# 规格承认书

**客户名称：深圳市立创电子商务有限公司**

**客户料号：**

**产品名称：盒式双面金属化聚丙烯薄膜电容器**

**华铸料号：MPB22183J1000DB1156075**

**规格型号：MPB-22 183J/1000V P15 灰壳 散装**

**日期： 2026/09/22**

**产品环保要求：**

**RoHS 要求☑　　REACH 要求☑　　卤素要求☐**

| 华铸承认栏 | | | 客户承认栏 | | |
|---|---|---|---|---|---|
| 制订 | 审核 | 批准 | 检验 | 审核 | 批准 |
| 雷俊 | 徐志钦 | 王成 | | | |

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**附页：**

# 承 认 规 格

| 序号 | 客户料号 | 华铸料号 | 规格型号 | 备注 |
|---|---|---|---|---|
| 1 | / | MPB22183J1000DB11560<br>75 | MPB-22 183J/1000V P15 | 散装 |
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## 文件变更履历

| 序号 | 变更履历摘要 | 版次 | 修订日期 | 修订人 | 核准人 |
|---|---|---|---|---|---|
| 1 | 初版制定 | 1 | 2016/07/09 | 雷俊 | 王成 |
| 2 | 产品代码更新 | 2 | 2025/04/24 | 袁圆 | 王成 |
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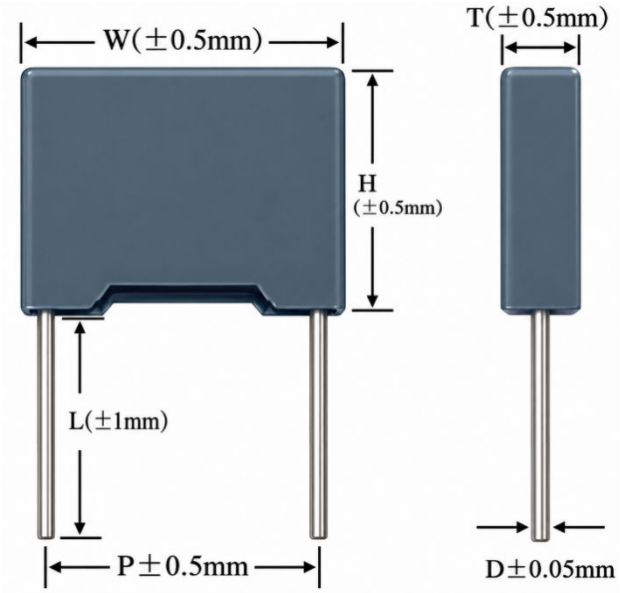
## 1、规格、成型范围、外形尺寸及图示

Category、Shaping range、Dimensions and Drawings



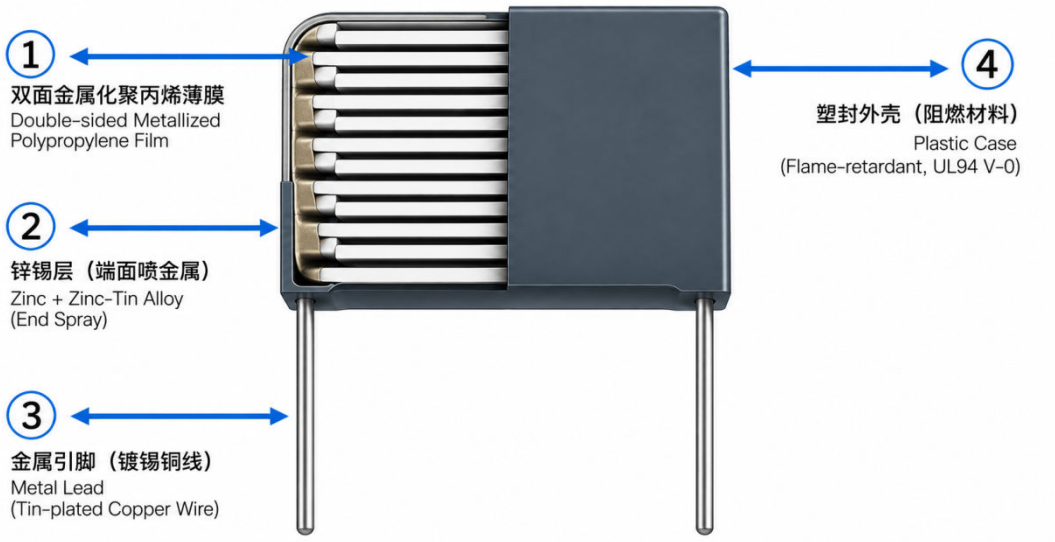

| 品名规格 Specification | 外形尺寸（单位：mm） Dimensions and Drawings | | | | | |
|---|---|---|---|---|---|---|
| | W ± 0.5 | H ± 0.5 | T ± 0.5 | L ± 2.0 | D ±0.05 | P ± 0.5 |
| MPB-22 183J/1000V P15 | 18.0 | 13.5 | 7.5 | 15.0 | 0.8 | 15 |

## 2、产品介绍 Products introduction

盒式双面金属化聚丙烯膜电容是由双面金属化聚丙烯薄膜，采用无感结构卷绕而成，引线采用镀锡铜，外部使用阻燃塑封外壳封装而成。具有良好的自愈功能和优良的阻燃性，符合 UL94-V0 标准。

The capacitor is constructed with double-sided metallized polypropylene film using a non-inductive winding structure, with tin-plated copper leads and a flame-retardant plastic case. It features excellent self-healing capability and flame-retardant performance, and complies with the UL 94 V-0 flammability rating.

## 3、产品结构和关键材料 Construction and main materials of products




| 序号<br>NO. | 名 称<br>Name | 材 料<br>Material | 备注<br>Remarks |
|---|---|---|---|
| 1 | 薄膜<br>Film | 双面金属化聚丙烯材料<br>Double-sided Metallized Polypropylene Film | |
| 2 | 锌锡层<br>End spray | 锌+锌锡合金<br>Zinc + Zinc-Tin Alloy | |
| 3 | 金属引脚<br>Metal Lead | 镀锡铜<br>Tin-plated Copper Wire | 允许偏差<br>Tolerance: +0.05 mm |
| 4 | 包封<br>Encapsulation | 塑封外壳<br>Flame-retardant Plastic Case | UL-94V0 |

## 4、典型应用 Type application

双面金属化聚丙烯膜、损耗小、内部温升小，适用于高压、高频、脉冲和谐振电路

Double sided metallized polypropylene, low loss, small inherent temperature rise, Suitable for the high voltage, high frequency,pulse and resonance circuits.

## 5、特点 Features

5.1 双面金属化聚丙烯引出 Doublesided meatallized pplypropylene structure.

5.2 损耗小，内部温升小 Low loss and small inherent temperature rise,

5.3 自愈性 Self-healing property

5.4 阻燃性(符合 UL 94V-0)Flame retardant type(compliance with UL 94V-0)

5.5 非常小的损耗 Very small loss

5.6 优秀的容量，损耗的频率和温度特性 Excellent capacitance and DF for frequency andtemperature characteristics

5.7 高绝缘阻值 High insulation resistance

## 6.性能及可靠性要求 Performance & Reliability Requirements

| 项目<br>Item | 性能要求<br>Performance Requirements | 试验方法及条件<br>Test Method & Conditions |
|---|---|---|
| 绝缘电阻<br>Insulation Resistance | C ≤ 0.33 μF: IR ≥ 100,000 MΩ<br>C > 0.33 μF: IR × C ≥ 30,000 s | 20℃, 1 min；<br>10V≤UR<100V→10VDC<br>100V≤UR<500V→100VDC<br>UR≥500V→500VDC |
| 可焊性<br>Solderability | 引线应均匀镀锡，焊料覆盖良好。<br>The terminals shall be uniformly wetted with solder. | 焊槽法 Ta，方法 1<br>Solder bath method Ta, Method 1：235±2℃；2.0±0.5s |
| 初始测量<br>Initial Measurement | 电容量、损耗角正切按 No.5。<br>Capacitance and dissipation factor: according to No. 5. | |
| 引出端强度<br>Robustness of Terminations | 外观无可见损伤。<br>No visible damage. | 拉力 Tensile Test<br>0.5 ≤ φd ≤ 0.8 mm：10 N<br>1.0 ≤ φd ≤ 1.2 mm：20 N<br>弯曲 Bending Test (Ub)<br>0.5 ≤ φd ≤ 0.8 mm：5 N<br>1.0 ≤ φd ≤ 1.2 mm：10 N<br>每个方向连续进行 2 次弯曲<br>Two successive bends in each direction |

| 项目<br>Item | | 性能要求<br>Performance Requirements | 试验方法及条件<br>Test Method & Conditions |
|---|---|---|---|
| 耐焊接热<br>Resistance to Soldering Heat | | 外观无可见损伤，标志清晰。<br>No visible damage; marking shall remain legible. | 焊槽法 Tb，方法 1A<br>Solder bath method Tb, Method 1A<br>260±5℃, 10±1s |
| 最终测量<br>Final Measurements | | ΔC/C ≤ ±2%<br>Δtanδ ≤ 0.0020 (10 kHz, C ≤ 1.0 μF)<br>Δtanδ ≤ 0.0020 (1 kHz, C > 1.0 μF)<br>IR ≥ 额定值的 50%<br>IR ≥ 50% of the specified value | |
| 初始测量<br>Initial Measurement | | 电容量、损耗角正切按 No.5。<br>Capacitance and dissipation factor: according to No. 5. | |
| 温度快速变化<br>Rapid Change of Temperature | | 外观无可见损伤<br>No visible damage; | TA = -40℃ TB = +105℃<br>5 cycles t = 30 min |
| 最终测量<br>Final Measurements | | 外观无可见损伤，标志清晰。<br>No visible damage; marking shall remain legible.<br>ΔC/C ≤ ±5%<br>Δtanδ ≤ 0.0020 (10 kHz, C ≤ 1.0 μF)<br>Δtanδ ≤ 0.0020 (1 kHz, C > 1.0 μF)<br>IR ≥ 额定值 50% | |
| 气候顺序<br>Climatic Sequence | 初始测量<br>Initial Measurement | 电容量、损耗角正切按 No.5。<br>Capacitance and dissipation factor: according to No. 5. | |
| | 干热<br>Dry Heat | | +105℃, 16 h |
| | 循环湿热<br>Damp Heat, Cyclic | | Test Db, Severity b, First Cycle |

| 项目<br>Item | | 性能要求<br>Performance Requirements | 试验方法及条件<br>Test Method & Conditions |
|---|---|---|---|
| | 寒冷<br>Cold | | -40℃, 2 h |
| | 循环湿热<br>Damp Heat, Cyclic | | 其余循环 Remaining Cycles；<br>试验结束后施加 UR 1min |
| | 最终测量<br>Final Measurements | | 外观无可见损伤，标志清晰。<br>No visible damage; marking shall remain legible.<br>ΔC/C ≤ ±3%<br>Δtanδ ≤ 0.0030 (10 kHz, C ≤ 1.0 μF)<br>Δtanδ ≤ 0.0030 (1 kHz, C > 1.0 μF)<br>IR ≥ 额定值 50% |
| 稳态湿热<br>Damp Heat, Steady State | | 外观无明显鼓胀，标志清晰。<br>No obvious swelling; marking shall remain legible.<br>ΔC/C ≤ ±2%<br>Δtanδ ≤ 0.0010 (1 kHz)<br>IR ≥ 额定值 90% | 85℃<br>85%RH<br>48 h |
| 耐久性<br>Endurance | | 外观无可见损伤，标志清晰。<br>No visible damage; marking shall remain legible.<br>ΔC/C ≤ ±5%<br>Δtanδ ≤ 0.0020 (10 kHz)<br>IR ≥ 额定值 50% | +85℃, 1000 h<br>施加电压：1.25 倍额定电压<br>Applied Voltage: 1.25UR |
| 随温度而定的特性<br>Temperature Characteristics | | 在 b，d，f 点上进行电容量测量:<br>在下限类别温度-40°C 时的特性:<br>0≤(Cb-Cd)/Cd≤+3%<br>在上限类别温度 110°C 时的特性:<br>-4%≤(Cf-Cd)/Cd≤0 | 静态法 Static Method<br>充电电压：UR<br>Charging Voltage: UR<br>依次保持：<br>a. 20±2℃<br>b. -40±3℃<br>d. 20±2℃<br>f. 110±2℃<br>g. 20±2℃ |

| 项目<br>Item | 性能要求<br>Performance Requirements | 试验方法及条件<br>Test Method & Conditions |
|---|---|---|
| 充电和放电<br>Charge and Discharge | ΔC/C ≤ ±5%<br>Δtanδ ≤ 0.0030 (10 kHz, 0.1 V)<br>耐电压 / Voltage Proof: 1.6UR<br>IR ≥ 额定值 50% | 次数 Number of Cycles: 10,000<br>充电时间 Charging Time: 0.5 s<br>放电时间 Discharging Time: 0.5 s<br>充电电压 Charging Voltage: UR |
| 脉冲电压<br>Pulse Voltage | 外观无炸裂、无燃烧。<br>No cracking or burning.<br>ΔC/C ≤ ±5%<br>Δtanδ ≤ 0.0020 (10 kHz)<br>IR ≥ 额定值 50%<br>耐电压 Voltage Proof: 1.6UR | 次数 Number of Pulses: 24<br>脉冲电压 Pulse Voltage: 1.8UR |
| 纹波电流<br>Ripple Current | 外观无炸裂、无燃烧。<br>No cracking or burning.<br>ΔC/C ≤ ±10%<br>Δtanδ ≤ 0.0030 (10 kHz, 0.1 V)<br>Δtanδ ≤ 0.0030 (1 kHz, 1 V)<br>IR ≥ 额定值 50%<br>耐电压<br>Voltage Proof: 1.6UR | 试验温度 Test Temperature: Room Temperature<br>纹波电流 Ripple Current: 10 A<br>直流偏压 DC Bias: UR − Ripple Voltage<br>试验时间 Test Duration: 5 h<br>试验频率 Test Frequency: 100 kHz |
| 阻燃性<br>Flame Retardancy | 离开火焰后，任一电容器继续燃烧时间不得超过 30s，且燃烧滴落物不得引燃下方棉纸。<br>After removal of the flame, the capacitor shall not continue to burn for more than 30 s, and any flaming droplets shall not ignite the tissue paper placed below. | IEC 695-2-2<br>Needle-flame test<br>Flame-retardancy category C<br>One flame exposure |

## 7、编制依据 The text of this standard is based upon the following documents

GB 2693 - 2001　　总规范　　generic specification

GB 10190-88　　分规范　　sectional specification

SJ/T 10353-93　　详细规范　　detail specification

IEC 68 号公报　　IEC68

## 8、标准试验用的大气压 Standard air pressure in test

除非另有规定，所有试验和测量均应在 GB2421—81 第 4.3 条（IEC68–1 第 5.3 条）中规定试验用标准大气条件下进行。

Unless otherwise specified ,all tests and measurements shall be made under No.5.3)

储存温度 Temperature：　15℃~35℃

工作温度 Work Temperature：-40℃~110℃

相对湿度 Relative humidity：　45%~75% RH

气压 Air pressure：　86~106kPa

## 9、电气特性 Electrical specifications

| | |
|---|---|
| 引用标准。<br>Reference Standard, | GB/T 10190、IEC 60384-16 |
| 工作温度<br>Operating Temperature | −40°C to +110°C |
| 电压降额<br>Voltage Derating | 环境温度超过 +85°C 后，额定直流电压 UR(DC) 每升高 1°C 降额 1.25%，最高至 +110°C。<br>Above +85°C, derate the rated DC voltage UR(DC) by 1.25% per °C up to +110°C. |
| 气候类别<br>Climatic Category | 40/110/56 |
| 额定电压<br>Rated Viltage | 250V/400V/630V/1000V/1600V/2000VDC: |
| 电容量范围<br>Capacitance Range | 0.0022μF~3.3μF |
| 电容量偏差<br>Capacitance Tolerance | ±5%(J)、±10%(K)、±20%(M)　(20℃,1kHz) |
| 损耗角正切<br>Dissipation Factor | ≤0.0010　(20℃,1kHz) |

| | |
|---|---|
| 绝缘电阻<br>Insulation Resistance | C ≤ 0.33 μF: IR ≥ 100,000 MΩ<br>C > 0.33 μF: IR × C ≥ 30,000 s　(20℃,100Vdc, 1min) |
| 端子间电压<br>Withstand voltage BetweenTerminals | 应无永久性击穿或飞弧<br>No permanent break down or flashover<br>1.6UR(d.c) 5s<br>Cut off Current 10mA ARC=OFF,Voltage raising time 5s |

最大脉冲电压上升率
Maximum Pulse Voltage Rise Rate (dV/dt)

dV/dt(v/us)

| UR(VDC) | Lead Spacing (mm) | | | | |
|---|---|---|---|---|---|
| | P=7.5 | P=10 | P=15 | P=22.5 | P=27.5 |
| 250 | 1200 | 1000 | 550 | 250 | 200 |
| 400 | 1800 | 1500 | 900 | 500 | 300 |
| 630 | 3200 | 3200 | 2500 | 1500 | 900 |
| 1000 | 6000 | 6000 | 3300 | 2100 | 1000 |
| 1600 | N/A | N/A | 6000 | 3000 | 2000 |
| 2000 | N/A | N/A | 10000 | 5000 | 2200 |

**注 Note：**当实际工作电压 U＜UR 时，允许的 dV/dt 可按**(dV/dt)allow = (dV/dt)rated × UR/U** 修正，但不得超过电容器最大峰值电流及允许温升限制。When U < UR, the permissible dV/dt may be calculated by **(dV/dt)allow = (dV/dt)rated × UR/U**, provided that the maximum peak current and thermal limits of the capacitor are not exceeded.

## 9、产品编码说明 Part number code system

| MPB | 22 | 183 | J | 1000 | D | B | 1 | 15 | 6 | 075 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |

9.1 **电容器系列**：由三位英文字母组成，用于表示电容器的产品系列。

**Capacitor Series**: Represented by three letters to identify the capacitor series.

| 代码<br>Code | 产品系列<br>Capacitor Series |
|---|---|

| | |
|---|---|
| MPP | 金属化聚丙烯薄膜电容器<br>Metallized Polypropylene Film Capacitor |
| MEF | 金属化聚酯薄膜电容器<br>Metallized Polyester Film Capacitor |
| PPS | 高压金属化聚丙烯薄膜电容器<br>High-voltage Metallized Polypropylene Film Capacitor |
| MPB | 盒式金属化聚丙烯薄膜电容器<br>Box-type Metallized Polypropylene Film Capacitor |

9.2 **产品类型代码**：产品类型代码由两位字符组成，用于区分不同结构及应用类型。

**Product Type Code**: Represented by a two-character code to identify different capacitor structures and application types.

| 代码<br>Code | 产品类型<br>Product Type |
|---|---|
| 11 | PFC 用盒式金属化聚丙烯薄膜电容器<br>PFC Box-type Metallized Polypropylene Film Capacitor |
| 22 | MMKP82 盒式双面金属化聚丙烯薄膜电容器<br>MMKP82 Box-type Double-sided Metallized Polypropylene Film Capacitor |
| 33 | CBB21B 盒式金属化聚丙烯薄膜电容器<br>CBB21B Box-type Metallized Polypropylene Film Capacitor |
| ZR | 阻容降压用盒式金属化聚丙烯薄膜电容器<br>Box-type Metallized Polypropylene Film Capacitor for Capacitive Dropper |
| PE | 盒式金属化聚酯薄膜电容器<br>Box-type Metallized Polyester Film Capacitor |

9.3 **电容量**：用皮法表示（1 微法=$10^6$ 皮法），由三位数字组成，前两位数表示有效数字，第三位数表示后面零的个数。

**Capacitance:**Expressed in picofarads (1 microfarad = 1,000,000 picofarads). The first two digits represent the significant figures, and the third digit specifies the number of zeros to follow.

| 代码 Code | 102 | 103 | 104 | 105 | 106 |
|---|---|---|---|---|---|
| 标称容量 Nominal Capacitance | 1,000 pF 0.001 μF | 10,000 pF 0.01 μF | 100,000 pF 0.1 μF | 1,000,000 pF 1.0 μF | 10,000,000 pF 10.0 μF |

**9.4 容量偏差：** 由一位字母表示。

**Tolerance:**Represented by a single letter.

| 代码 Code | F | G | L | H | J | N | K | M |
|---|---|---|---|---|---|---|---|---|
| 电容量允许偏差 Capacitance Tolerance | ±1% | ±2% | ±2.5% | ±3% | ±5% | ±7.5% | ±10% | ±20% |

**9.5 额定电压：** 由四位数表示，不足四位的用“0”在前面补充。

**Rated Voltage:**Represented by four digits. Zeros are added to the left to make up four digits.

| 代码 Code | 0100 | 0250 | 0400 | 0450 | 0630 | 1000 |
|---|---|---|---|---|---|---|
| 额定电压 Rated Voltage | 100 V | 250 V | 400 V | 450 V | 630 V | 1000 V |

**9.6 电压类型：** 由一位字母表示。

**Type Of Voltage:**Represented by a single letter.

| 代码 Code | A | D |
|---|---|---|
| 电压类型 Voltage Type | AC 交流 Alternating Current | DC 直流 Direct Current |

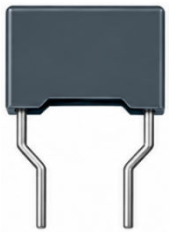
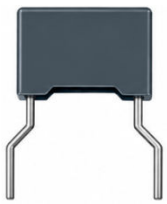
**9.7 包装方式：** 由一位字母表示。

**Package:** Represented by a single letter.

| 代码<br>Code | B | T |
|---|---|---|
| 包装方式<br>Packaging | 散装<br>Bulk | 编带<br>Taping |

**9.8 引出线形状**：用一位数字表示。

**Lead shape:** Represented by a single digit.

| 代码<br>Code | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| 脚型<br>Lead Shape | 直脚<br>Straight | 标准弯<br>Standard Bend | 内弯<br>Inside Kink | 外弯<br>Outside Kink | 90 度折脚<br>90° Bent Leads |
| **图示**<br>Illustration |  |  |  |  |  |

**9.9 脚距**：用两位数表示。

**Lead pitch:**Represented by two digits.

| 代码<br>Code | 05 | 08 | 10 | 13 | 15 | 20 |
|---|---|---|---|---|---|---|
| 引线脚距（mm）<br>Lead Spacing (mm) | 5 | 7.5 | 10 | 12.5 | 15 | 20 |
| 代码<br>Code | 23 | 25 | 28 | 31 | 32 | |
| 引线脚距（mm）<br>Lead Spacing (mm) | 22.5 | 25 | 27.5 | 31 | 31.5 | |

**9.10 引线长度**：用一位数表示。

**Lead length:** Represented by two digits.

| 代码<br>Code | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 引线长度（mm）<br>Lead Length (mm) | 2.5 | 3.5 | 4.0 | 4.5 | 10 | 15 | 20 | 25 |

**9.11 外壳厚度：**用三位数表示。

**Case Thickness**: Represented by a three-digit code.

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 代码<br>Code | 025 | 035 | 040 | 045 | 049 | 050 | 055 | 060 | 070 | 075 | 080 | 085 |
| 厚度<br>Thickness（mm） | 2.5 | 3.5 | 4.0 | 4.5 | 4.9 | 5.0 | 5.5 | 6.0 | 7.0 | 7.5 | 8.0 | 8.5 |
| 代码<br>Code | 090 | 095 | 100 | 103 | 108 | 110 | 130 | 140 | 176 | 180 | | |
| 厚度<br>Thickness（mm） | 9.0 | 9.5 | 10.0 | 10.3 | 10.8 | 11.0 | 13.0 | 14.0 | 17.6 | 18.0 | | |

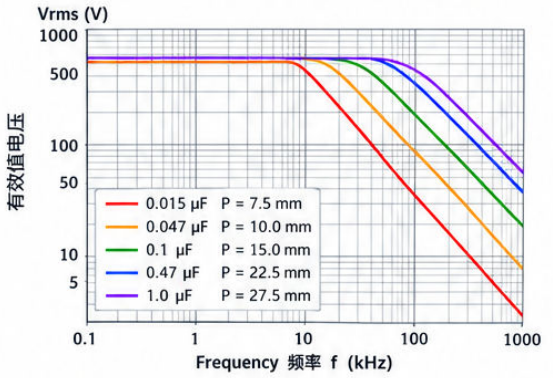
## 10、本体标印 Capacitors mark

| 正面（范例）<br>Front View (Example) | 印字内容说明<br>Marking Description | | |
|---|---|---|---|
|  | ① | **电容类型**<br>Capacitor type | MPB-22 |
| | ② | **电容量**<br>Capacitance | 183(18nF) |
| | ③ | **容量偏差**<br>Capacitance | J(5%) |
| | ④ | **额定电压**<br>Rated Voltage | 1000V |

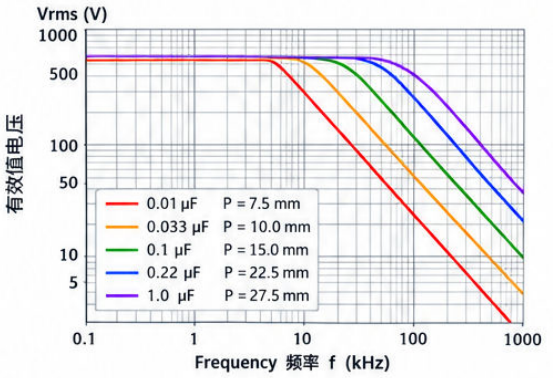
## 11、典型的电容器特性曲线 Typical graphs

### 谐振电容 (MPB-22) 允许的最大电压 (Vrms) 与频率特性曲线
### Maximum Permissible Voltage (Vrms) vs. Frequency

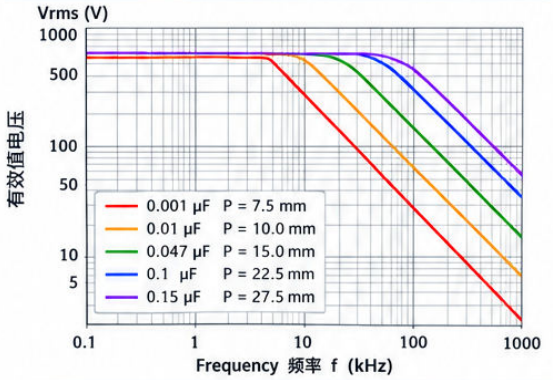
**250Vdc / 180Vac**



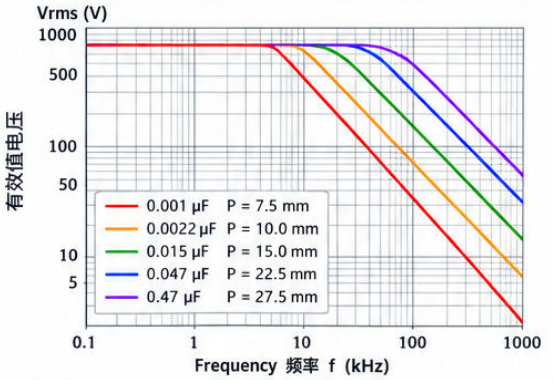

**400Vdc / 250Vac**




**630Vdc / 400Vac**

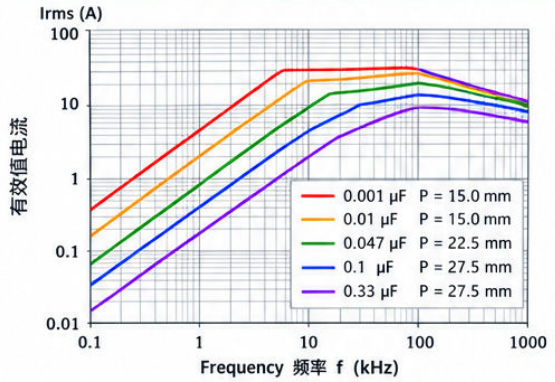



**1000Vdc / 600Vac**

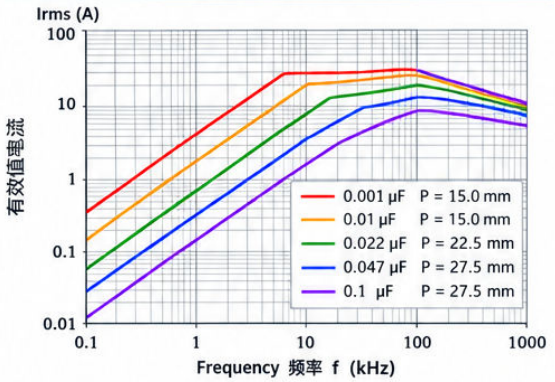



### 谐振电容 (MPB-22) 允许的最大电流 (Ir.m.s) 与频率特性曲线
### Maximum Permissible Current (Ir.m.s) vs. Frequency

**1600Vdc / 650Vac**




**2000Vdc / 700Vac**




**测试条件 Test Conditions:**

1. 输入波形：正弦波　Sinusoidal wave-form
2. 环境温度：≤85℃　Ambient temperature: ≤85℃
3. 内部温升：ΔT = 10℃　Internal temperature rise: ΔT = 10℃
4. 脚距 P (Pitch) 单位：mm　Unit: mm

**说明 Note:**

- 以上曲线为在规定条件下，不同电容量和脚距的谐振电容所允许的最大有效电压 (Vrms) 和最大有效电流 (Ir.m.s) 与频率的关系曲线，仅供设计参考。
  The above curves show the maximum permissible RMS voltage (Vrms) and RMS current (Ir.m.s) versus frequency for resonant capacitors with different capacitance values and lead spacing, under specified conditions, for design reference only.