

承 认 书
APPROVAL SHEET

客户名称 Customer Name	
客户料号 Customer PN	
产品名称 Product Name	金属化聚丙烯薄电容器 Metallized Polypropylene Film Capacitor
型号规格 Specification	MPP 0.22uF400V W12*H10*T6
厂商料号 Vendor PN	MPP224J400V1001
发行日期 Issue Date	2026/6/20

发行单位 ISSUED EPARTMENT	
	
制作 PREPARED BY	贺金欢 HE JIN HUAN
批准 APPROVED	李伟业 LI WEI YE

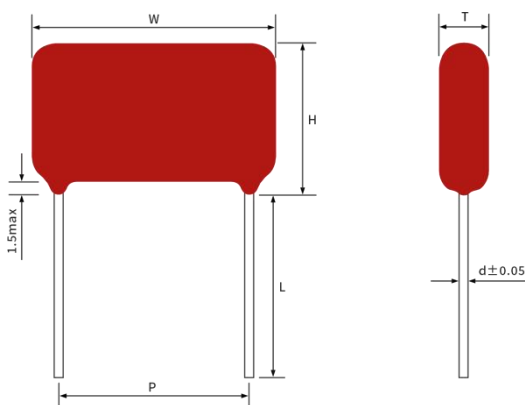
客户承认 APPROVED COLUMN	
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审核 CHECKED	
批准 APPROVED	

贵司确认后，敬请回签一份（After your confirmation, please sign back）

变更履历表

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1. 外形尺寸图 Dimensions

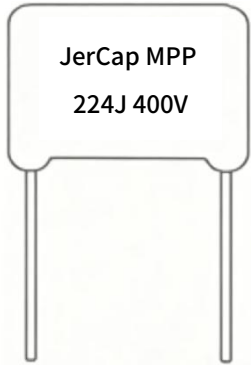
						
项目 Item	W(max)	H(max)	T(max)	P±1.0	L(min)	d±0.05
尺寸 Size(mm)	12	10	6	10	20	0.6

2. 电气特性 Electrical Characteristics

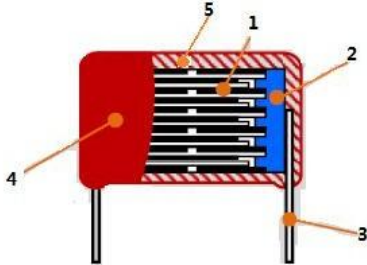
项目 Item	技术规格标准 Technical Specification Standards					
气候类别 Climate category	40/105/21					
工作温度范围	-40~+105°C(+85°C~+105°C: 额定电压降额系数 1.25% /°C)					
额定温度 Rated temperature	85°C					
容量 Capacitance	0.22μF					
额定电压 Rated voltage	400Vdc					
容量偏差 Capacitance tolerance	±5%(J)					
损耗角正切 Dissipation factor	≤0.1% (1kHz, 20°C)					
绝缘电阻 Insulation resistance	≥30000MΩ for C≤0.33uF (100VDC, 60 秒)					
	≥10000MΩ/uF for C>0.33uF (100VDC, 60 秒)					
耐电压 Withstand voltage	1.6×U _R (VDC), 5 秒					
最大脉冲爬升斜率(dv/dt) 若实际工作电压(U)比额定电压(U _R)低, 电容器可工作在更高的 dv/dt 场合, 这样 dv/dt 允许值应为右表值乘以 U _R /U。 If the working voltage (U) is lower than the rated voltage(U _R), the capacitor can be worked at a higher dv/dt. In this case, the maximum allowed dv/dt is obtain by multiplying the above value with U _R /U.	dv/dt(V/μs)					
	U _R (VDC)	P=7.5	P=10.0	P=15.0	P=22.5	P=27.5
	100/160	130	110	100	70	50
	250	240	220	200	120	100
	400	450	350	300	180	150
	630	550	420	400	250	180
	1000/1250	2300	1950	975	600	300
	1600	/	6000	4500	2400	/
	2000	/	/	8000	4500	/

说明: 额定电压定义: 在温度范围内, 电容器连续工作的可承受电压。但是, 工作温度在+85°C~+105°C之间时, 每上升 1°C额定工作电压应下降 1.25%

3.标识示意图 Marking

	JerCap	公司商标 Company trademark
	MPP	产品型号或型号代码 Product model or model code
	224J	额定容量及容量偏差 Rated capacity and capacity deviation
	400V	额定电压 Rated voltage

4.材料表 Material Table

			
No.	主要材料 Main materials	描述 Description	备注 Note
1	金属化聚丙烯膜 Metallized polypropylene film	MPPZAH	-/-
2	喷焊层 Spray-welded layer	锌锡合金丝 Zn-Sn Alloy Wire	-/-
3	引线 Lead wire	镀锡铜包钢线 Copper-clad Steel Wire	-/-
4	外包封材料 Outsourcing sealing materials	环氧树脂粉末 Epoxy resin powder	阻燃 UL94V-0 Flame retardant UL94V-0
5	内涂保护材料 Internal coating protective material	环氧树脂 Epoxy resin	-/-

注：以上材料均符合环保要求

Note:All of the Materials are in compliance with the requirements of ROHS AND REACH.

5.测试与试验项目 Test Item

No.	项目 Item		特性 Characteristics	试验方法 Test method
1	端子强度 Terminal strength	拉伸强度 Tensile strength	无可见机械损伤	线径 Wire diameter: 0.6&0.8mm 负重 Weight-bearing: 10N, 时间 time:10 秒
		弯曲强度 Flexural strength	No visible mechanical damage	线径 Wire diameter: 0.6&0.8mm 力度 Strength: 5N, 90°X2 次
2	焊锡附着性 Solder adhesion		导线上锡率 95% Tinning rate of the wire: 95%	焊剂温度 Flux temperature: 245±5°C 浸入时间 Immersion time: 2.5±0.5 秒
3	耐焊接热 Weld heat resistance	外观 Appearance	无可见损伤 No visible damage	焊锡温度: 260±5°C 浸入时间: 10±1 秒 恢复时间: 1~2 小时
		损耗角正切 DF	≤ 0.004 ($C \leq 1.0\mu F$, 10kHz) ≤ 0.004 ($C > 1.0\mu F$, 1kHz)	Solder temperature: 260±5°C Immersion time: 10±1 second Recovery time: 1 to 2 hours
		容量变化率 Capacitance Change Rate	$\Delta C/C \leq \pm 3\%$	
4	初始测量 Initial measurement	电容量 Capacitance (1kHz) 损耗角正切 DF($C \leq 1.0\mu F$, 10kHz); ($C > 1.0\mu F$, 1kHz)		-
	温度快速变化 Rapid temperature changes	无可见损伤 No visible damage		$\theta A = -40^{\circ}C$, $\theta B = +105^{\circ}C$, 5 次循环 持续时间: t=30min $\theta A = -40^{\circ}C$, $\theta B = +105^{\circ}C$, 5 cycles Duration: t=30min
	振动 Vibration	无可见损伤 No visible damage		振幅 0.75mm, 频率 10~500Hz 三个方向, 互相垂直, 每个方向 2h, 共 6h Amplitude 0.75 mm, frequency 10~500 Hz, three mutually perpendicular directions, 2 hours for each direction, totaling 6 hours
	碰撞 Collision	无可见损伤 No visible damage		4000 次, 加速度 390m/s ² , 脉冲持续时间: 6ms 4000 times, acceleration 390m/s ² , pulse duration: 6 ms
	最后测量 Final measurement	外观 Appearance	无可见损伤 No visible damage	-
		容量变化率 Capacitance Change Rate	$\Delta C/C \leq \pm 5\%$	
		损耗角正切 DF	≤ 0.004	
		绝缘电阻 Insulation resistance	$\Delta IR/IR \leq 50\%$	
5	初始测量 Initial measurement	电容量 Capacitance (1kHz) 损耗角正切 DF($C \leq 1.0\mu F$, 10kHz); ($C > 1.0\mu F$, 1kHz)		-
	气候顺序 Climatic sequence	干热 Dry heat	-	+105°C, 16 小时
		循环湿热 Circulating damp-heat	-	试验 Db, 第一次循环 Test Db, first cycle
		寒冷 Cold	-	-40°C, 2 小时

金属化聚丙烯膜电容器 Metallized Polypropylene Film Capacitor

No.	项目 Item	特性 Characteristics	试验方法 Test method	No.
5		低气压 Low pressure	无永久性击穿, 飞弧或外壳的有害变形 No permanent breakdown, arc-over or harmful deformation of the enclosure	8.5kPa, 1 小时 8.5kPa, 1 hour
		循环湿热 Circulating damp-heat	-	试验 Db, 其余循环 Test Db, loop the rest
	最后测量 Final measurement	外观 Appearance	无可见损伤 No visible damage	-
		容量变化率 Capacitance Change Rate	$\Delta C/C \leq \pm 5\%$	-
		损耗角正切 DF	≤ 0.005	-
6	稳态湿热 Steady-state humid heat	绝缘电阻 Insulation resistance	$\Delta IR/IR \leq 50\%$	-
		外观 Appearance	无可见损伤 No visible damage	相对湿度 90~95%RH 温度: $40 \pm 2^\circ\text{C}$ 无负荷, 持续时间: 21 天, 恢复时间 1~2 小时 Relative humidity 90~95%RH, temperature: $40 \pm 2^\circ\text{C}$; No load, duration: 21 days, recovery time: 1~2 hours
		容量变化率 Capacitance Change Rate	$\Delta C/C \leq \pm 5\%$	
		损耗角正切 DF	$\leq 0.002 (C \leq 1.0\mu\text{F}, 10\text{kHz})$ $\leq 0.004 (C > 1.0\mu\text{F}, 1\text{kHz})$	
7	耐久性 Endurance	绝缘电阻 Insulation resistance	$\Delta IR/IR \leq 50\%$	
		外观 Appearance	无可见损伤 No visible damage	T= 85°C , 1000 小时施加电压: $1.25U_R$ T= 85°C , applied voltage for 1000 hours: $1.25U_R$
		容量变化率 Capacitance Change Rate	$\Delta C/C \leq \pm 8\%$	
		损耗角正切 DF	≤ 0.004	
8	温度特性 Temperature characteristics	在 b, d, f 点进行电容量测量: 在下限类别温度 -40°C 时的特性: $0 \leq (C_b - C_d)/C_d \leq +3\%$ 在上限类别温度 105°C 时的特性: $-4.0\% \leq (C_f - C_d)/C_d \leq 0$ Measure the capacitance at points b, d, and f: Characteristics at the lower category temperature of -40°C : $0 \leq (C_b - C_d)/C_d \leq +3\%$ Characteristics at the upper category temperature of 105°C : $-4.0\% \leq (C_f - C_d)/C_d \leq 0$		静态法, 电容器依次保持在下述每个温度: The static method: the capacitor is sequentially maintained at each of the following temperatures a. $(20 \pm 2)^\circ\text{C}$, b. $(-40 \pm 3)^\circ\text{C}$, d. $(20 \pm 2)^\circ\text{C}$, f. $(105 \pm 2)^\circ\text{C}$, g. $(20 \pm 2)^\circ\text{C}$
9	充放电 Charge and discharge	容量变化率 Capacitance Change Rate	$\Delta C/C \leq \pm 5\%$	充放电次数: 10000 充放电时间: 0.5 秒
		损耗角正切 DF	$\leq 0.005 (10\text{kHz}, CR \leq 1.0\mu\text{F})$ $\leq 0.005 (1\text{kHz}, CR > 1.0\mu\text{F})$	充电电压: 额定电压 U_R , 充电电阻: $220/C_R (\Omega)$, 放电电阻: $10/C_R$ or 20Ω (取较大值者) C_R : 额定容量(μF)
		绝缘电阻 Insulation resistance	$\Delta IR/IR \leq 50\%$	Charge and discharge cycles: 10000 Charge and Discharge Time: 0.5 seconds Charging voltage: Rated voltage U_R , Charging resistance: $220/C_R (\Omega)$, Discharging resistance: $10/C_R$ or 20Ω (whichever is greater) C_R : Rated capacitance (μF)

6. 使用注意事项

1. 电路设计 Circuit Design

- ① 请仅在电容器的额定特性范围内使用，并先确认其使用环境及安装环境是否符合规范。

Please use capacitors only within the range of their rated characteristics, and confirm their operating and mounting environments first.

- ② 请根据实际作业条件，选择最适配的电容器使用。

When selecting a capacitor, please choose the most suitable one that matches your operating conditions.

- ③ 施加在电容器上的电压（包括浪涌电压和纹波电压的峰值，即直流电压+交流峰值），不得超过其额定电压。

The applied voltage to a capacitor, including the peak value of surge and ripple voltage (DC voltage + AC peak value), must not exceed the rated voltage.

- ④ 请勿施加超过电容器允许范围的电流；同时请检查电容器的环境温度及其自身温升，因为这些因素会限制允许电流的大小。

Do not apply a current exceeding its permissible level. In addition, please check the ambient temperature and the inherent temperature rise of the capacitor, as the permissible current may be restricted by these factors.

- ⑤ 请勿对电容器进行快速充放电，否则可能导致电容器特性退化或损坏。

Do not perform rapid charging and discharging of the capacitor, as this may lead to degradation of the capacitor's characteristics or even damage.

2. 安装 Mounting

- ① 安装过程中，请勿对电容器的引线施加过大的拉力或扭力。

During the mounting process, do not apply excessive tension or torsion to the lead wires of the capacitor.

- ② 请将电容器安装在不与任何发热元件、高压元件及其他部件接触的位置。

Please mount the capacitor in a position where it does not come into contact with any other heating components, high-voltage components or other parts.

- ③ 进行焊接作业时，请严格遵循规定的焊接条件。

Please strictly follow the specified conditions during the soldering process.

3. 储存和处理 Storing and Handling

- ① 储存环境需为室内，温度控制在-10~+30℃，相对湿度低于75%，且无突然温度变化、无阳光直射、无腐蚀性气体。

The storage environment shall be indoor, with a temperature of -10~+30℃ and a relative humidity below 75%, free from sudden temperature changes, direct sunlight and corrosive gases.

- ② 请勿对电容器施加过度震动、冲击（如跌落）或压力。

Do not subject the capacitor to excessive vibration, shock (such as dropping) or pressure.

- ③ 在正常储存条件下，若储存时间超过6个月，生产和使用前必须对电容器的所有特性进行检测。

Under normal storage conditions, if the storage time exceeds 6 months, all characteristics of the capacitor must be inspected before production and use.