

规格承认书

Specification For Approval

(Customer Name)

客户名称:

(Product Name)

产品名称:

Metallized polypropylene film interference resistant
capacitor

金属化聚丙烯膜抗干扰电容器

(Customer part number)

客户料号:

(KNSCHA number)

科尼盛料号:

MPX125K31E3KN15800

(Specifications)

型号规格:

X2 125K310VAC P=22.5mm

DATE

日期:

2026.9.7

Manufacture

制 造

APPROVAL PREPARED

核 准 制 作

刘军军

钟林炎

CUSTOMER APPROVED

客户承认栏

APPROVED

核 准

CHECKED

确 认

CHECKED

确 认

广东科尼盛电子科技有限公司

KNSCHA ELECTRONICS CO., LIMITED.

Buildings A2-A3, Huijin Zhantuo Science and Technology Park,

地址: 广东省东莞市东坑镇汇金展拓科技园 A2-A3 栋

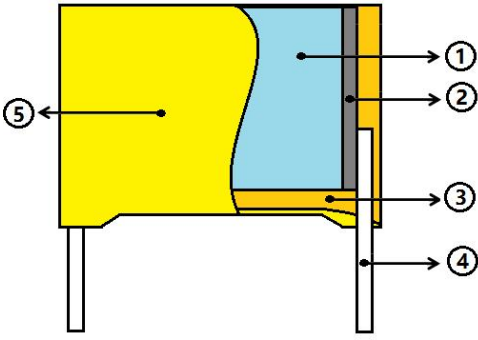
Dongkeng Town, Dongguan City, Guangdong Province

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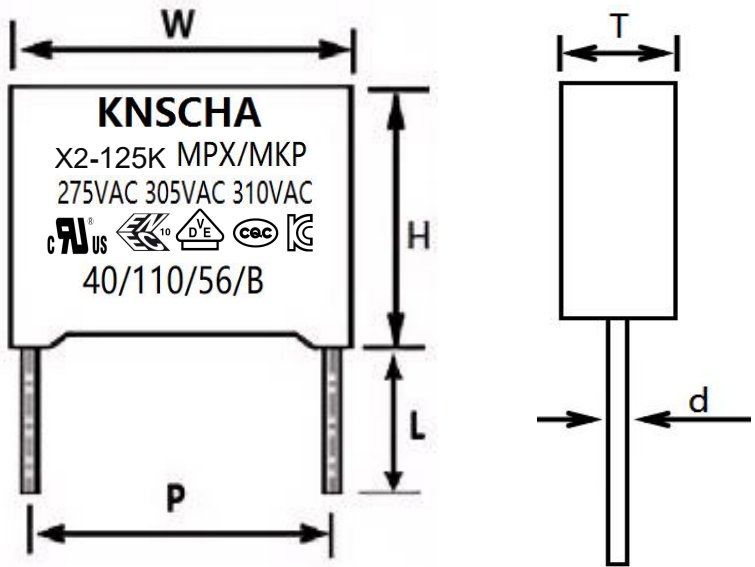
Email 邮箱: sales@knscha.com Website 官网: <http://www.knscha.com>



■ Product Structure Diagram 产品结构图

Construction 构造	Explanation 说明
	①Core 电容芯子 ② Plated layer 喷金层 ③Epoxy resin 环氧树脂 ④CP Wire CP线 ⑤PBT plastic housing PBT 塑料壳

■ Product dimensions, Marking(Logo,safety approvals, etc) 产品尺寸、标识（商标、安全认证等）

Dimensions 尺寸规格						Marking 印字标示	Explain 说明		
						KNSCHA	KNSCHA Logo 科尼盛公司商标		
						MPX/MKP X2	Type 产品型号		
						125	Capacitance 容量规格		
						K	Capacity tolerance 容量误差值		
						310VAC~	Rated voltage 额定电压		
							Safety approval 产品认证标志		
						40/110/56	Climatic Category 气候类别		
						B	Flame classes 阻燃等级		
No.	Specifications 规格	Capacitance (μF) 容量	W ±0.5	H ±0.5	T ±0.5	P ±0.5	d ±0.05	L ±2	Remarks 备注
1	125K310VAC	1.2	26.5	17	8.5	22.5	0.8	15	
	/								

Size: units mm

尺寸：单位 mm

■ **Characteristic 特点:**

- Can withstand overvoltage shock
能承受过压冲击
- Excellent temperature characteristics
优良的温度特性
- Good self-healing performance
良好的自愈性能
- Excellent moisture resistance
优异的防潮性能
- Excellent flame retardant properties
优异的阻燃性能

■ **Main application 主要用途:**

- It is widely used in power cross-line and other anti-interference occasions
广泛应用于电源跨线路等抗干扰场合

■ **Safety certificates 安全认证:**

	UL/CUL United States/Canada (美国/加拿大)	UL 60384-14 CSA E60384-14:09 证书号: E477850
	ENEC-VDE European-Germany (欧洲-德国)	DIN EN IEC 60384-14 (VDE 0565-1-1):2024-10; EN IEC 60384-14:2023 IEC 60384-14:2023 证书号: 40045532
	CQC (China) (中国)	GB/T 6346.14-2023 证书号: CQC25001489210
	KC Republic of Korea (韩国)	KC60384-1(2015-09), KC60384-14(2015-09) 证书号: SU03110-18001/2/3/4/5

■ **Technical requirement 技术要求:**

Capacitor Sub-Class 电容器类别	X2	
Climate Categories 气候类别	40/110/56	
Flame Retardant Rating 阻燃等级	B	
Operating Temperature Range 工作温度范围	-40°C ~ +110°C	
Rated Voltage 额定电压	275Vac、305Vac、310Vac	
Capacitance Range 电容量范围	0.001μF~4.7μF	
Capacitance Tolerance 电容量偏差	±10%(K)	
Withstand voltage 耐电压	1000VDC/ (30S)	
Tangent of loss angle(DF) 损耗角正切	≤ 0.1% (1KHz ,20°C)	
Insulation resistance 绝缘电阻	≥15000MΩ; CR ≤ 0.33μF ≥ 5000S; CR > 0.33μF	20°C,100V, 60S

■ Characteristic test 特性测试:

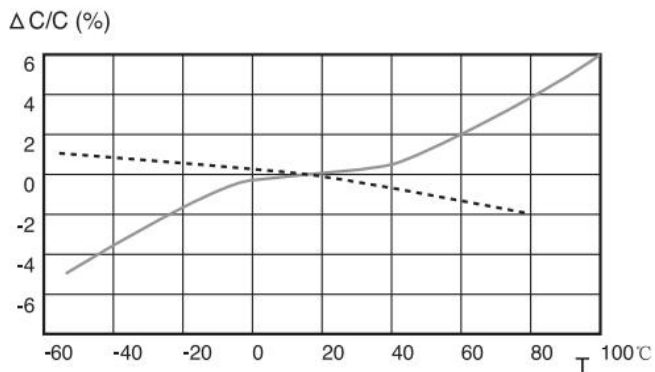
No.	Item 项目	Performance requirements 性能要求	Conditions of test IEC 60384-1 试验方法 IEC 60384-1
1	Initial measurement 初始测量	Capacitance 电容量 Dissipation Factor 损耗角正切: 1KHz	
	Robustness of terminations 引出端强度	No visible damage Legible marking 外观无可见损伤	Tension test Ual 端子拉力试验 Pull 拉伸: $0.5 < \phi d \leq 0.8\text{mm}; 10\text{N}$ bend test Ub 弯曲试验 Bend twice in each direction 每个方向弯折两次 Twist: Two consecutive 180° twists 扭转: 连续两次180°扭转
	Resistance to soldering heat 耐焊接热	No visible damage, The marking shall be legible 外观无可见损伤, 标志清晰	Weld groove method Tb 焊槽法 method 1A 方法1A Temperature 温度: $260 \pm 5^\circ\text{C}$ Test times 测试时长: $5 \pm 1\text{S}$
	Final measurement 最后测量	Capacitance: $\Delta C/C \leq \pm 5\%$ of initial measureme 电容量: $\Delta C/C \leq \text{初始测量值} \pm 5\%$ Loss tangent: DF increase ≤ 0.008 (1KHz) 损耗角正切: DF增加 ≤ 0.008 (1KHz)	
2	Initial measurement 初始测量	Capacitance 电容量 Dissipation Factor 损耗角正切: 1KHz	
	Rapid change of temperature 温度快速变化	No visible damage to the visually examined 外观无可见损伤	$0_A = -40^\circ\text{C}$, $0 = +110^\circ\text{C}$ Number of test cycles 循环次数: 5 Duration: $t = 30\text{ min}$ 持续时间: $t = 30\text{ min}$
	Vibration 振动	No visible damage to the visually examined 外观无可见损伤	Amplitude: 0.75mm or acceleration: 98m/s^2 (select the less severe condition). Frequency: $10 \sim 500\text{Hz}$, three orthogonal directions, 2 hours per direction, total duration: 6 hours. 振幅 0.75mm 或加速度 98m/s^2 (取严酷度较小者) 频率 $10 \sim 500\text{Hz}$ 三个方向, 每个方向2h, 共6h
	Bump 碰撞	No visible damage to the visually examined 外观无可见损伤	4000cycles, acceleration: 390m/s^2 , pulse duration: 6 ms 4000次加速度 390m/s^2 , 脉冲持续时间: 6ms

No.	Item 项目	Performance requirements 性能要求	Conditions of test IEC 60384-1 试验方法 IEC 60384-1
2	Final measurement 最后测量	Capacitance 电容量: $\Delta C/C \leq \pm 5\%$ of the initial measurement value. $\Delta C/C \leq$ 初始测量值的 $\pm 5\%$ Loss tangent (DF) : increment ≤ 0.008 损耗角正切DF增加 ≤ 0.008 Insulation resistance IR $\geq 50\%$ of the applicable limits. 绝缘电阻IR $\geq$ 适用限值的50%	
3	Initial measurement 初始测量	Capacitance 电容量 Dissipation Factor 损耗角正切: 1KHz	
	Dry heat 干热	Refer to the last measurement of No.3 参考 No.3 最后测量	Temperature 温度: 110°C Test time 测试时间: 16 h See IEC 60384-1:2021,8.2.3 with the following details. 详见IEC 60384-1: 2021标准8.2.3条款, 具体要求如下。
	Damp heat, cyclic 循环湿热	Refer to the last measurement of No.3 参考 No.3 最后测量	Test Db, Severity b, 1st cycle Test Db 试验Db, 严酷度b, 第一次循环 See IEC 60384-1:2021,8.2.4 参见IEC 60384-1: 2021标准8.2.4条款
	Cold 寒冷	Refer to the last measurement of No.3 参考No.3最后测量	Temperature 温度: - 40°C Test time 测试时间: 2h See IEC 60384-1:2021,8.2.5 with the following details. 详见IEC 60384-1: 2021标准8.2.5条款, 具体细则如下
	Low air pressure 低气压	Apply rated voltage UR during the last 5 minutes of the test. No permanent breakdown, flashover or harmful deformation of the enclosure shall occur. 在试验底最后 5 分钟, 施加 UR 无永久性击穿, 飞弧或外壳底有害变形	15~35°C, 8.5Kpa, 1h 温度15~35摄氏度, 气压8.5千帕, 持续1小时
	Damp heat, cyclic 循环湿热	After the test is completed, apply UR for 1 minute 试验结束后, 施加额定电压持续1分钟	Test Db, Severity b, Remaining cycles 试验 Db, 严酷度 b, 其余循环

No.	Item 项目	Performance requirements 性能要求	Conditions of test IEC 60384-1 试验方法 IEC 60384-1
3	Final measurement 最后测量	No visible damage.The marking shall be legible 外观无可见损伤，标志清晰 Capacitance 电容量： $\Delta C/C \leq \pm 5\%$ of the initial measurement value. $\Delta C/C \leq$初始测量值的$\pm 5\%$。 Loss tangent (DF):increment ≤ 0.008 损耗角正切：DF增加≤ 0.008 Withstand voltage 耐电压：1000VDC,30S No breakdown or flashover within 60s. 60s 无击穿或飞弧 Insulation resistance IR $\geq 50\%$ of the applicable limits. 绝缘电阻IR $\geq$适用限值的50%	
4	Damp heat, steady state (DHSS) 稳压湿热	No visible damage.The marking shall be legible 外观无可见损伤，标志清晰 Capacitance 电容量： $\Delta C/C \leq \pm 5\%$ of the initial measurement value. $\Delta C/C \leq$初始测量值的$\pm 5\%$。 Loss tangent (DF):increment ≤ 0.008 损耗角正切：DF增加≤ 0.008 Withstand voltage 耐电压：1000VDC,30S No breakdown or flashover within 60s. 60s 无击穿或飞弧 Insulation resistance IR $\geq 50\%$ of the applicable limits. 绝缘电阻 IR $\geq$适用限值的 50%	When preconditioning is performed, initial measurements shall be carried out after Preconditioning. 当进行预处理时，初始测量应在预 处理完成后进行。 Tested voltage: without voltage 试验电压：无电压施加 Temperature 温度：40$\pm 2^{\circ}\text{C}$ Humidity 湿度：93$\pm 2\%$ RH Duration: 56 days, in line with the climatic category of the capacitor Recovery shall be for 1 h to 2 h unde standard atmospheric conditions for testing. 试验时长：56天，符合电容器气候 类别要求在标准大气条件下，恢复 时间应为1至2小时。

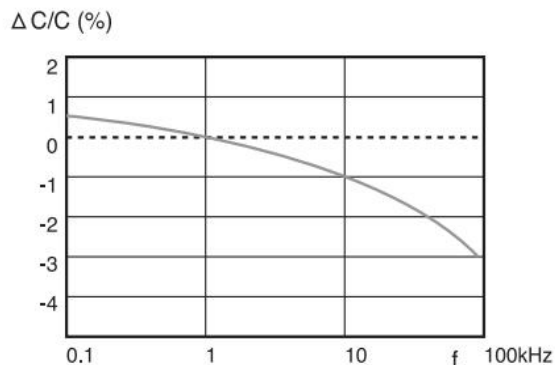
No.	Item 项目	Performance requirements 性能要求	Conditions of test IEC 60384-1 试验方法 IEC 60384-1																																		
5	Endurance 耐久性	No visible damage.The marking shall be legible 外观无可见损伤，标志清晰 Capacitance 电容量： △C/C≤±5% of the initial measurement value. △C/C≤初始测量值的±5%。 Loss tangent 损耗角正切 (DF):increment 增加≤ 0.008 Withstand voltage 耐电压：1000VDC,30S No breakdown or flashover within 60s.60s 无击穿或飞弧 Insulation resistance IR≥50% of the applicable limits. 绝缘电阻IR ≥适用限值的50%	Upper category temperature:110℃ 上限类别温度：110℃ Test times 试验时间：1000h Applied voltage:1.25 times rated voltage (UR). Increase the voltage to 400 V every 1 hour, with a duration of 0.1s. 施加电压：1.25UR额定电压每隔1h将电压升高到800V，持续时间0.1s																																		
6	Charge and Discharge 充电与放电	Capacitance 电容量： △C/C≤±10% of the initial measurement value. △C/C≤初始测量值的±10%。 Loss tangent (10KHz):DF increment ≤ 0.008 损耗角正切 (10KHz)：DF增加≤ 0.008 Insulation resistance IR≥50% of the applicable limits 绝缘电阻IR： ≥额定值的50%	Cycles 次数：10000 harging duration 充电持续时间：0.5s Discharging duration 放电持续时间：0.5s Charging voltage: rated voltage 充电电压为额定电压 Charging resistance 充电电阻：220/CR (Ω) or 20 Ω (select the larger value) （取较大者） CR: nominal capacitance (μF) 为标称电容量（μF）																																		
7	Passive flammability 阻燃性试验	<table><tr><td colspan="6">After removal of the flame, the continued burning time of each capacitor shall not exceed 10s. In addition, burning drips from the capacitor shall not ignite the cotton paper placed underneath. 离开火焰后，任一电容器继续燃烧的时间不超 10s，且电容器燃烧的滴落物不应引燃在其下铺设的棉纸</td></tr><tr><td rowspan="2">Category of flammability 易燃性类别</td><td colspan="4">Severities Flame exposure time, in seconds, for capacitor volume ranges 电容器不同体积范围对应的火焰暴露时（秒）</td><td rowspan="2">Maximum burning times 最大燃烧时间</td></tr><tr><td>Volume ≤250mm³</td><td><Volume ≤500mm³</td><td><Volume ≤1750mm³</td><td>Volume> 1750mm³</td></tr><tr><td>A</td><td>15</td><td>30</td><td>60</td><td>120</td><td>3</td></tr><tr><td>B</td><td>10</td><td>20</td><td>30</td><td>60</td><td>10</td></tr><tr><td>C</td><td>5</td><td>10</td><td>20</td><td>30</td><td>30</td></tr></table>	After removal of the flame, the continued burning time of each capacitor shall not exceed 10s. In addition, burning drips from the capacitor shall not ignite the cotton paper placed underneath. 离开火焰后，任一电容器继续燃烧的时间不超 10s，且电容器燃烧的滴落物不应引燃在其下铺设的棉纸						Category of flammability 易燃性类别	Severities Flame exposure time, in seconds, for capacitor volume ranges 电容器不同体积范围对应的火焰暴露时（秒）				Maximum burning times 最大燃烧时间	Volume ≤250mm³	<Volume ≤500mm³	<Volume ≤1750mm³	Volume> 1750mm³	A	15	30	60	120	3	B	10	20	30	60	10	C	5	10	20	30	30	Of each case size, capacitance shall be tested, resulting in six specimens per case size. 每种外壳规格均测试电容值，每种规格取样六件样品。
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Capacitor characteristic diagram 电容器特性图:



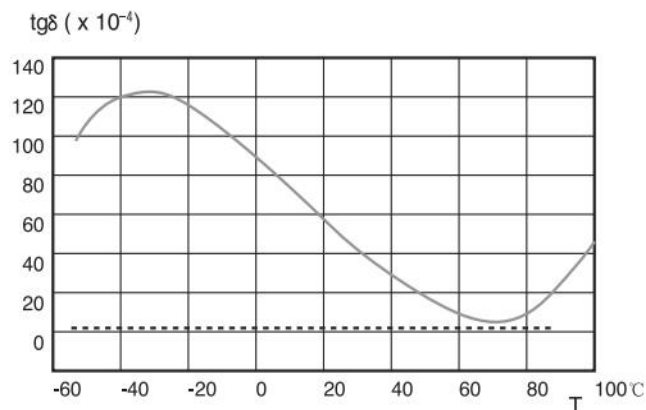
Capacitance vs. temperature at 1kHz

1kHz 频率下电容值随温度变化特性



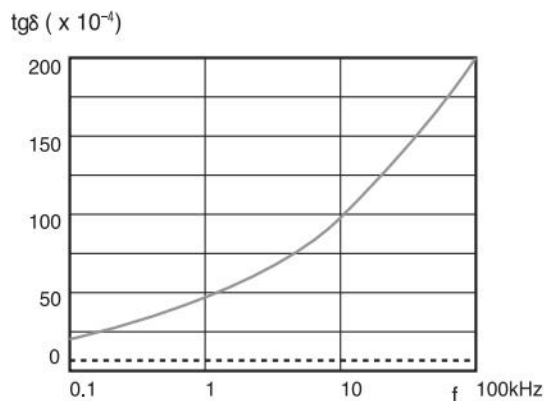
Capacitance vs. frequency (Room temperature)

电容值随频率变化曲线（室温环境）



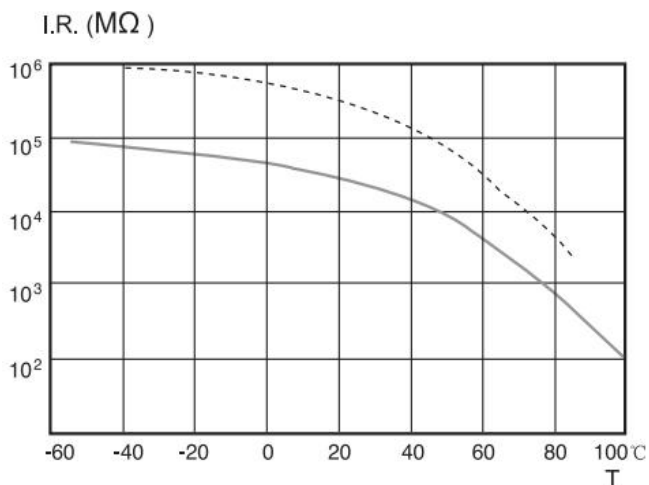
Dissipation factor vs. temperature at 1kHz

1kHz 下损耗因数随温度变化特性



Dissipation factor vs. frequency (Room temperature)

室温条件下损耗因数随频率变化特性



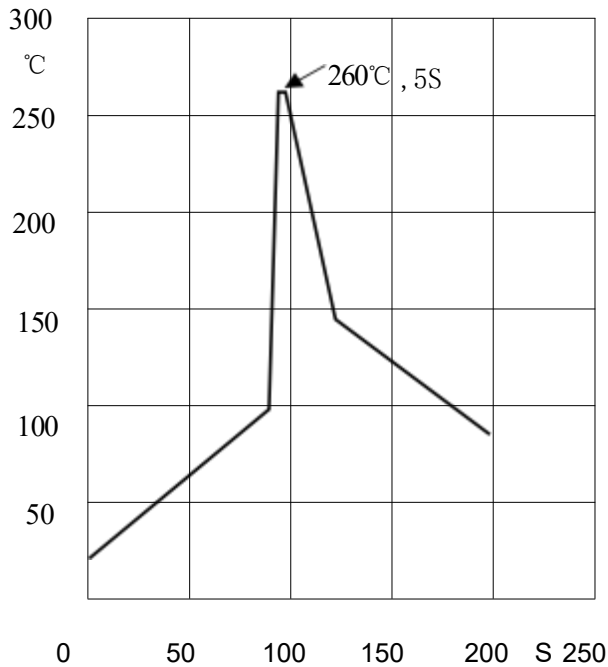
I.R. vs. temperature

绝缘电阻随温度变化特性

聚丙烯薄膜 (Polypropylene Film)

—————
聚酯薄膜 (Polyester Film)

1. Welding conditions 焊接条件:



	Temperature 温度	Time 时间	Remarks 备注
Preheat 预热	110°C	60S	
	100°C	60S	OPP≤7.5
Weld 焊接	270°C	5S	
	260°C	5S	OPP≤7.5

The temperature of the metallized polypropylene film capacitor does not exceed 120°C for 60 seconds.

金属化聚丙烯膜电容器产品本体温度不超过 120°C/60S。

The temperature of the metallized polyester film capacitor body should not exceed 140°C for 60 seconds.

金属化聚酯膜电容器产品本体温度不超过 140°C/60S。

2. Soldering method 烙铁焊接方法:

Soldering iron tip temperature (max) 烙铁尖温度(max)	350°C
Soldering iron times 焊接时间	2-3S

Note: If a second weld is required, wait until the capacitor cools to room temperature.

注意: 如果需要第二次焊接, 必须等到电容器恢复到常温

3. Notes 注意:

(1) Scope Of Use 使用范围:

- Do not exceed the specified maximum temperature limit during use.

使用时不要超过上限类别温度

- Avoid overusing this product.

避免过载使用

(2)Product Storage Conditions 产品存储条件:

- Temperature range:-40°C to 35°C; annual average humidity shall not exceed 70%.

温度范围: -40°C到 35°C; 湿度年平均值≤70%。

- Storage period:Calculated from the date marked on the product package or the product itself.

储存时间: 从产品包装或产品本体上的日期算起

- Bulk products (plastic bag packaging):Maximum storage life of 2 years.Products in Taping packaging:Maximum storage life of 1 year.

散装产品（塑料袋包装）：不超过 2 年；编带产品：不超过 1 年

(3)If used the capacitor that overdue the storage time,it should be test the characteristics of the capacitor or contact with our technical engineer.

若使用超储存期电容器，需检测各项性能参数，或联系我方技术工程师。

(4) If the product will be used in high temperature and high humidity environments, please contact our engineers, who will provide THB-designed products for you.

如果产品用于高温高湿环境，请联系我们的工程师，我们将提供 THB 设计的产品。