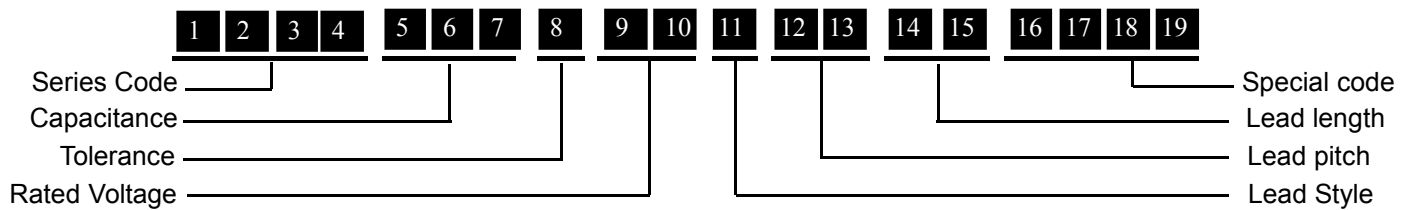


Type: MFA Specification

Part Numbering System



Digit 1~4	Type	MFA												
Digit 5~7	Digit 5~6 indicate the first two figures of the capacitance value and the 7th digit indicate the number of zero added to obtain the rated capacitance in pF. EX.102=1000pF=1nF=0.001μF													
Digit 8	Code	F			G		H		J		K		M	
	Tolerance	±1%			±2%		±3%		±5%		±10%		±20%	
Digit 9~10		A	B	C	D	E	F	G	H	J	K	L	M	
	1				20				50	63			1100	
	2	100	125	160	200	250	15	400	500	630	800	120		
	3	1000	1250	1600	2000	2500	31	4000	5000	6300	8000	1200	1400	
		N	P	Q	R	S	T	U	V	W	X	Y		
	1	15	240	300	330	440	54	600	700	850	900			
	2	150	275	305	350	450	520		760	1800				
	3	1500	280	310		480	550					3000		
Letter and then number indicate AC, but number and then Letter indicate DC. EX.2A=100VDC A2=100VAC														
Digit 11	Code	A			B			C			D			X
	Lead style	Straight lead			Kink-Cutted			Inward forming			outward forming			straight lead Cutted
	Code	E			S			T			F			G
	Lead style	Taping (Ammo) (直脚 TP,P0=12.7mm)			Taping (Ammo) (直脚 TP, P0=15.0mm)			Taping (Ammo) (同等弯 TP)			Taping (Ammo) (内弯 TP)			Taping (Ammo) (外弯 TP)
Digit 12~13	Code	P2	P3	P4	P5	P6	P8	P9	PA	PB	PC	PD	PE	
	Pitch	3.5	4.0	4.5	5.0	6.0	7.0	7.5	8.0	9.0	10.0	31.0	15.0	
	Code	PF	PG	PH	PJ	PK	PL	PM	PN	PP	PQ	PR	PS	
	Pitch	20.0	21.0	22.0	22.5	28.5	52.5	27.5	30.0	32.5	41.0	12.5	17.5	
	Code	PT	PU	PV	PW	PX	PY	PZ	PO					
	Pitch	51.0	27.0	37.5	25.0	12.0	35.0	16.0	Axial					
Digit 14~15	Code	L1*	L2	L3	L4	L5	L6	L7*	L8	L9	LA	LB	LC	
	Length	15.0	3.5	4.0	4.5	10.0	15.0	20.0	TP	2.7	8.0	5.0	6.0	
	Code	LD*	LE	LF	LG	LH	LJ*	LK	LL	LM	LN	LP	LQ*	
	Length	26.0	7.5	5.5	12.0	7.0	25.0	13.0	6.5	3.0	9.0	2.5	17.0	
	Code	LR	LS*	LU*	LW*	LX	LY*	LZ*	LV	LO*	LT*	VL*		
	Length	3.8	24.0	27.0	40.0	16.0	30.0	32.0	3.2	Axial	22	33		

Notes: * Straight,length is minimum

	Code	Explanation	Code	Explanation	Code	Explanation
Digit 16~17	DT	The different size(T)	DH	The different size(H)	EL	Low noise, The different size(T)
	HH	HF, The different size(H)	HT	HF, The different size (T)		
Digit 18~19	Special Number.					

Phylogenetic tree showing relationships between eight taxa (1-8). The tree is rooted at the bottom with taxon 5. The relationships are as follows:

- Taxon 5 is the outgroup.
- Taxon 4 is sister to a clade containing taxa 1 and 2.
- Taxon 1 is sister to taxon 2.
- Taxon 3 is sister to a clade containing taxa 6 and 7.
- Taxon 6 is sister to taxon 7.
- Taxon 8 is sister to a clade containing taxa 1, 2, 3, 4, 6, and 7.

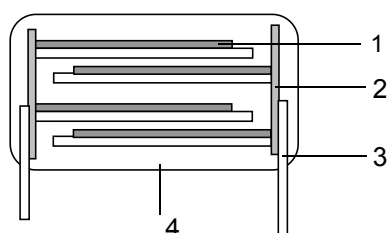
Support values (F 474 K m) are shown at the nodes. The scale bar represents 0.066001 substitutions per site.

1	: Company symbol	2	: Capacitance	3	: Tolerance	4	: Rated voltage
5	: Type name	6	: Year / Month	7	: Week	8	: Production batch number (P≥10.0mm,H≥13.0mm)

Year	Month	Mark	Year	Month	Mark	Year	Month	Mark	Year	Month	Mark
2021 2025 ...	1	A	2022 2026 ...	1	N	2023 2027 ...	1	a	2024 2028 ...	1	n
	2	B		2	P		2	b		2	
	3	C		3	Q		3	c		3	q
	4	D		4	R		4	d		4	r
	5	E		5	S		5	e		5	s
	6	F		6	T		6	f		6	t
	7	G		7	U		7	g		7	u
	8	H		8	V		8	h		8	v
	9	J		9	W		9	j		9	w
	10	K		10	X		10	k		10	x
	11	L		11	Y		11	l		11	y
	12	M		12	Z		12	m		12	z

Code: B: February 2021, February 2025, February 2029...

Construction



- 1 : Metallized polypropylene film
2 : Metal spray
3 : Lead wire
4 : Epoxy resin (UL94V-0、B)

Type: MFA Specification			Electrical Characteristics			
No	項 目 Item		性 能 Performance		條 件 Test Conditions	參考標準 Reference Standard
1	使用溫度範圍 Operating Temperature Range		-40℃ ～ +110℃ (+85℃ to 110℃:decreasing Factor1.25% per℃ for VR(DC))			IEC 60384-16 2.1.12.2.5
2	額 定 電 壓 Rated Voltage		450VDC,520VDC,630VDC			IEC 60384-16 2.2.3
3	耐電壓 Withstand Voltage	端 子 間 Between Terminals	No abnormality.		Rated voltage x 150% 10 sec Charge and discharge current shall not exceed 10 mA	IEC 60384-16 4.2.1
		端子外裝間 Between Terminals & Enclosure				
4	絕 緣 阻 抗 Insulation Resistance		C≦0.33μF	VR> 100V 25,000MΩ min VR≦ 100V 12,500MΩ min	Charge time: 60 ±5sec. Charge voltage: VR < 100VDC: 50VDC VR < 500VDC: 100VDC VR ≧ 500VDC. 500VDC Test Temp: 20℃	IEC 60384-16 4.2.4
			C>0.33μF	VR> 100V 7,500MΩ*μF min VR≦ 100V 3,750MΩ*μF min		
5	靜 電 容 量 Capacitance		於 指 定 範 圍 內 Within specified tolerance		at 1 KHz ±10% Measure voltage at 1 Vrms Test temp: 20℃	IEC 60384-16 4.2.2
6	散 逸 因 數 Dissipation Factor		0.1% max at 1KHz		Measure voltage at 1 Vrms Test temp: 20℃	IEC 60384-16 4.2.3
7	端子強度 Terminal Strength	抗拉強度 Pull Strength	端 子 不 鬆 斷 No cutting or slack of terminals		Wire diameter: 0.6&0.8mm Load: 1 kg, time: 10 sec. Wire diameter: 1.0 mm Load: 2 kg, time: 20 sec.	IEC 60384-16 4.3
		扭轉強度 Bending Strength			Wire diameter:0.6&0.8 mm 1.0&1.2 mm 90° x 4 time	
8	耐 震 性 Vibration Proof		無 明 顯 異 常 No abnormality of the appearance		Frequency range 10-55-10-55 Hz Amplitude: 0.75 mm, 2 hrs/direction for 3 directions	IEC 60384-16 4.7
9	焊 錫 附 著 性 Solder ability		導線浸入後的表面至少需附著 95%的新焊錫 At least 95% of the surface of the lead wire dipped into is covered with new solder.		Solder temp: 245℃ ±5℃ Immersion time: 2±0.5sec. Solder: SnAgCu (Sn:96.5% Ag:3% Cu:0.5%)	IEC 60384-16 4.5
10	Cold Resistance	Capacitance Change	ΔC/C≦±5% Within ±5%		Temperature: -40 ±2℃ Duration: 96±4 hrs	IEC 60384-16 4.10.4

Type: MFA Specification			Electrical Characteristics																	
No	項 目 Item		性 能 Performance	條 件 Test Conditions	參考標準 Reference Standard															
11	焊錫耐熱性 Resistance to Soldering heat	外 觀 Appearance	無 明 顯 異 常 No abnormality on appearance	Solder temp: 265 ±5°C Immersion time: 10±0.5sec.	IEC 60384-16 4.4															
		耐 電 壓 Withstand Voltage	依 項 目 3 Comply with item 3																	
		靜電容量變化率 Capacitance Change	△C/C ≡ ±3% Within ±3%																	
		散逸因數 Dissipation Factor	於 項 目 7 範 圍 以 內 Within spec of item 7 above.																	
		絕緣阻抗 Insulation Resistance	Same as the spec of item 6 above																	
12	耐 熱 性 Dry Heat Resistance	絕 緣 阻 抗 Insulation Resistance	50% of minimum specified value	Temperature: +85 ±2°C Duration: 96±4 hrs	IEC 60384-16 4.10.2															
		靜電容量變化率 Capacitance Change	△C/C ≡ ±5% Within±5%																	
13	溫度循環 Temperature Cycle	外 觀 Appearance	無 明 顯 異 常 No abnormality on appearance	Total: 5 cycle <table><tr><td>Step</td><td>Temp</td><td>Time</td></tr><tr><td>1</td><td>-40±2°C</td><td>30 ±1min</td></tr><tr><td>2</td><td>+25±2°C</td><td>3min max</td></tr><tr><td>3</td><td>+85±2°C</td><td>30 ±1min</td></tr><tr><td>4</td><td>+25±2°C</td><td>3min max</td></tr></table>	Step	Temp	Time	1	-40±2°C	30 ±1min	2	+25±2°C	3min max	3	+85±2°C	30 ±1min	4	+25±2°C	3min max	IEC 60384-16 4.6
		Step	Temp		Time															
		1	-40±2°C		30 ±1min															
		2	+25±2°C		3min max															
		3	+85±2°C		30 ±1min															
4	+25±2°C	3min max																		
耐電壓 Withstand Voltage	依 項 目 3 Comply with item 3																			
絕 緣 阻 抗 Insulation Resistance	50% of minimum specified value																			
靜電容量變化率 Capacitance Change	△C/C ≡ ±5% Within±5%																			
散 逸 因 數 Dissipation Factor Change	△DF ≡ 0.3%max at 1KHz(20°C)																			
14	充放電 Charging and discharging	靜電容量變化率 Capacitance Change	△C/C ≡ ±5% Within±5%	Times:10 000 Duration of charging:0.5s Duration of discharging : 0.5s Charging voltage: rated voltage Charging resistance:220/CR(Ω) Discharging resistance: R=10/ CR(Ω) or 20(whichever is the greater) CR: rated capacitance (μF)	IEC 60384-16 4.13															
		散逸因數變化量 Dissipation Factor Change	△DF ≡ 0.5%(1KHZ)																	
		絕 緣 阻 抗 Insulation Resistance	IR: ≧ 50%of rated value																	
15	穩態濕熱試驗 Damp heat , Steady state	外 觀 Appearance	無 明 顯 異 常 No abnormality on appearance 印 字 可 辨 識 Marking to be legible	Humidity: 90~95% RH Temperature: +40 ±2°C Duration:504 ± 1hrs Measure after exposing at normal state for 1.5±0.5hrs.	IEC 60384-16 4.11															
		耐 電 壓 Withstand Voltage	依 項 目 3 Comply with item 3																	
		絕 緣 阻 抗 Insulation Resistance	50% of minimum specified value																	
		靜電容量變化率 Capacitance Change	△C/C ≡ ±5% Within ±5%																	
		散逸因數變化量 Dissipation Factor Change	△DF ≡ 0.1%max at 1KHz(20°C)																	

Type: MFA Specification			Electrical Characteristics		
No	項 目 Item		性 能 Performance	條 件 Test Conditions	參考標準 Reference Standard
16	高溫負荷 Endurance Test	外 觀 Appearance	無 明 顯 異 常 No abnormality on appearance 印 字 可 辨 識 Marking to be legible	Temperature: +85 ±2°C Applied Voltage 125% x VRDC Duration:1,000 +48/-0 hrs through series resistor of (0.022/CR)Ω to the Capacitor Measure after exposing at normal state for 4 hrs.	IEC 60384-16 4.12
		耐 電 壓 Withstand Voltage	依 項 目 3 Comply with item 3		
		絕 緣 阻 抗 Insulation Resistance	50% of minimum specified value		
		靜電容量變化率 Capacitance Change	$\Delta C/C \leq \pm 5\%$ Within $\pm 5\%$		
		散逸因數變化量 Dissipation Factor Change	$\Delta DF \leq 0.2\%$ max at 1KHz(20°C)		
17	高濕/負荷 試驗 Humidity Bias Test	耐 電 壓 Withstand Voltage	依 項 目 3 Comply with item 3	Humidity:90~95%RH Temperature:40±2°C Applied Voltage100%×VRDC Duration:1000±24hrs Through series resistor of 20~1000Ω/V to the Capacitor Measure after exposing at Normal state for 4 hrs	AEC- Q200
		絕 緣 阻 抗 Insulation Resistance	50% of minimum specified value		
		靜電容量變化率 Capacitance Change	$\Delta C/C \leq \pm 10\%$ Within $\pm 10\%$		
		散逸因數變化量 Dissipation Factor Change	$\Delta DF \leq 0.5\%$ max at 1KHz(20°C)		

電容儲存條件:

溫度: +5 ~ +35°C

濕度: $\leq 75\%$ RH

電容儲存時間:

依周期計算有效期: 兩年. (超出兩年產品電氣特性需重新選別及檢查產品外觀)

Strong Components Co.,Ltd