

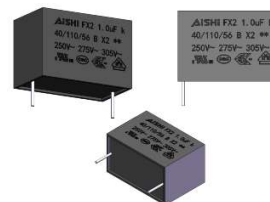
Metallized Polypropylene Film EMI Suppression Capacitors

FX2 Series - Class X2 305Vac / 350Vac



Overview

The FX2 series is constructed of metallized polypropylene film encapsulated with self-extinguishing resin in a box of material meeting the requirement of UL94V-0.



概述

FX2 采用金属化聚丙烯膜结构，使用自熄树脂封装于符合 UL94V-0 要求的塑料壳内。

Applications

Interference suppression, across-the-line capacitor, EMI filter and spark-killer in class X2 applications. Suitable for use in situations where failure of the capacitor would not lead to danger of electric shock.

应用

用于干扰抑制，跨接电容，电磁干扰滤波器和火花抑制器等应用。适用于电容器失效后不会导致触电危险的场合。

Features

- High stability of capacitance
- High temperature (110°C)
- Self-healing property
- Over voltage stress withstanding
- Flame-retardant plastic case and resin

特点

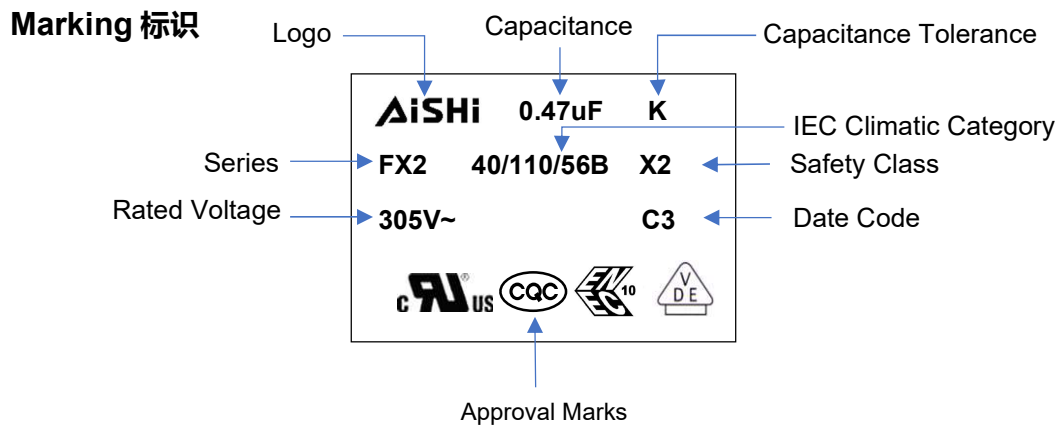
- 高稳定性
- 耐高温 (110°C)
- 良好的自愈能力
- 过电压保护
- 阻燃塑料外壳及树脂



Approvals 认证

Marking	Standard	File Number
	UL 60384-14 CAN/CSA-E60384-14	E500538 (305Vac~760Vac)
	IEC 60384-14:2013 IEC 60384-14:2013/AMD1:2016	40051583 (305Vac) 40052137 (350Vac~760Vac)
	IEC 60384-14 GB/T6346.14-2015	CQC20001245437 (305Vac) CQC20001281016 (350Vac~480Vac) CQC20001281018 (530Vac~760Vac)

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Manufacturing Date Code 生产周期码

Year	Code	Month	Code
2018	A	Jan	1
2019	B	Feb	2
2020	C	Mar	3
2021	D	Apr	4
2022	E	May	5
2023	F	Jun	6

Year	Code	Month	Code
2024	G	Jul	7
2025	H	Aug	8
2026	J	Sep	9
2027	K	Oct	A
2028	L	Nov	N
2029	M	Dec	D

Part Number System 料号编码原则

F	X2	30	K	474	E43	2EL	5	RFAS
Capacitor Type	Series	Voltage (VAC)	Tolerance	Capacitance (pF)	Size Code	Terminal Code	Lead Length Code	Design code
F = Film	Class X2, Metallized PP Film	30=305Vac 35=350Vac	K = ±10% M = ±20%	First two digits = significant figures. Third digit = Number of zeros.	Refer to Size Code Table	Refer to Terminal Code Table	Refer to Lead Length Table	R:RoHS F:customer A: 850°C GW S:AISHI

Terminal Code

引出端代码

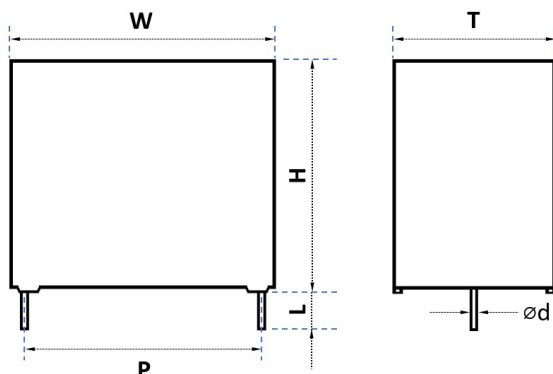
Digit One (Lead/Terminal Type)		Digit Two (Lead Space)		Digit Three (Lead Ipsilateral)	
2 leads for long	L	10.0mm	C	5.1mm	A
2 leads for straight cut	2	12.5mm	D	7.5mm	C
2 leads for forming cut	E	15.0mm	E	10.2mm	B
4 leads for straight cut	4	22.5mm	F	12.7mm	G
Taping	T	27.5mm	G	20.3mm	D
Taping Straight	V	37.5mm	K	N/A	L
		52.5mm	M		
		N/A	N		

Lead Length Code

引出端长度代码

Lead Length	
20mm min	L
35mm min	B
3.2mm	1
3.5mm	2
3.0mm	3
4.0mm	4
5.0mm	5
7.0mm	7
4.5mm	D
Taping	T

Dimension (mm) 外形图



2 pins

Size Code Table (mm) 尺寸表

Size	Dimension						Pitch		Lead Wire	
Code	W	Tolerance	H	Tolerance	T	Tolerance	P	Tolerance	Ød	Tolerance
C13	13	0.5	11	0.5	5	0.5	10	0.5	0.6	0.05
C16	13	0.5	12	0.5	6	0.5	10	0.5	0.6	0.05
C26	13	0.5	14	0.5	8	0.5	10	0.5	0.6	0.05
C27	13	0.5	16	0.5	8	0.5	10	0.5	0.6	0.05
C30	13	0.5	16	0.5	9	0.5	10	0.5	0.6	0.05
E14	18	0.5	11	0.5	5	0.5	15	0.5	0.6	0.05
E17	18	0.5	12	0.5	6	0.5	15	0.5	0.8	0.05
E18	18	0.5	13.5	0.5	6	0.5	15	0.5	0.8	0.05
E29	18	0.5	13.5	0.5	7.5	0.5	15	0.5	0.8	0.05
E34	18	0.5	14.5	0.5	8.5	0.5	15	0.5	0.8	0.05
E43	18	0.5	16	0.5	10	0.5	15	0.5	0.8	0.05
E47	18	0.5	19	0.5	11	0.5	15	0.5	0.8	0.05
F17	26	0.5	16.5	0.5	7	0.5	22.5	0.5	0.8	0.05
F20	26	0.5	17	0.5	8.5	0.5	22.5	0.5	0.8	0.05
F24	26	0.5	19	0.5	10	0.5	22.5	0.5	0.8	0.05
F26	26	0.5	20	0.5	11	0.5	22.5	0.5	0.8	0.05
F27	26	0.5	22	0.5	12	0.5	22.5	0.5	0.8	0.05
F29	26	0.5	23	0.5	13	0.5	22.5	0.5	0.8	0.05
F34	26	0.5	29.5	0.5	14.5	0.5	22.5	0.5	0.8	0.05
F36	26	0.5	25	0.5	15	0.5	22.5	0.5	0.8	0.05
G15	32	0.8	18	0.8	9	0.8	27.5	0.5	0.8	0.05
G18	32	0.8	20	0.8	11	0.8	27.5	0.5	0.8	0.05
G22	32	0.8	24.5	0.8	13	0.8	27.5	0.5	0.8	0.05
G25	32	0.8	24	0.8	14	0.8	27.5	0.5	0.8	0.05
G26	32	0.8	28	0.8	14	0.8	27.5	0.5	0.8	0.05
G33	32	0.8	28	0.8	18	0.8	27.5	0.5	0.8	0.05
G34	32	0.8	33	0.8	18	0.8	27.5	0.5	0.8	0.05
G40	32	0.8	37	0.8	22	0.8	27.5	0.5	0.8	0.05
K21	42	0.8	32	0.8	19	0.8	37.5	0.5	1.0	0.05
K27	42	0.8	37	0.8	22	0.8	37.5	0.5	1.0	0.05
K32	42	0.8	44	0.8	24	0.8	37.5	0.5	1.0	0.05
K42	42	0.8	45	0.8	30	0.8	37.5	0.5	1.0	0.05
M16	57.5	1.0	45	1.0	30	1.0	52.5	0.5	1.2	0.05

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Rating and Part Number

Vac	Vdc	Cap Value μF	Dimensions				Peak Current A	Surge Current A	dv/dt V/us	Lead Wire mm	Part Number
			w mm	H mm	T mm	P mm					
305	630	0.01	13	11	5	10	5	15	500	0.6	FX230K103C132CLDRFAS
305	630	0.022	13	11	5	10	11	33	500	0.6	FX230K223C132CLDRFAS
305	630	0.033	13	11	5	10	16.5	49.5	500	0.6	FX230K333C132CLDRFAS
305	630	0.047	13	11	5	10	23.5	70.5	500	0.6	FX230K473C132CLDRFAS
305	630	0.068	13	11	5	10	34	102	500	0.6	FX230K683C132CLDRFAS
305	630	0.082	13	12	6	10	41	123	500	0.6	FX230K823C162CLDRFAS
305	630	0.1	13	12	6	10	50	150	500	0.6	FX230K104C162CLDRFAS
305	630	0.15	13	14	8	10	75	225	500	0.6	FX230K154C262CLDRFAS
305	630	0.22	13	14	8	10	110	330	500	0.6	FX230K224C262CLDRFAS
305	630	0.27	13	16	8	10	135	405	500	0.6	FX230K274C272CLDRFAS
305	630	0.33	13	16	9	10	165	495	500	0.6	FX230K334C302CLDRFAS
305	630	0.047	18	11	5	15	18.8	56.4	400	0.6	FX230K473E142ELDRFAS
305	630	0.068	18	11	5	15	27.2	81.6	400	0.6	FX230K683E142ELDRFAS
305	630	0.082	18	11	5	15	32.8	98.4	400	0.6	FX230K823E142ELDRFAS
305	630	0.1	18	11	5	15	40	120	400	0.6	FX230K104E142ELDRFAS
305	630	0.15	18	12	6	15	60	180	400	0.6	FX230K154E172ELDRFAS
305	630	0.22	18	13	7	15	88	264	400	0.6	FX230K224E212ELDRFAS
305	630	0.27	18	14.5	8.5	15	108	324	400	0.6	FX230K274E342ELDRFAS
305	630	0.33	18	16.5	7.5	15	132	396	400	0.6	FX230K334E712ELDRFAS
305	630	0.47	18	16	10	15	188	564	400	0.6	FX230K474E432ELDRFAS
305	630	0.56	18	19	11	15	224	672	400	0.6	FX230K564E472ELDRFAS
305	630	0.68	18	19	11	15	272	816	400	0.6	FX230K684E472ELDRFAS
305	630	0.33	26	16.5	7	22.5	66	198	200	0.6	FX230K334F172FLDRFAS
305	630	0.47	26	16.5	7	22.5	94	282	200	0.6	FX230K474F172FLDRFAS
305	630	0.56	26	19	10	22.5	112	336	200	0.6	FX230K564F242FLDRFAS
305	630	0.68	26	19	10	22.5	136	408	200	0.6	FX230K684F242FLDRFAS
305	630	1	26	19	10	22.5	200	600	200	0.6	FX230K105F242FLDRFAS
305	630	1.2	26	22	12	22.5	240	720	200	0.8	FX230K125F272FLDRFAS
305	630	1.5	26	23	13	22.5	300	900	200	0.8	FX230K155F292FLDRFAS
305	630	1.8	26	29.5	14.5	22.5	360	1080	200	0.8	FX230K185F342FLDRFAS
305	630	2	26	29.5	14.5	22.5	400	1200	200	0.8	FX230K205F342FLDRFAS
305	630	2.2	26	29.5	14.5	22.5	440	1320	200	0.8	FX230K225F342FLDRFAS
305	630	0.68	32	18	9	27.5	102	306	150	0.8	FX230K684G152GLDRFAS
305	630	0.82	32	18	9	27.5	123	369	150	0.8	FX230K824G152GLDRFAS
305	630	1	32	18	9	27.5	150	450	150	0.8	FX230K105G152GLDRFAS
305	630	1	32	20	11	27.5	150	450	150	0.8	FX230K105G182GLDRFAS
305	630	1.2	32	20	11	27.5	180	540	150	0.8	FX230K125G182GLDRFAS
305	630	1.5	32	24.5	13	27.5	225	675	150	0.8	FX230K155G222GLDRFAS
305	630	1.8	32	24.5	13	27.5	270	810	150	0.8	FX230K185G222GLDRFAS
305	630	2.2	32	24	14	27.5	330	990	150	0.8	FX230K225G252GLDRFAS
305	630	2.7	32	28	18	27.5	405	1215	150	0.8	FX230K275G332GLDRFAS
305	630	3.3	30.5	27.5	18	27.5	495	1485	150	0.8	FX230K335G672GLDRFAS
305	630	3.3	32	28	18	27.5	495	1485	150	0.8	FX230K335G332GLDRFAS
305	630	3.3	32	33	18	27.5	495	1485	150	0.8	FX230K335G342GLDRFAS
305	630	3.9	32	33	18	27.5	585	1755	150	0.8	FX230K395G342GLDRFAS
305	630	4.7	32	33	18	27.5	705	2115	150	0.8	FX230M475G342GLDRFAS
305	630	4.7	32	37	22	27.5	705	2115	150	0.8	FX230K475G402GLDRFAS
305	630	5.6	32	37	22	27.5	840	2520	150	0.8	FX230M565G402GLDRFAS
305	630	4.7	42	32	19	37.5	470	1410	100	1.0	FX230K475K212KLDRFAS
305	630	6.8	42	37	22	37.5	680	2040	100	1.0	FX230K685K272KLDRFAS
305	630	6.8	42	40	20	37.5	680	2040	100	1.0	FX230K685K242KLDRFAS
305	630	10	42	44	24	37.5	1000	3000	100	1.0	FX230K106K322KLDRFAS
305	630	12	42	45	30	37.5	1200	3600	100	1.0	FX230K126K422KLDRFAS
305	630	15	42	45	30	37.5	1500	4500	100	1.0	FX230K156K422KLDRFAS
305	630	18	57.5	45	30	52.5	1440	4500	80	1.2	FX230K186M162MLDRFAS
305	630	20	57.5	45	30	52.5	1600	4800	80	1.2	FX230K206M162MLDRFAS

General Technical Data 性能指标

Applications 应用	Interference suppression \ Across-the-line (Class X2)
Dielectric 介质	Metallized Polypropylene Film
Reference Standard 引用标准	IEC 60384-14; UL 60384-14; GB/T 6346.14-2015
Climatic Category 气候类别	40/110/56 IEC60068-1
Passive Flammability Class 防燃等级	B
Operating Temperature Range 工作温度范围	-40°C ~ +110°C
Protection 外封装	Solvent resistant plastic case UL94 V-0 Thermosetting resin sealing UL 94 V-0 compliant
Installation 安装方式	Any position
Packaging 包装	Packed in cardboard boxes with protection for the terminals
Storage Conditions 储存条件	Storage time: ≤24months from the date marked on the label package Average relative humidity per year ≤70% RH≤85% for 30 days randomly distributed throughout the year Dew is absent Temperature: -40°C ~ +85°C
RoHS Compliance 环保要求	Compliant with the restricted substance requirements of Directive 2011/65/EU
Flame Retardant Grade 阻燃等级	Flame retardant performance accords with horizontal combustion grade HB and vertical combustion grade V-0.

Construction 结构设计

Metallized Film 薄膜材料	OPP & Al/Zn
Metal Sprayed 涂覆	Sn/Zn Alloy
Connection Electrode 连接电极	Copper clad steel wire or Tinned copper wires
Case 外壳	Plastic Case (UL94V-0)
Filling 填充	Epoxy Resin (UL94V-0)
Film Construction 薄膜结构	Mono Structure 

Electrical Characteristics 电气特性

Voltage Range 电压范围	305Vac / 350Vac 50/60Hz
Capacitance Range 容量范围	0.01 μ F to 20.0 μ F
Capacitance Tolerance 容量误差	$\pm 10\%$ or $\pm 20\%$ at +25°C
Capacitance 电容量标准测试	Measuring Frequency at 1kHz Measuring Voltage: 1 ± 0.2 V
Standard Atmospheric Conditions for Static Test 静态测试环境条件	Ambient temperature 15°C to 35°C (If there is any doubt on the results, the measurements shall be made at +20 $\pm$ 5°C) Relative humidity 45% to 75% (If there is any doubt on the results, the measurements shall be made at 60% to 70 %.) Air pressure 86 kPa to 106 kPa.
Voltage Between Terminals U_{TT} 极间耐压	DC Voltage: 1875VDC for 60 seconds or 2000VDC for 2 seconds, charge current must be 1A max. Withstanding (DC) voltage (cut off current 10mA), rise time 100V/S. AC Voltage: 1250Vac for 60 seconds ($C < 0.1\mu$ F) AC Voltage: 1000Vac for 60 seconds ($C \geq 0.1\mu$ F)
Voltage Between Terminals And Case U_{TC} 极壳耐压	$2U_R + 1500$ Vac, 60s (at +20 $\pm$ 2°C)
Dielectric Dissipation Factor $Tg\Delta 0$ 介质损耗角正切系数	$\leq 2 \times 10^{-4}$
Dissipation factor 损耗角	$C \leq 1.0\mu$ F, $tg\sigma \leq 0.003$ (10KHz) ; $C > 1.0\mu$ F, $tg\sigma \leq 0.002$ (1KHz)
Insulation Resistance 绝缘电阻	T-T R between leads, for $C \leq 0.33\mu$ F at 100 V; 1 min ,IR> 15 000 M Ω RC between leads, for $C > 0.33\mu$ F at 100 V; 1 min,IR > 5000 M Ω * μ F T-C at 100 V; 1 min , IR ≥ 100000 M Ω
Life Expectancy 预期工作寿命	100 000hours (UR, $\Theta_{hotspot}=85^\circ$ C)
Failure Rate 失效率	≤ 100 Fit V_{RAC} at hot spot temperature (T_{HS}) = 85°C
Max. Altitude 最高使用海拔	2000 m

Environmental Test 环境测试

Solderability 可焊性试验	Test Conditions: Testing method per IEC 60068-2-20 Ta Soldering temperature: +245 +/-5°C Immersion duration: 2 +/-0.5 seconds Performance: More than 95% of circumferential surface of lead wire shall be covered with new solder.
Soldering Heat Resistance 耐焊接热试验	Test Conditions: Flow Soldering: Preheat temperature 100°C~120°C Preheat Duration: 100 seconds maximum Soldering Temperature: +270 +/-5°C Immersion Duration: ≤10 seconds Immersion Depth: 1.5 +/- 0.5 mm from roots. Iron Soldering: Soldering Temperature: +400°C Immersion Duration: ≤3 seconds After test, allow it stay alone for 1.5 +/- 0.5 hours at standard temperature and humidity before making measurements. Performance: Capacitance Change Rate (C/C): ≤±2% △ Dissipation Facor (tgδ): ≤0.003 at 10 KHz. (C < 1.0uF) Dissipation Facor (tgδ): ≤0.002 at 1KHz. (C≥1.0uF) Insulation Resistance: ≥50% of initial limit
Temperature Cycle 温度循环	Test Conditions: Test Temperature Cycle: Total 200 cycles Each cycle includes: 1. +20 +/- 2°C for 3 minutes 2. -40 +0/-3 °C for 30 minutes 3. +20 +/- 2°C for 3 minutes 4. +110 +3/-0 °C for 30 minutes 5. +20 +/- 2°C for 3 minutes Performance: Capacitance Change Rate (△C/C): ≤±5% Dissipation Facor (tgδ): ≤0.011 at 10 KHz. (C≤1.0uF) Dissipation Facor (tgδ): ≤0.007 at 1KHz. (C > 1.0uF) Insulation Resistance: ≥50% of initial limit
Humidity Resistance 恒定湿热试验	Test Conditions: Testing method per IEC 60068-2-3 Ca Test Temperature: +60+/-2°C Test Humidity: 90% to 95% R.H. Test Duration: 500 +24/-0 hours Performance: Capacitance Change Rate (△C/C): ≤±8% Dissipation Facor (tgδ): ≤0.011 at 10 KHz. (C≤1.0uF) Dissipation Facor (tgδ): ≤0.007 at 1KHz. (C > 1.0uF) Insulation Resistance: ≥50% of initial limit

Environmental Test 环境测试

Damp Heat Loading 湿热负荷试验	Test Conditions: Test Temperature: +40+/-2°C Test Humidity: 90% to 95% R.H. Test Duration: 1000+24/-0 hours Loading Voltage: Apply 200% of rated voltage(vdc) Performance: Capacitance Change Rate ($\Delta C/C$): $\leq \pm 8\%$ Dissipation Factor ($\tan \delta$): ≤ 0.011 at 10 KHz. ($C \leq 1.0\mu F$) Dissipation Factor ($\tan \delta$): ≤ 0.007 at 1KHz. ($C > 1.0\mu F$) Insulation Resistance: $\geq 50\%$ of initial limit
Rapid Temperature Change 冷热冲击试验	Test Conditions: Testing method per IEC 60068-2-14 Na Test Temperature Cycle: Total 200 cycles High Temperature: +110+/-2°C for 60 minutes Low Temperature: -55 +/-2°C for 60 minutes Performance: Capacitance Change Rate ($\Delta C/C$): $\leq \pm 5\%$ Dissipation Factor ($\tan \delta$): ≤ 0.011 at 10 KHz. ($C \leq 1.0\mu F$) Dissipation Factor ($\tan \delta$): ≤ 0.007 at 1KHz. ($C > 1.0\mu F$) Insulation Resistance: $\geq 50\%$ of initial limit
High Temperature Loading 高温负荷试验	Test Conditions: Testing method per IEC 60384-14 Test Temperature: +110 +/-2°C. Apply 125% of rated voltage for 1,000 +24/-0 hours; Once every hour the voltage is increased to 1000 V r.m.s, for 0.1 seconds . Each of these voltages shall be applied to each capacitor individually through a resistor of $47\Omega \pm 5\%$ Performance: Capacitance Change Rate ($\Delta C/C$): $\leq \pm 10\%$ Dissipation Factor ($\tan \delta$): ≤ 0.011 at 10 KHz. ($C \leq 1.0\mu F$) Dissipation Factor ($\tan \delta$): ≤ 0.007 at 1KHz. ($C > 1.0\mu F$) Insulation Resistance: $\geq 50\%$ of initial limit

Electrical Test 电气测试

Charge and Discharge 充放电测试	Test Conditions: 10000 cycles Charge to $\sqrt{2} \times VR$ (DC) Charge resistance: $R = \frac{220 \times 10^{-6}}{C_N} \Omega$ Discharge resistance: $R = \frac{\sqrt{2} \times VR (DC)}{1.25XC(dv/dt)} \Omega$ Performance: Capacitance Change Rate ($\Delta C/C$): $\leq \pm 5\%$ Dissipation Factor ($\tan \delta$): ≤ 0.011 at 10 KHz. ($C \leq 1.0\mu F$) Dissipation Factor ($\tan \delta$): ≤ 0.007 at 1KHz. ($C > 1.0\mu F$) Insulation Resistance: $\geq 50\%$ of initial limit
Impulse Voltage 脉冲测试	Test Conditions: 3 successive impulses, full wave, peak voltage: X2: 2.5 kV for $C \leq 1 \mu F$ X2: 2.5 kV/$\sqrt{C}$ for $C > 1 \mu F$ Max. 24 pulses Performance: No self-healing breakdowns or flashover
High Temperature Features 高温特点	Test Conditions: Test Temperature: $+110 \pm 2^\circ C$ Test Duration: 16 $\pm 1/0$ hours Performance: Capacitance Change Rate ($\Delta C/C$): $+0/-5\%$ Dissipation Factor ($\tan \delta$): ≤ 0.011 at 10 KHz. ($C \leq 1.0\mu F$) Dissipation Factor ($\tan \delta$): ≤ 0.007 at 1KHz. ($C > 1.0\mu F$) T-T: at 100 V; 1 min, $IR \geq 100 M\Omega$ T-C: at 100 V; 1 min, $IR \geq 10000 M\Omega$
Low Temperature Features 低温特点	Test Conditions: Test Temperature: $-55 \pm 2^\circ C$ Test Duration: 2 $\pm 1/0$ hrs. Performance: Capacitance Change Rate ($\Delta C/C$): $+5/-0\%$ Dissipation Factor ($\tan \delta$): ≤ 0.011 at 10 KHz. ($C \leq 1.0\mu F$) Dissipation Factor ($\tan \delta$): ≤ 0.007 at 1KHz. ($C > 1.0\mu F$) T-T: at 100 V; 1 min, $IR \geq 100 M\Omega$ T-C: at 100 V; 1 min, $IR \geq 10000 M\Omega$

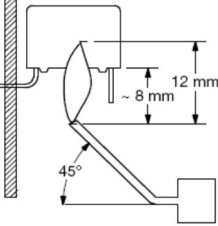
Mechanical Test 结构测试

Resistance to solvent 耐溶性试验	Test Conditions: Re: IEC 60068-2-45 test XA method 1 Solvent: propanol (isopropyl-alcohol) Temperature: 23±5°C Immersion time: 5 ±0.5 minutes Drying time: 5 min Mechanical treatment: 10 rubbing (with cotton-wool) Performance: Signs shall be kept clear Capacitance Change Rate ($\Delta C/C$): $\leq \pm 1\%$ Dissipation Factor ($\tan \delta$): ≤ 0.003 at 10 KHz. ($C < 1.0\mu F$) Dissipation Factor ($\tan \delta$): ≤ 0.002 at 1KHz. ($C \geq 1.0\mu F$) Insulation Resistance: $\geq 50\%$ of initial limit
Terminal Strength 引出端强度试验	Tensile: Testing method per IEC 68-2-21. $d \leq 0.8\text{mm}$ 10N $0.8\text{ mm} < d \leq 1.2\text{mm}$ 20N for 10 +/-1 second to the terminal in the axial direction and acting in a direction away from the body. Shall be no abnormality. Bending: $d \leq 0.8\text{ mm}$ 5N $0.8\text{ mm} < d \leq 1.2\text{ mm}$ 10N for 2 cycles. 90° once, return to its initial position for 2-3 seconds, and then to the opposite direction once. Shall be no abnormality.
Vibration Resistance 抗振性试验	Test Conditions: Testing method per IEC 60068-2-6 Fc Frequency Change: 10—55—10 Hz Vibration Distance : 1.5 mm Test Direction : X, Y, Z Test Duration: 2 +1/- 0 hours each direction Performance: Connection Strength: Shall be no open nor short-circuiting. The connection shall be stable Capacitance Change Rate ($\Delta C/C$): $\leq \pm 2\%$ Dissipation Factor ($\tan \delta$): ≤ 0.003 at 10 KHz. ($C < 1.0\mu F$) Dissipation Factor ($\tan \delta$): ≤ 0.002 at 1KHz. ($C \geq 1.0\mu F$) Insulation Resistance: $\geq 50\%$ of initial limit
Immersion cycle 浸渍周期	Test Conditions: To be immersed in the bath, one a clean water at temp. 65°C and the other saturated salt water bath at 0°C for 15 min . as lcycle, and to be repeated for 2cycles. The capacitor shall be washed in running water and let alone for 2 to 24hrs. Performance: Capacitance Change Rate ($\Delta C/C$): $\leq \pm 5\%$ Dissipation Factor ($\tan \delta$): ≤ 0.003 at 10 KHz. ($C < 1.0\mu F$) Dissipation Factor ($\tan \delta$): ≤ 0.002 at 1KHz. ($C \geq 1.0\mu F$)

Mechanical Test 结构测试

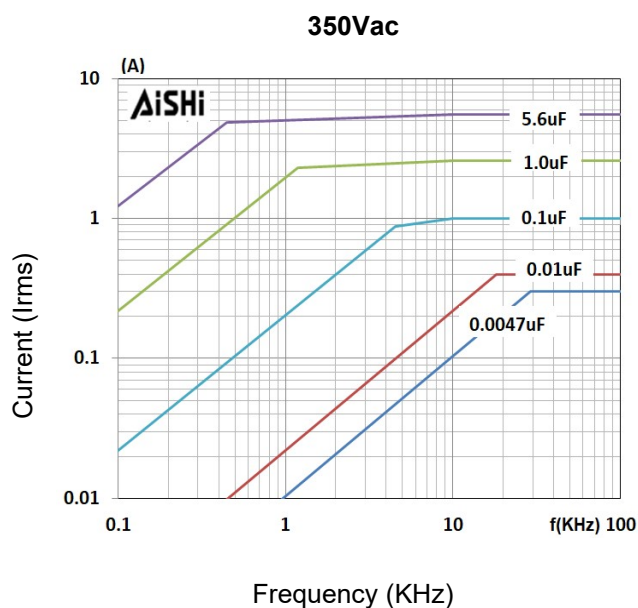
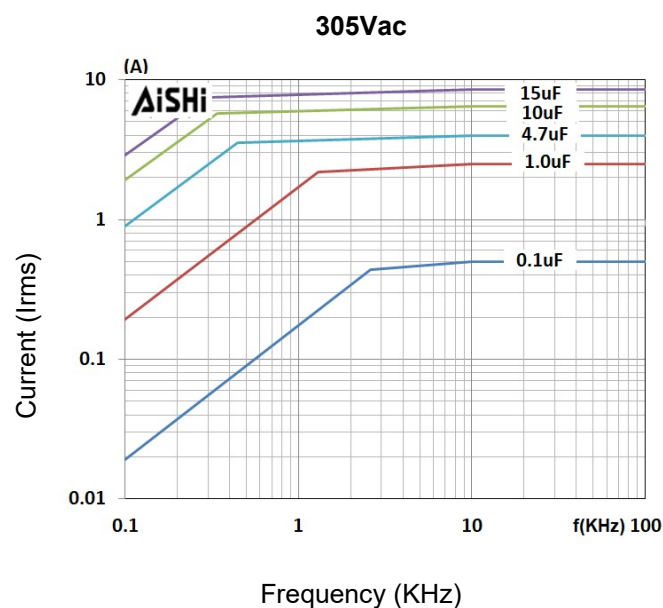
Mechanical Shock 机械冲击	Test Conditions: Pulse-shape: half-sine wave Acceleration: 500 m/s ² Duration of pulse: 11 ms Performance: Capacitance Change Rate ($\Delta C/C$): $\leq \pm 3\%$ Dissipation Factor ($\tan \delta$): ≤ 0.003 at 10 KHz. ($C < 1.0\mu F$) Dissipation Factor ($\tan \delta$): ≤ 0.002 at 1KHz. ($C \geq 1.0\mu F$) Insulation Resistance: $\geq 50\%$ of initial limit
Bump 撞击试验	Test Conditions: Total number of bumps: 1 000 times or 4 000 times Acceleration: 400 m/s ² Pulse duration: 6 ms Performance: Capacitance Change Rate ($\Delta C/C$): $\leq \pm 3\%$ Dissipation Factor ($\tan \delta$): ≤ 0.003 at 10 KHz. ($C < 1.0\mu F$) Dissipation Factor ($\tan \delta$): ≤ 0.002 at 1KHz. ($C \geq 1.0\mu F$) Insulation Resistance: $\geq 50\%$ of initial limit

Flammability Test 阻燃测试

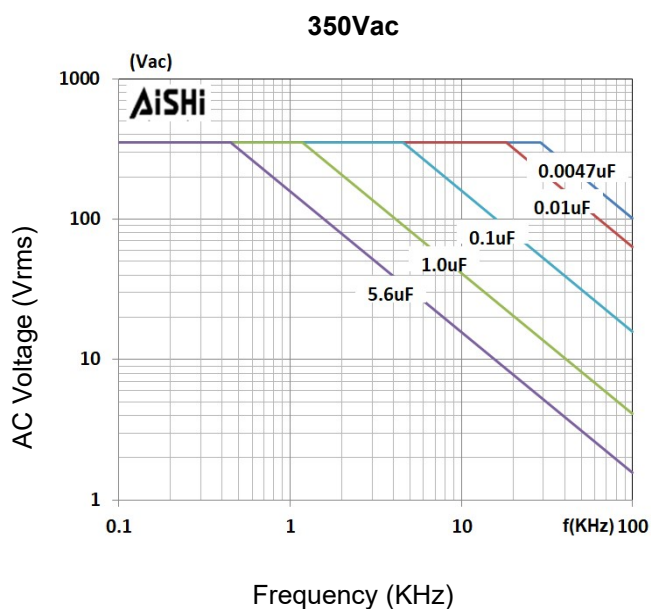
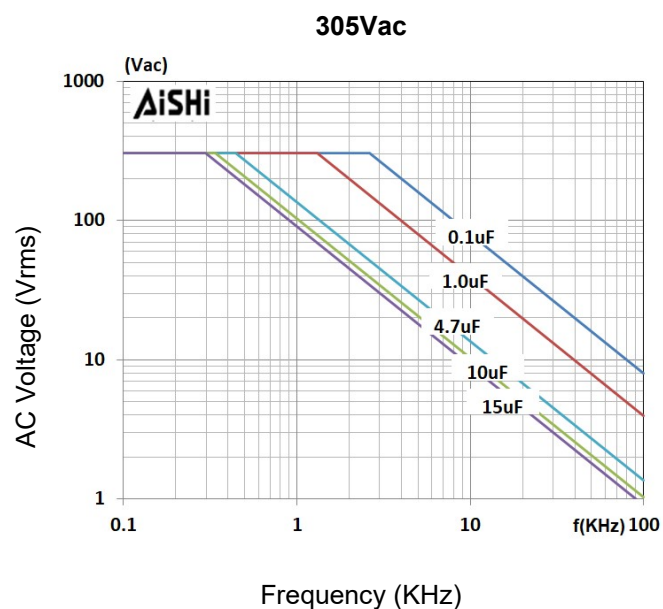
Passive Flammability Class B 被动可燃性测试 等级 B	Test Conditions: Bore of gas jet: $\varnothing 0.5$ mm Fuel: Butane Test duration for actual volume V in mm ³ : V $\leq$ 250: 10 s 250 < V $\leq$ 500: 20 s 500 < V $\leq$ 1750: 30 s V > 1750: 60 s One flame application  Performance: After removing test flame from capacitor, the capacitor must not continue to burn for more than 10 s. No burning particle must drop from the sample.
Active Flammability 主动可燃性测试	Test Conditions: 20 cycles of 2.5 kV discharges on the test capacitor connected to URAC Performance: The cheese cloth around the capacitors shall not burn with a flame. No electrical measurements are required

Characteristics Curve 特性曲线图

Maximum Current (I_{rms}) Vs Frequency

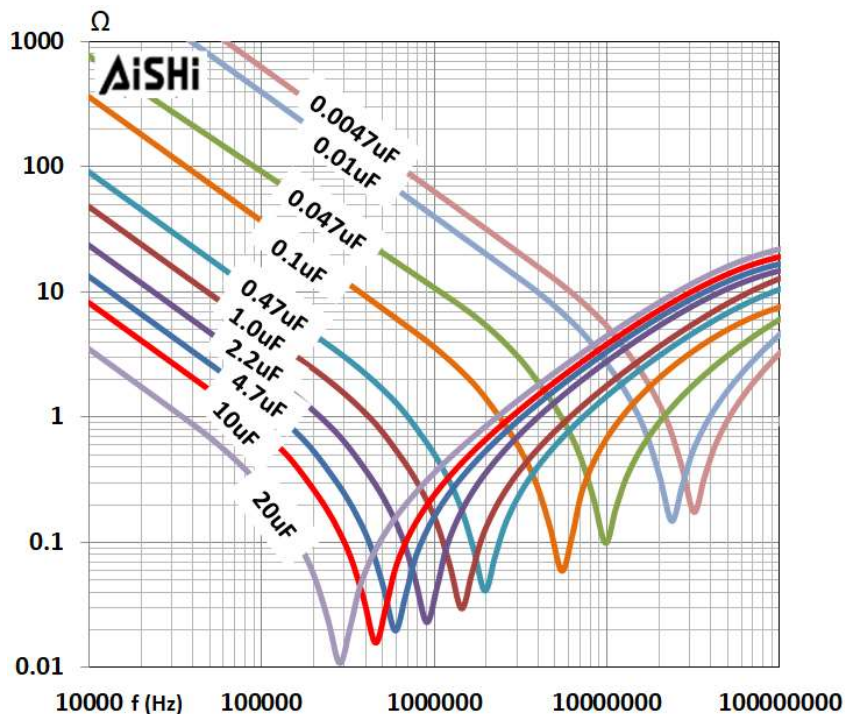


Maximum Voltage (V_{rms}) Versus Frequency

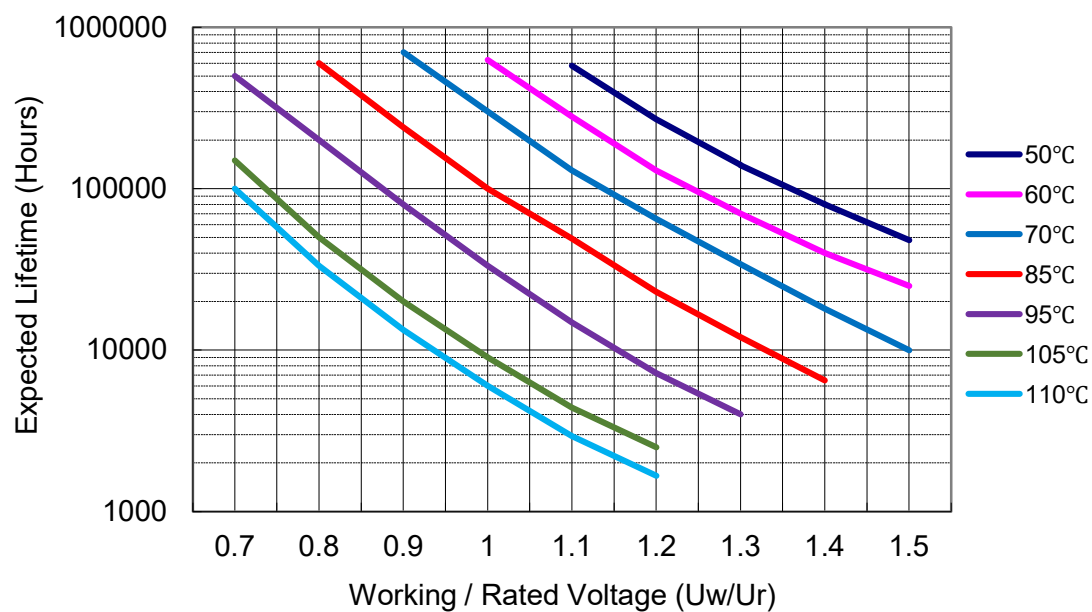


Characteristics Curve 特性曲线图

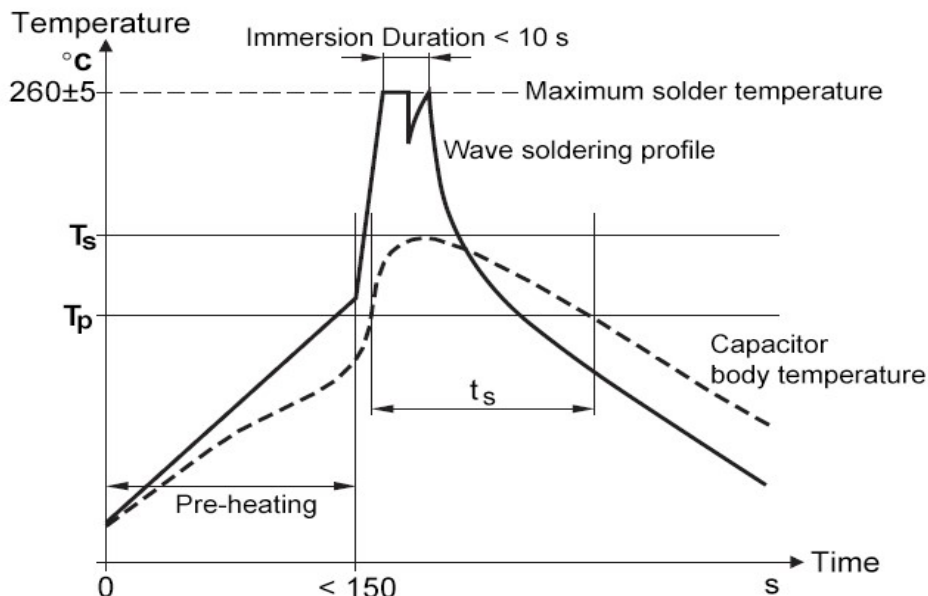
Impedance VS Frequency 阻抗 VS 频率



Expected Life Curve 寿命曲线图



Wave Soldering Recommendations 波峰焊参数



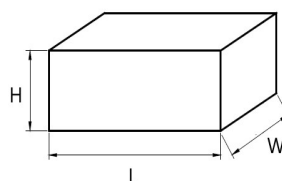
Ts: Capacitor body maximum temperature at wave soldering

Tp: Capacitor body maximum temperature at pre-heating

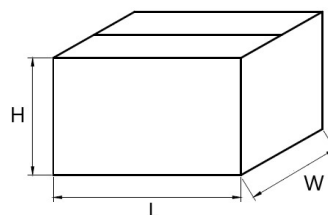
Polypropylene Capacitors 聚丙烯电容器	Polyester Capacitors 聚酯电容器
During pre-heating: $T_p \leq 110^\circ\text{C}$ During soldering: $T_s \leq 120^\circ\text{C}$, $t_s \leq 60$	During pre-heating: $T_p \leq 130^\circ\text{C}$ During soldering: $T_s \leq 160^\circ\text{C}$, $t_s \leq 60\text{s}$

Packaging Information 包装信息

Inner Box Specifications (Dimensions)			
Box #	L ±3mm	W±3mm	H ±3mm
# 1	331	331	25
# 2	331	331	35
# 3	331	331	50
# 4	331	331	80
# 5	350	170	35
# 6	350	170	50
# 7	350	170	80



Outer Box Specifications (Dimensions)			
Box #	L ±5mm	W±5mm	H ±5mm
# 1	350	340	265
# 2	370	360	350



Metallized Polypropylene Film EMI Suppression Capacitors

FX2 Series - Class X2 305Vac / 350Vac



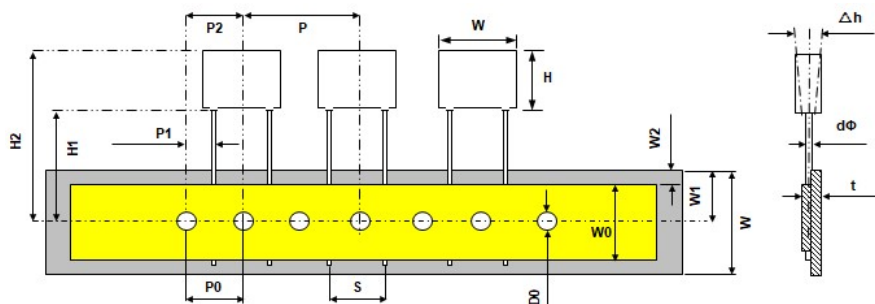
Packaging Quantity 包装数量

Pitch	Size Code	Dimension			Packaging Quantity		
		W	H	T	Long Leads	Short Leads	Ammo Pack
10	C13	13	11	5	1,200	1,488	680
	C16	13	12	6	1,200	1,224	560
	C26	13	14	8	1,200	912	410
	C27	13	16	8	1,200	912	410
	C30	13	16	9	1,200	816	370
15	E14	18	11	5	800	1,054	680
	E17	18	12	6	800	867	560
	E18	18	13.5	6	800	867	560
	E29	18	13.5	7.5	800	697	450
	E34	18	14.5	8.5	600	612	390
	E43	18	16	10	600	527	340
22.5	E47	18	19	11	600	476	300
	F17	26	16.5	7	528	528	300
	F20	26	17	8.5	432	432	250
	F24	26	19	10	372	372	210
	F26	26	20	11	336	336	190
	F27	26	22	12	300	300	170
	F29	26	23	13	276	276	160
	F34	26	29.5	14.5	252	252	140
27.5	F36	26	25	15	240	240	140
	G15	32	18	9	340	340	
	G18	32	20	11	280	280	
	G22	32	24.5	13	230	230	
	G25	32	24	14	220	220	
	G26	32	28	14	220	220	
	G33	32	28	18	170	170	
	G34	32	33	18	170	170	
37.5	G40	32	37	22	140	140	
	K21	42	32	19	112	112	
	K27	42	37	22	98	98	
	K32	42	44	24	91	91	
52.5	K42	42	45	30	70	70	
	M16	57.5	45	30	50	50	

Lead Taping Information 编带信息

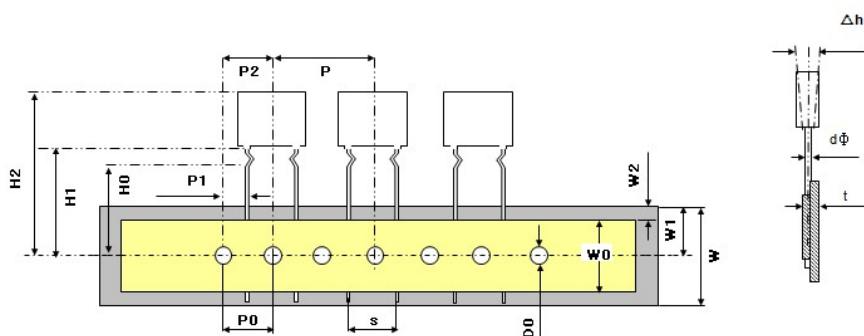
Taping Style: Straight leads

Lead spacing: 10 - 15mm



Taping Style: Forming leads

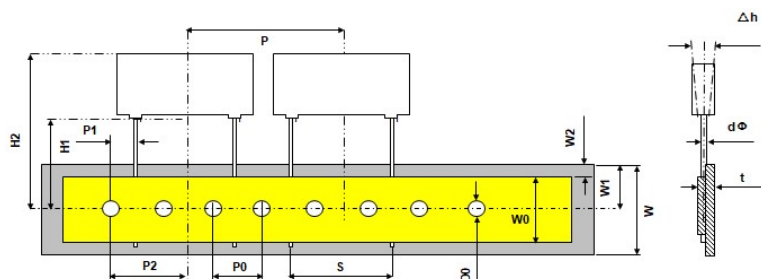
Lead spacing: 10 - 15mm



Quantity: 10pcs / line

Taping Style: Straight leads

Lead spacing: 22.5 – 27.5mm



Quantity: 6pcs / line

Taping Specification 编带参数

Description	Symbol	Dimension (mm)				Tolerance
Lead Spacing	S	10.0	12.5	15.0	22.5	+0.8/-0.2
Taping Pitch	P	25.4	25.4	25.4	38.0	±1.0
Feed Hole Pitch	P0	12.7	12.7	12.7	12.7	±0.2
Centering of Lead Wire	P1	7.7	6.5	5.2	7.80	±0.7
Centering of Body	P2	12.7	12.7	12.7	19.1	±1.3
Carrier Tape Width	W	18.0	18.0	18.0	18.0	±0.5
Hold Down Tape Width	W0	9.5	9.5	9.5	9.5	minimum
Hole Position	W1	9.0	9.0	9.0	9.0	±0.5
Hold Down Tape Position	W2	3.0	3.0	3.0	3.0	maximum
Feed Hole Diameter	D0	4.0	4.0	4.0	4.0	±0.2
Height of Component From Tape Center	H1	20.0	20.0	20.0	20.0	±0.5
Top Edge of Component	H2	39.0	39.0	39.0	44.0	maximum
Lead Wire Diameter	d	0.6	0.8	0.8	0.8	±0.1
Component Alignment	△h	0.0	0.0	0.0	0.0	±2.0
Tape Thickness	t	0.7	0.7	0.7	0.7	±0.2

Cautions and Warnings 注意事项

- Don't exceed the upper category temperature.
不可超出最高类别温度
- For longtime storage, maximum relative humidity 80%, no dew allowed on the capacitor.
电容器长期存放时，最大相对湿度不可超过 80%，电容器表面不允许有结露
- Do not use or store capacitor in corrosive atmosphere, in the dusty environment's regular maintenance and cleaning especially of the terminals is required to avoid conductive path between terminal / or terminal and ground.
不要在腐蚀性的环境中使用或储存电容器，在有灰尘的环境中，接线端子应定期维护和清洁，以避免接线端子间或端子与地面之间的导电。
- Don't apply any mechanical stress to the capacitor terminals, and avoid any compressive, tensile or flexural stress.
不要在电容器端子上施加任何机械应力，避免任何压缩、拉伸或弯曲应力
- Don't move the capacitor after fixed to the PC board, and don't pick up the PC board by the fixed capacitor.
将电容器固定在 PC 板上后，不要移动或晃动电容器，也不要透过已固定的电容器拿起 PC 板。
- Don't place the capacitor on a PC board whose holes paces differs from the specified space.
不要将电容器放置于非指定不同孔位的 PC 板上。
- Avoid overload of the capacitors.
避免电容器过载使用。
- Do not have unlimited service life expectancy, the max service life expectancy may vary depending on the application the capacitor is used in.
电容器寿命不是无止尽的，最大的使用寿命可能会根据不同的电容器使用状况而变化。

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