

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 0.033uF450V W8.8*H7.6*T4.2
厂商料号 Vendor PN	MPP333J450V0701
发行日期 Issue Date	2026/6/20

发行单位 ISSUED EPARTMENT	
	
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批准 APPROVED	李伟业 LI WEI YE

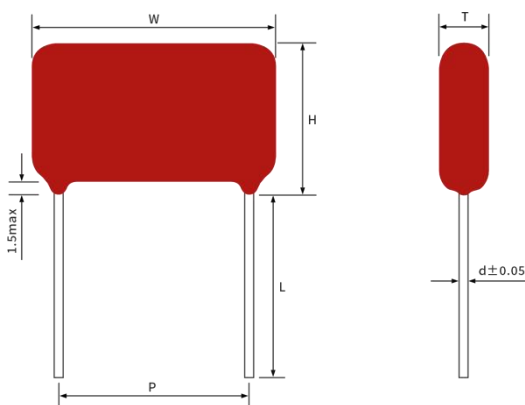
客户承认 APPROVED COLUMN	
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审核 CHECKED	
批准 APPROVED	

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变更履历表

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1. 外形尺寸图 Dimensions

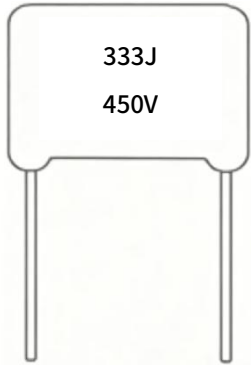
						
项目 Item	$W \pm 1.0$	$H \pm 1.0$	$T \pm 1.0$	$P \pm 1.0$	L(min)	$d \pm 0.05$
尺寸 Size(mm)	8.8	7.6	4.2	7.5	20	0.6

2. 电气特性 Electrical Characteristics

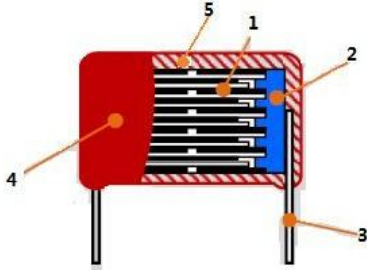
项目 Item	技术规格标准 Technical Specification Standards					
气候类别 Climate category	40/105/21					
工作温度范围	-40~+105°C(+85°C~+105°C: 额定电压降额系数 1.25% /°C)					
额定温度 Rated temperature	85°C					
容量 Capacitance	0.033μF					
额定电压 Rated voltage	450Vdc					
容量偏差 Capacitance tolerance	±5%(J)					
损耗角正切 Dissipation factor	≤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

	333J	额定容量及容量偏差 Rated capacity and capacity deviation
	450V	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

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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	$T=85^\circ\text{C}$, 1000 小时施加电压: $1.25U_R$ $T=85^\circ\text{C}$, 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.