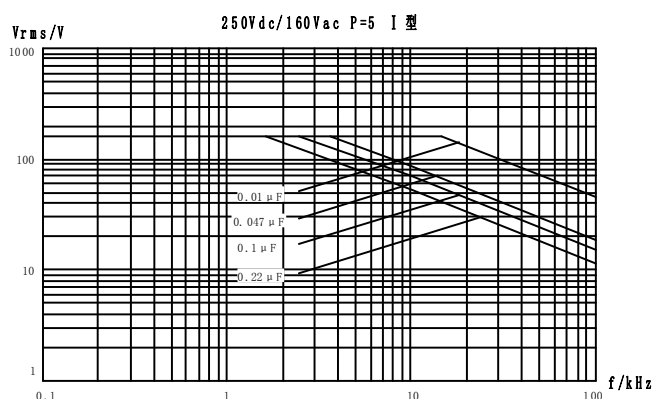
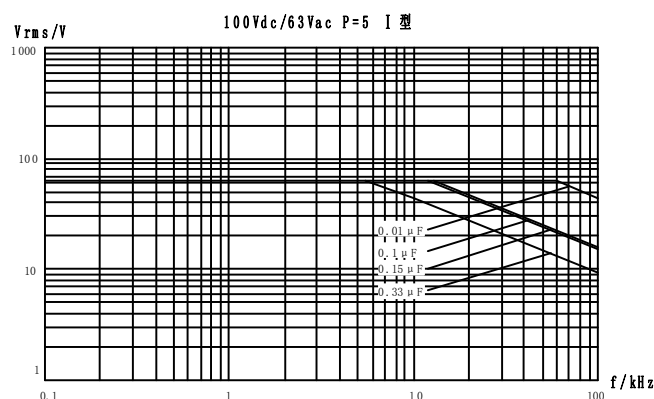
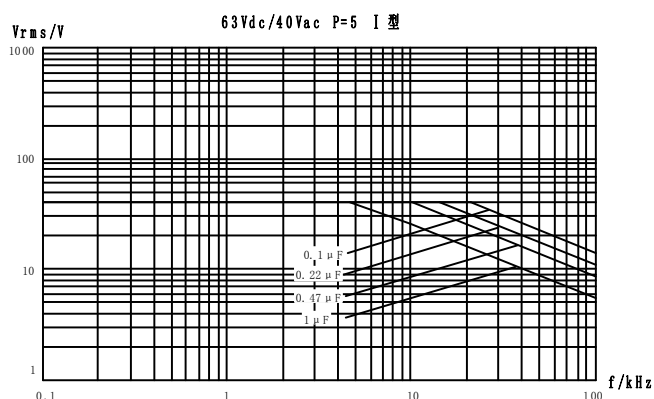
附录 2:

Appendix 2:

最大工作电压与频率的关系 (正弦波形, 环境温度不大于 40℃)

Maximum operating voltage and frequency relationship

(sine wave, the ambient temperature is not greater than 40 °C)



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附录 3:

Appendix 3:

最大工作电流与频率的关系 (正弦波形, 环境温度不大于 40℃)
Maximum operating current and the relationship between frequency
(sine wave-shaped, ambient temperature not greater than 40 °C)

