



岱恩電子工業股份有限公司
DAIN ELECTRONICS CO., LTD.

承認書

(APPROVAL SHEET)

客戶名稱：

(Customer)

世昌隆

品名：

(Description)

INTERFERENCE SUPPRESSION CAPACITOR

規格：

(Type)

MPX(Class-X2)

岱恩料號：

(Part No.)

MPX105K2D48AB1515

客戶料號：

(Customer Part No.)

日期：

(Date)

11-NOV-2021

DAIN APPROVAL STAMP

CUSTOMER APPROVAL STAMP



2020.08.01 VERSION I



岱恩電子工業股份有限公司

DAIN ELECTRONICS CO., LTD.

Dain Part Number :

M	P	X	1	0	4	K	3	D	2	5	A	B	1	0	1	5
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17

Digit : 1~3 Type Code

Digit : 12

Current Type Code

Digit : 4~6 Capacitance Value Code

Digit : 13

Lead Forming Code

Digit : 7 Capacitance Tolerance Code

Digit : 14~15

Lead Pitch Code

Digit : 8 Rated Voltage Code

Digit : 16~17

Lead Length Code

Digit : 9~11 Case Code

●Digit : 1~3 Type Code

Code	MPX	MP1	MEF	MPF	MEM	MEC	MPC	MEB
Type	X2	X1	MEF	MPF	MEM	MEC	MPC	MEB

Code	PPN	PPS	PEN	PSR	PSA	MEA	MET
Type	PPN	PPS	PEN	PSR	PSA	MEA	MET

●Digit : 4~6 Capacitance Value Code

Code	102	103	104	105
Capacitance Value	0.001uF	0.01uF	0.1uF	1uF

●Digit : 7 Capacitance Tolerance Code

Code	J	K	M
Tolerance	±5%	±10%	±20%

●Digit : 8 Rated Voltage Code

Code	1	2	3
Rated Voltage	250VAC	275VAC	310VAC

●Digit : 9~11 Case Code

Code	C3X	D25	E2X
Case NO.	C3	D25	E2

●Digit : 12 Current Type Code

Code	A	D
Current	AC	DC

●Digit : 13 Lead Forming Code

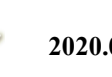
(B)	(K)	(R)	(U)	(W)	T	S
					Taping	Customer Special Require

●Digit : 14~15 Lead Pitch Code

Code	10	23
Lead Pitch	10	22.5

●Digit : 16~17 Lead Length

Code	04	15
Lead Length	3.5	15



2020.08.01 VERSION I



岱恩電子工業股份有限公司
DAIN ELECTRONICS CO., LTD.

Interference Suppression Capacitor

Product Type : Metallized Polypropylene Film Capacitor-MPX

Typical Applications

Across-the-line , Antenna-coupling, Line-by-pass , EMI filter , Fixed capacitors for use in electronics equipment-component , Interference suppression, Connection to the supply mains

Features

UL, cUL, VDE, ENEC, CQC, CE Approvals

Non-Inductive & Self-Healing Contruction

RoHS Compliant & Pb-Free Finish

Molded Plastic Case & Epoxy Resin Meets UL-94-0 Passive Flammability Test

Electrical Characteristics

Dielectric	Polypropylene film
Electrodes	Metallized film
Capacitance Tolerance	J($\pm 5\%$) K($\pm 10\%$) M($\pm 20\%$)
Range Capacitance	0.001 μ F~1.0 μ F
Dissipation Factor	0.1% Max. at 1KHz and 25°C $\pm 5^\circ$ C
Insulation Resistance	$\geq 15000M\Omega$ for C $\leq 0.33\mu$ F at 100V ± 15 VDC;1min
	$\geq 5000M\Omega \cdot \mu$ F for C > 0.33 μ F at 100V ± 15 VDC;1min
Voltage Proof	Voltage between terminals 1200VDC /1min (IEC 60384-14)
	(Voltage raising time 5~10sec ,cut off current 10mA,ARC=OFF).
	Voltage between terminals and case 2000Vac /1min
Rated Voltage	250 VAC for UL, cUL , VDE, CQC, CE, ENEC
	275 VAC for UL, cUL, VDE, CQC, CE, ENEC
	310 VAC for UL, cUL, CQC
Operating Temperature	-40~+110°C
International Technical standard	In accordance with IEC60384-14(ed.4) DIN EN60384-14(VDE 0565 Teil 1-1):2006-04; EN132400 & UL1414 UL1283 Jun 19, 2003- UL60384-14 (Passive flammability category B)& GLF/C.(passive flammability category C)
	UL、cUL、CQC(passive flammability category B or C) / VDE、ENEC(passive flammability category C)
	Minimum Limit Temperature: G = -40°C
	Maximum Limit Temperature: L= +110°C



2020.08.01 VERSION I



岱恩電子工業股份有限公司

DAIN ELECTRONICS CO., LTD.

Specifications (IEC60384-14)

試驗項目 Test items	性能要求 Performance requirements	試驗條件 Conditions of test
電容量 Capacitance	在規定公差內 Within the tolerance specified	1KHz, 1Vrms Max. at 25°C
損耗因素 Dissipation Factor	0.001 (0.1%) Max.	1KHz, 1Vrms Max. at 25°C
耐電壓 Voltage proof	應無異常 Shall be no abnormality	引線間 Between terminals 4.3UR(Vdc) Test of 60sec.
		引線與外盒間 Between terminal and enclosure UR×200%+1500Vac, 60sec.
絕緣電阻 Insulation resistance	CR≤ 0.33 μF IR≥ 15,000MΩ CR>0.33 μF IR≥ 5,000s	100±15Vdc, 60sec /20°C
引出端強度試驗 Robustness of terminations	無斷線, 電容器無損壞 No wire breakage and no damage of capacitor	端子強度 Tense Strength of Terminal 負載重量 Load Force : 1.0 Kg 保持時間 Holding Time : 10 ± 1sec
		抗彎強度 Bending Strength of Terminal 負載重量 Load Force : 0.5 Kg 彎曲時間 Bending Time : 4 x 90°
耐焊接熱 Resistance to soldering heat	(1)Appearance : No visible damage (2)ΔC/C:≤ ±5% of the initial value	焊接溫度 Solder temperature: 260±5°C 焊接時間 Solder time: 5±0.5sec
可焊性 Solderability	表面鍍錫95% 95% of the surface tinning	焊接溫度 Solder temperature: 260±5°C 焊接時間 Solder time: 2±0.5sec
溫度快速變化 Rapid change of temperature	應目視檢查電容器, 並無可見損壞 The capacitors shall be visually examined and there shall be no visible damage.	下限溫度 Lower category temperature:-40°C 上限溫度 Upper category temperature:110°C 循環次數 Number of cycles: 5 持續時間 Duration t1 = 30 min



2020.08.01 VERSION I



岱恩電子工業股份有限公司

DAIN ELECTRONICS CO., LTD.

試驗項目 Test items	性能要求 Performance requirements	試驗條件 Conditions of test
振動 Vibration	應目視檢查電容器, 並無可見損壞 The capacitors shall be visually examined and there shall be no visible damage	頻率範圍 Frequency range: 10~55Hz 振幅軸向 Course: X、Y、Z (axis) 持續時間 2h/ axis (6h in total) 位移振幅 Displacement amplitude:0.75mm
氣候序列 Climatic sequence	(1)Appearance : No visible damage (2) $\Delta C/C \leq \pm 5\%$ of the initial value (3)DF ($\tan \delta$) : ≤ 0.008 of increased value (4)IR : $\geq 50\%$ of the applicable limits (5)Voltage proof: Normal	乾熱 Dry Heat 上限溫度 Upper Temperature: 110°C 持續時間 Lower Duration: 16Hrs
		寒冷 Cold 下限溫度 Temperature: -40°C 持續時間 Duration: 2Hrs
濕熱穩態 Damp Heat Steady State	(1)Appearance : No visible damage (2) $\Delta C/C \leq \pm 5\%$ of the Initial value (3)DF ($\tan \delta$) : ≤ 0.008 of increased value (4)IR : $\geq 50\%$ of the applicable limits (5)Voltage proof: Normal	溫度 +40°C, 濕度 93%, 56 天 +40°C and 93% RH, 56 days
充放電 Charge and discharge	(1)Appearance : No visible damage (2) $\Delta C/C \leq \pm 10\%$ of the initial value (3)DF ($\tan \delta$) : ≤ 0.008 of increased value (4)IR : $\geq 50\%$ of the applicable limits	實驗電壓 Test voltage : $\sqrt{2} \times$ URVAC 50 Hz 充放電 Charge and discharge: 0.5sec/time 重複次數 Repeated for 10000 cycles
耐久性 Endurance	(1)Appearance : No Visible Damage (2) $\Delta C/C \leq \pm 10\%$ of the initial value (3)DF ($\tan \delta$) : ≤ 0.008 of increased value (4)IR : $\geq 50\%$ of the applicable limits	額定電壓 x 125%, 每小時上升至 1000VAC 0.1秒, 上限額定溫度 1000 小時 1.25 x URVAC 50 Hz, once every hour Increase to 1,000VAC for 0.1second, 1,000 hours at upper rated temperature

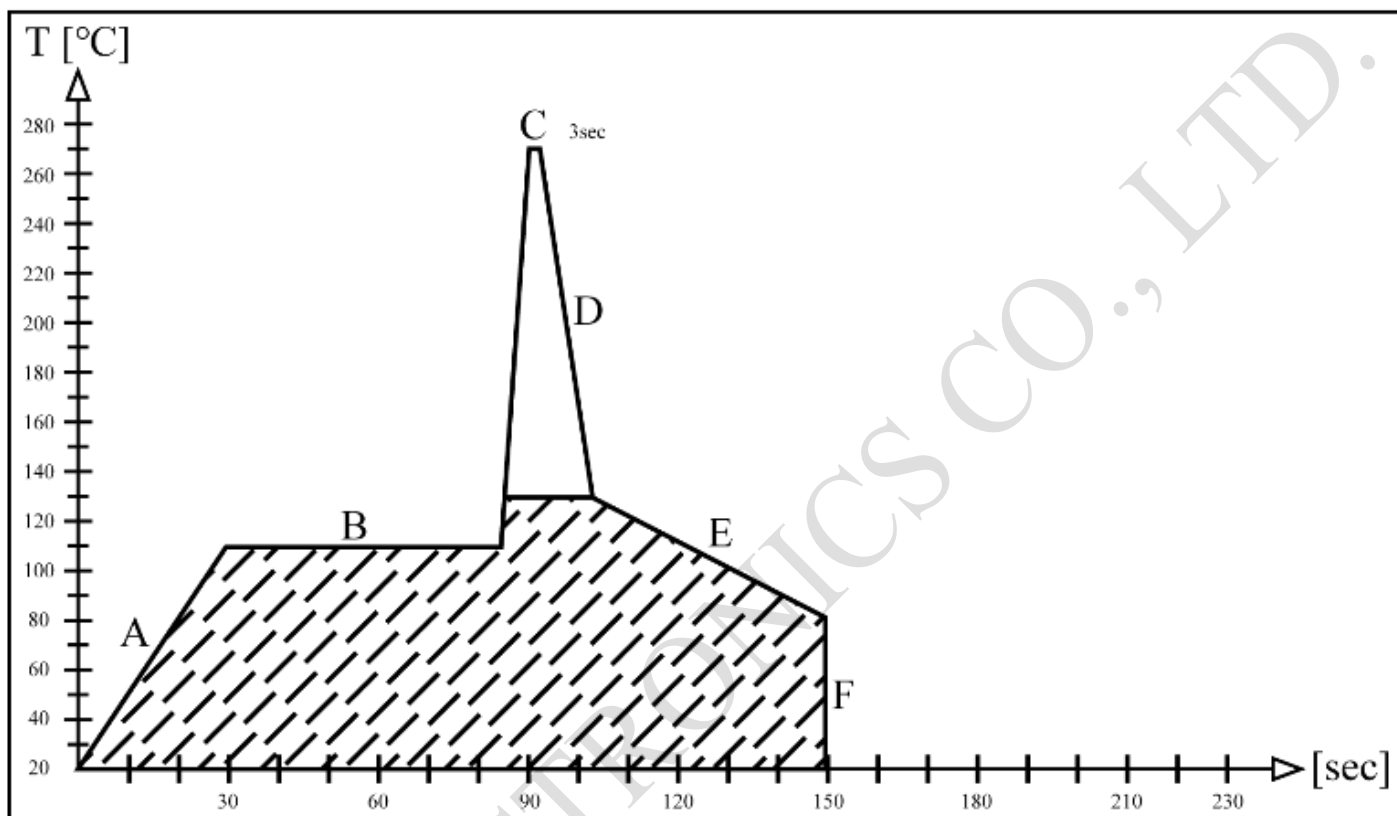




岱恩電子工業股份有限公司
DAIN ELECTRONICS CO., LTD.

The Relationship Between Temperature and Time of Wave Soldering

Metallize Capacitor Product 《Temperature and Time Graph for Wave Soldering》



1. Soldering Process

A section : PCB entering phase , time 30 secs, temperature 20~110°C

B section : Preheating keep phase, time about 60 secs, temperature 110°C

C section : Tin stove tinning phase, time about 3 secs, temperature 270°C

D section : The first phase of temperature drop after lead tinning , time 10 secs, temperature 270~130°C .

E section : The second phase of temperature drop , time about 50secs, temperature 130~80°C .

F section : The third phase of temperature drop, time (wave soldering completed), temperature 80°C~ normal temperature

2.Explanation : The shaded section of the above graph is heated temperature and time range of products through tin stove , the melting point temperature of the glue (wax) is up to 130°C , the preheating temperature cannot exceed this temperature. The lead tinning for 3~5 seconds in a 270° tin stove , due to heat transfer from the lead , the capacitor body will increase by about 20~30° after the original preheating temperature. The preheating temperature and the tin transfer temperature overlap each other, do not exceed the melting point of wax (130°C). The preheating temperature is generally constant at 110°C and the time is within 5 minutes.

Above information is a soldering recommendation.

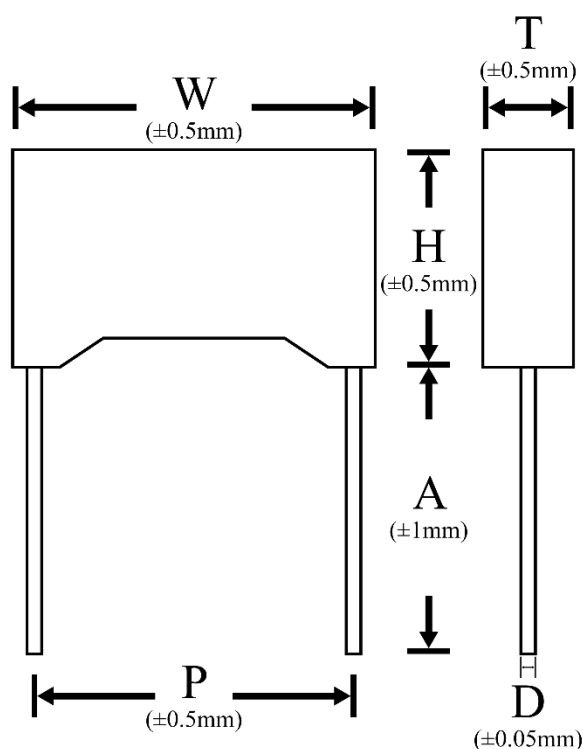


2020.08.01 VERSION I



岱恩電子工業股份有限公司

DAIN ELECTRONICS CO., LTD.



Dimensions (Unit:mm)						
CAP	RV	BOX TYPE	W ±0.5	H ±0.5	T ±0.5	D ±0.05
1uF	275AC	D48	18	17.5	6	0.8

Lead Forming Style

(B)	(K)	(R)	(U)	(W)	T	S
					Taping	Customer Special Require

CAP	RV	Lead Forming Code	A Section	B Section	P ±0.5
1uF	275AC	B	15	X	15

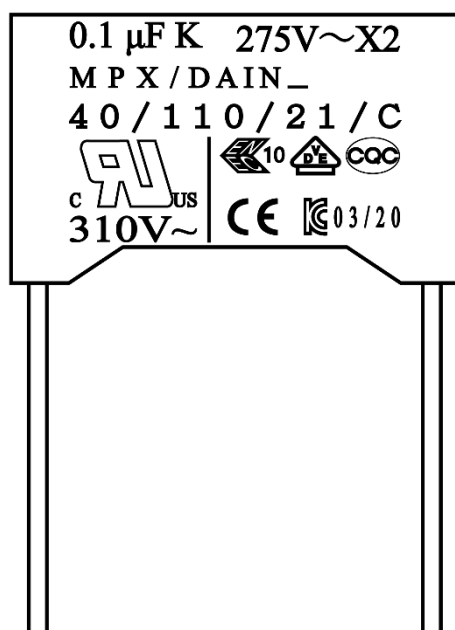


2020.08.01 VERSION I



岱恩電子工業股份有限公司

DAIN ELECTRONICS CO., LTD.



0.1K	Capacitance & Capacitance Tolerance
275V~ 310V~	Rated Voltage
X2	Capacitors Class
MPX	Product Type
DAIN	Manufacturer's Trade Mark
40/110/21/C	Climatic Category
	Safety Approval Mark
03/20	Date Code

Safety Approval

Approval Date Certification No	Approval Mark	Country	Related Standard & First Cert Passed Date
MAR. 21,2014 E147776	UL CUL 	USA CANADA	UL 60384-14, CSA E60384-14/-1/IEC 60384-14/-1 FOWX2/8/ UL1414/UL1283, UL94-0 First passed UL certification on 1997
DEC. 06, 2016 40018798	VDE 	GERMANY	DIN EN 60384-14(VDE 0565-1-1):2014-04;EN 60384-14:2013-08 DIN EN 60384-14/A1(VDE 0565-1-1/A1):2017-04;EN 60384-14:2013/A1:2016 IEC 60384-14:2013 IEC 60384-14:2013/AMD1:2016 First passed VDE certification on 1997
DEC. 06, 2016 40018798	ENEC 	EUROPE	DIN EN 60384-14(VDE 0565-1-1):2014-04;EN 60384-14:2013-08 DIN EN 60384-14/A1 (VDE 0565-1-1/A1):2017-04;EN 60384-14:2013/A1:2016 IEC 60384-14:2013 IEC 60384-14:2013/AMD1:2016 First passed VDE certification on 1997
Aug. 30, 2016 CQC03001007500	CQC 	CHINA	GB/T 14472-1998 GB/T 6346.14-2015 First passed CQC certification on 2003
SU03026	KC 	KOREA	K60384-14(2006-12)
Dec. 01, 1996	CE 	EUROPE	EN132400 : 1994 / IEC60384-14 2nd 73/23/EEC / 93/68/EEC



岱恩電子工業股份有限公司

DAIN ELECTRONICS CO., LTD.

CODE	MFD	250/275VAC/310VAC				
		W±0.5	H±0.5	T±0.5	P±0.5	D±0.05
102-103	0.001-0.01	13	11	5	10	0.6
103	0.01	18	11	5	15	0.6
123	0.012	18	11	5	15	0.6
153	0.015	18	11	5	15	0.6
183	0.018	18	11	5	15	0.6
223	0.022	13	11	5	10	0.6
223	0.022	18	11	5	15	0.6
273	0.027	13	11	5	10	0.6
273	0.027	18	11	5	15	0.6
333	0.033	13	11	5	10	0.6
333	0.033	18	11	5	15	0.6
393	0.039	18	11	5	15	0.6
473	0.047	13	11	5	10	0.6
473	0.047	18	11	5	15	0.6
563	0.056	13	11	5	10	0.6
563	0.056	18	11	5	15	0.6
683	0.068	13	11	5	10	0.6
683	0.068	18	11	5	15	0.6
823	0.082	13	12	6	10	0.6
823	0.082	18	12	6	15	0.8
104	0.1	13	12	6	10	0.6
104	0.1	18	11	5	15	0.6
104	0.1	18	12	6	15	0.8



2020.08.01 VERSION I



岱恩電子工業股份有限公司

DAIN ELECTRONICS CO., LTD.

CODE	MFD	250/275VAC/310VAC				
		W±0.5	H±0.5	T±0.5	P±0.5	D±0.05
124	0.12	18	12	6	15	0.8
154	0.15	13	12	6	10	0.6
154	0.15	18	13	6.2	15	0.8
154	0.15	18	14.5	8.5	15	0.8
184	0.18	18	14.5	8.5	15	0.8
224	0.22	13	12	6	10	0.6
224	0.22	18	14.5	8.5	15	0.8
224	0.22	18	13	6.2	15	0.8
224	0.22	26.5	16.5	7	22.5	0.8
274	0.27	26.5	17	8.5	22.5	0.8
334	0.33	18	14.5	8.5	15	0.8
334	0.33	18	16	10	15	0.8
334	0.33	26.5	17	8.5	22.5	0.8
394	0.39	26.5	19	10	22.5	0.8
474	0.47	18	16	10	15	0.8
474	0.47	26.5	17	8.5	22.5	0.8
474	0.47	26.5	19	10	22.5	0.8
564	0.56	32	20	11	27.5	0.8
684	0.68	18	18.5	11	15	0.8
684	0.68	26.5	19	10	22.5	0.8
684	0.68	32	20	11	27.5	0.8
105	1	32	20	11	27.5	0.8
105	1	32	22	13	27.5	0.8
105	1	17.3	19.2	11.2	15	0.8



2020.08.01 VERSION I