Datasheet of Film Capacitor W42

Customer	

WEIDY PART NO	Product specification	CUSTOMER'S PART NO.
W42Q3104KM8L00A0W1	MKP-310VAC-104K-P15	

Seller	
Approval	深圳市维迪实业发展有限公司 工程部 承认书专用章
Date	3/26/2025
Ratify	Haiyong Chen
Audit	Bin Zhao
Maker	Lili Li

Buyer	
Approval	
Date	
Ratify	
Title	
Remark	Pls send copy to us after approval

Company Information

Company name：Shenzhen Weidy Industrial Development Co.,Ltd
Company Address： 5/F, New Asia Electonic Town, Zhenzhong Rd, Futian, Shenzhen, Guangdong, China.
TEL:0755-82811688 FAX: 0755-82812688 http://www.weidy.net
Factory Address：No8,Songyin Rd., Pingshan Community, Tangxia

Resume of change record for datasheet

NO	Updated Date（Y/M/D）	Updated version	Updated content	Audit
1	3/26/2025	A/1	As-built	Bin Zhao

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Product Dimensions （unit：mm）

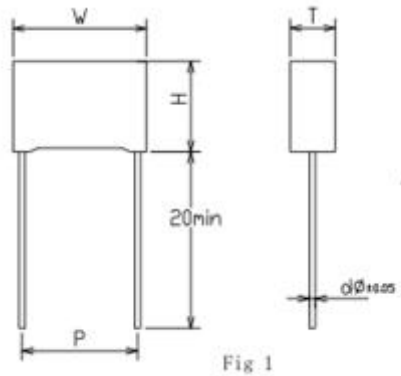


Fig 1

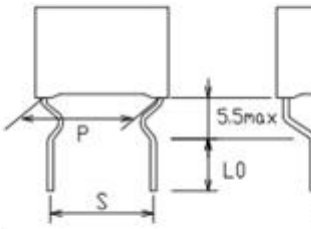


Fig 2

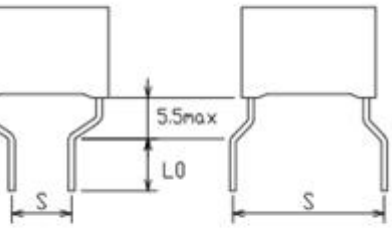


Fig 3

Fig 4

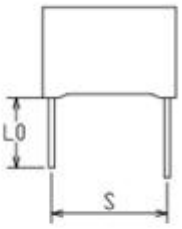


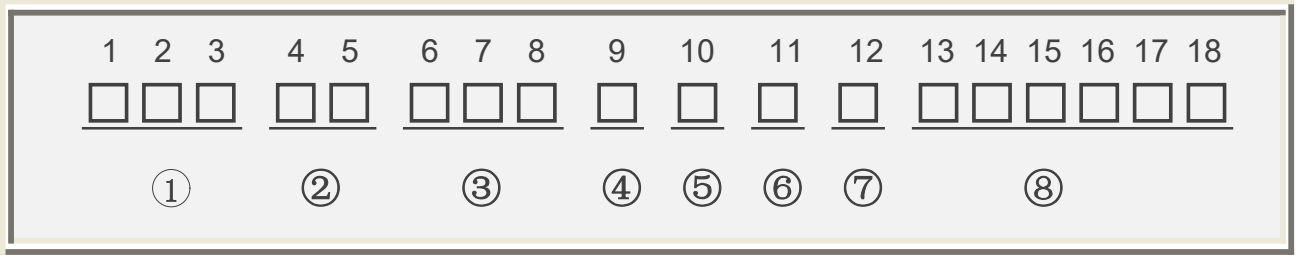
Fig 5

WEIDY PART NO	CAP uF	R.V VAC	W ±0.5	H ±0.5	T ±0.5	P ±0.5	S ±0.5	dφ	L0 ±0.5	Fig
W42Q3104KM8L00A0W1	0.1	310	18.0	12.0	6.0	15.0	/	0.8	/	1

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✧ Part number system

For example:



① Series code(Digit 1 to 3)

Series	CH11	CL11	CBB11	CBB13	CBB81	CBB81B	WDQB	WDQC	PSR	CL20T	CL21	CL21X
Code	W10	W11	W12	W13	W14	W15	W16	W17	W18	W20	W21	W22
Series	CL21B	CL23B	CL25	CL20A	CBB20T	CBB21	CBB21B	CBB20A	MKP25	CBB22	MKPRS	MKPE(X2(E)
Code	W23	W24	W25	W26	W30	W31	W32	W33	W38	W36	W40	W41
Series	MKP(X2)	MKP63(Y2)	MKP64(X1)	MKP65(X1/440V)	MKP66(X1/760V)	CL21B(E)	CBB21B(E)	CBB21(E)	CLN51	CBS52	CBB60	CBB61
Code	W42	W43	W44	W45	W46	W47	W48	W49	W51	W52	W60	W61
Series	CBB65	CBB71	CBB72	MMKP82	MMKP84	CLN21	C92	CBB13B	CBB62	RCP	CBB28	CL21(E)
Code	W65	W71	W72	W82	W84	W91	W92	W19	W62	W39	W28	W50
Series	CBB22(E)	X1Y2	CL21S	CBB21S	MKP23	MKPR						
Code	W53	W54	W27	W37	W29	W63						

② Rated Voltage(Digit 4~5)（Remark：number and then letter indicate DC, letter and then number indicate AC）

	A	B	C	D	E	F	G	H	J	K	L	M	N
1			16V	20V	25V			50V	63V	80V			
2	100V	125V	160V	200V	250V		400V	500V	630V	800V	230V	120V	150V
3	1000V	1250V	1600V	2000V	2500V	3000V	4000V			850V		1200V	1500V
	P	Q	R	S	T	U	V	W	X	Y			
1	240V	300V	330V	440V	540V	600V	700V	1100V	900V				
2	275V	305V	350V	450V	550V	690V	760V	1300V					
3	280V	310V		480V	520V			1700V					

③ Rated capacitance value(Digit 6 to 8)

According to JIS

101=10x10^{1} pF=0.1nF 102=10x10^{2} pF=1.0nF= 0.001uF 103=10x10 ^{3}pF=10nF=0.01uF

104=10x10^{4} pF=100nF=0.1uF 105=10x10^{5} pF=1000nF=1uF 106=10x10^{6} pF=10000nF=10Uf

107 =100uF 108 =1000uF 109 =10000uF

④ Capacitance tolerance（Digit 9）

Tolerance	± 1%	± 2%	± 3%	± 5%	± 10%	± 15%	± 20%	0~+10%	0~-10%		
Code	F	G	H	J	K	L	M	T	P		

⑤ Pitch/ Length of Axial products（Digit 10）

Pitch	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5	10.0	12.5	15.0	20.0
Code	A	B	C	D	E	F	G	H	J	K	L	M	N
Pitch	22.0	22.5	25.0	27.0	27.5	30.0	31.0	32	37	26	8		
Code	P	Q	R	S	T	U	V	W	X	Y	1		
Pitch	15	19	21	27	32	37	42	46	24	50	56		
Code	1	2	3	4	5	6	7	8	9	A	B		

*When the products are axial products, it stands for the length of the products

⑥ Lead（Digit 11）

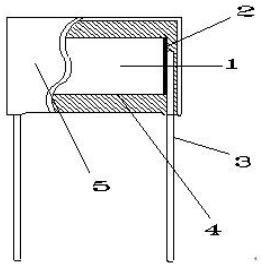
Lead	CP 0.5	CP 0.6	CP 0.7	CP 0.8	CU 1.0	CU 0.8	CU 0.7	CU 1.2	CP 1.0		
code	5	6	7	8	1	9	4	A	C		

⑦ Package type and code of Lead Configuration(Digit 12)

Code	Remarks
S	Straight leads, lead Cut (L≤8mm)
M	Straight leads, lead Cut (20mm>L>8mm)
L	Straight leads, lead Cut (L≥20mm)
W	Leads bent into 90 Degree
K	Forming lead(tolerance of lead length±0.5mm)
Y	Forming lead(tolerance of lead length±0.3mm)
T	Taping packing

⑧ Internal use（ Digit 13～18）

✧ Features

Product name	**Metallized Polypropylene Film Interference Suppression Capacitor (Class X2)**
Reference Standard	GB/T 2693 (IEC 60384-1) GB/T 6346 (IEC 60384-14)
Construction	 1. Metallized polypropylene film 2. Metal spray 3. Lead wire 4. （UL94V-0）Flame retardant Epoxy resin coating 5. （UL94V-0）Flame retardant plastic box
Atmospheric conditions IEC 68-1	Standard atmospheric conditions （IEC 68-1-5.3） Temperature ： 15℃～35℃ Humidity： 25%～75% Air pressure： 86KPa～106KPa Base condition: （IEC 68-1-5.1） Temperature：20℃ Air pressure：101.3KPa
Technology Specifications	Climatic category：40/110/56 Capacitor series： X2 Operating Temperature： -40℃～110℃ Rated Voltage： 310 VAC Capacitance Range： 0.001μF ~ 10.0μF Capacitance Tolerance： ±10% （K） Voltage Proof： Between two leads 1400VDC(5S) Voltage Applied Speed：100V/S; Cut off current：10mA Between Terminals to Case： 2120VAC Dissipation Factor：0.0010μF≤C_R≤1.0μF ≤0.15% (1kHz,20℃) 1.0μF<C_R≤10μF ≤0.3% (1kHz,20℃) Insulation Resistance： ≥15000MΩ ； C_R≤0.33μF ≥5000S； C_R>0.33μF （20℃，100V,1min）
Terminal Strength IEC 68-2-21 GB 14472-4.3	Tension Dia.（mm） Tension 0.3<d≤0.5 5N 0.5<d≤0.8 10N 0.8<d≤1.25 20N Bend Dia.（mm） Tension 0.3<d≤0.5 2.5N 0.5<d≤0.8 5N 0.8<d≤1.25 10N Time duration：10±1Sec. Bending for twice in two direction After above test, no visible damage.

Solder ability IEC 68-2-20	Soldering temperature：235℃±5℃ Immersion duration：2.0s±0.5s Good Tinning		
Soldering heat IEC 68-2-20 GB 14472-4.4	Soldering temperature：260℃±5℃ Immersion duration：10s±1s Dip depth from the mounting surface 2+0/-0.5mm, using the thickness of 1.5mm ± 0.5mm insulation shielding plate Capacitance change：Δ C/C ：≤ ± 5%		
Temperature Cycling IEC 68-2-14	Temperature: θ A = -40℃； θ B = +110℃ Time duration：30min ； Cycling times: five times Capacitance change：Δ C/C : ≤ ± 5%		
Vibration IEC 68-2-6	Frequency：10～500Hz Time and direction: Each of the three directions for two hours, total duration about 6 hours Amplitude 0.75mm Or acceleration 98m/s^2（Taking the severity of lower） No visible damage and deterioration in appearance		
Bump IEC 68-2-29	Bump times：4000 Acceleration： 390m/s^2 Pulse duration：6ms No visible damage and deterioration in appearance		
Climatic Sequence	Dry heat IEC 68-2-2	Temperature：+110℃ Time duration：16hours	Final measurement No breakdown or flashover； No visible damage and deterioration in appearance and the marking shall be legible Capacitance change：Δ C/C : ≤ ± 5% DF change：C_R≤1.0 μF Δtan δ : ≤ 0.8% C_R＞1.0 μF Δtan δ : ≤ 0.5% at 1 KHZ . Insulation Resistance ≥ 50% of the value before test
	Damp heat cycle	Test Db, Severity b, the first cycle	
	Cold IEC 68-2-1	Temperature：-40℃ Time duration：2hrs	
	Low Air pressure IEC 68-2-13	Temperature：15℃—35℃ Air Pressure：8.5KPa Time duration：1hr （apply U_R at the last 1 minute.	
	Damp heat cycle IEC 68-2-30	Test Db, Severity b, the other cycles, apply U_R for 1minute after the test finished.	

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Damp Heat Test IEC 68-2-3	Temperature：40℃±2℃ Humidity：93 +2/-3 % Time Duration：56days No visible damage and deterioration in appearance and the marking shall be legible Capacitance change：Δ C/C : ≤ ± 5% DF Change:：$C_R \leqslant 1.0\ \mu F$ Δtan δ : ≤ 0.8% at 1 KHZ $C_R > 1.0\ \mu F$ Δtan δ : ≤ 0.5% at 1 KHZ Insulation Resistance： ⩾ 50% of the value before test
Impulse Voltage	Voltage Setting：$C_R \leqslant 1.0\ \mu F$ UP = DC 2.5KV $C_R > 1.0\ \mu F$ UP = DC $2.5/\sqrt{C_R}$ KV Each capacitor applies same polar pulse for 24 times. The time interval between pulses should be less than 10s. The peak of pulse voltage is showed as above. If monitor reflects three continuous pulse waves which refer to self-healing breakup does not occur, we can stop applying pulse. The capacitor proves well. If there is no self-healing breakup for three times or more after capacitor is applied pulse for 24 times, the capacitor also proves well. But if the rated pulse wave occurs less than 3 times, the capacitor proves invalid. If wave occurs damped vibration, the peak value Upp should be less than 10% of peak pulse voltage. The capacitor should be no permanent breakup and flashover.
Durability	Temperature：+110℃ Voltage：$1.25U_R$(50Hz) Duration: 1000hrs, the voltage will be arise to 1000V (effective value) at intervals of 1 hour, duration 0.1s. The voltage should be applied to each capacitor though 47Ω ±5% resistance. No visible damage and deterioration in appearance and the marking shall be legible Capacitance change：Δ C/C : ≤ ± 10% DF change：$C_R \leqslant 1.0\ \mu F$ Δtan δ : ≤ 0.8% at 1 KHZ $C_R > 1.0\ \mu F$ Δtan δ : ≤ 0.5% at 1 KHZ Insulation Resistance: ⩾50% of the value before test
Charging & Discharging	Charging Times：10000times Charging Voltage：$\sqrt{2}$UR Vd.c. Charging time：0.5s Discharging time：0.5s Charging resistance：$220/C_R\ \Omega$ or limit charging current on 1A C_R: rated capacitance（μF） Discharging resistance：$R = \frac{\sqrt{2}U_R}{C_R \times \frac{dU}{dt}}(\Omega)$ dU/dt(V/us) : 100V/μs Capacitance change：Δ C/C : ≤ ± 10% DF change：$C_R \leq 1\mu F$: ≤0.8% (10kHz) $C_R > 1\mu F$: ≤0.5% (1kHz) Insulation Resistance: ⩾50% of the value before test

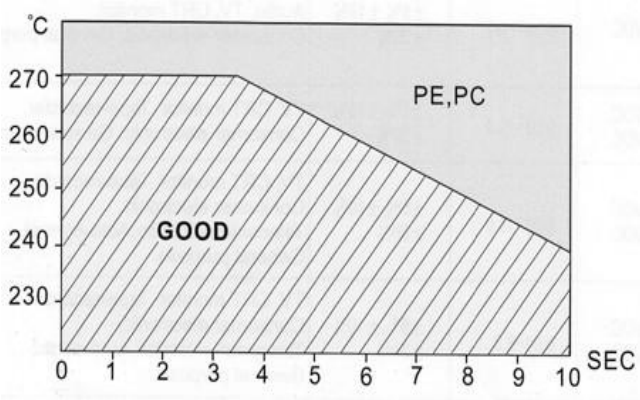
Flame Resistance Test	Flame Resistance Class: B Flame Applying Times: 1 time Flame Applying Time: 250<V(mm^3)≤500 20s 500<V(mm^3)≤1750 30s V(mm^3)>1750 60s Burning time for rest flame: 10s Burn dropping or dropped hot part can not fire face tissues. No requirement of charge measurement.
Pyrophorisity Test	$U=U_R$ $Ui=2.5kV^{+7}_{0}$ % Each sample should bear one storage capacitor for 20 times. Discharging storage charge for tested capacitor to Ui voltage. The interval between discharging should be 5S. During the test, U is applied on two terminal of capacitor and keep for 2 min at the last discharge unless melting fuse make the circuit open. Gauze which wind on capacitor should be not burned by flame. No requirement of current measurement.

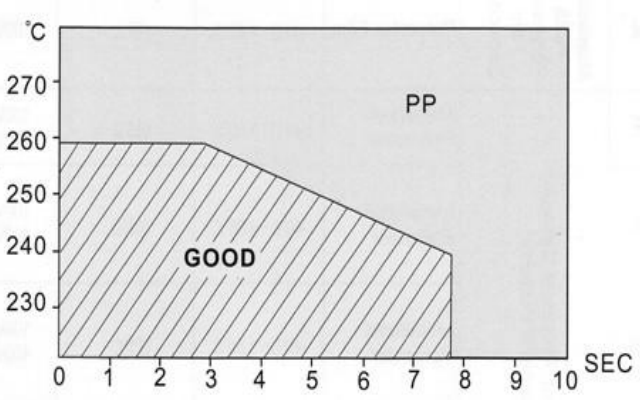
✧ Security certification

Mark	Specification	File No.
CQC	IEC 60384-14:2013 GB/T6346	CQC14001119697
EN 10 DVE	IEC 60384-14:2013	40041066
c UL us	UL 60384-14:2009 CSA E60384-14:09	E334332
KC	KC 60384-14(2015-09) KC 60384-1(2015-09)	SU03089-16001A SU03089-16002A SU03089-16003A
CB	IEC 603847-14(ed.4)	DE1-62887

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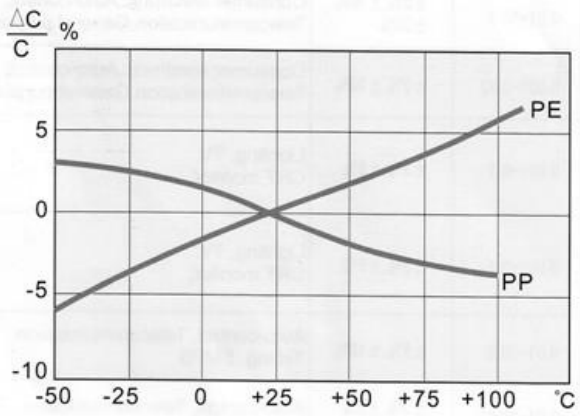
✧ Soldering Temperature VS Time

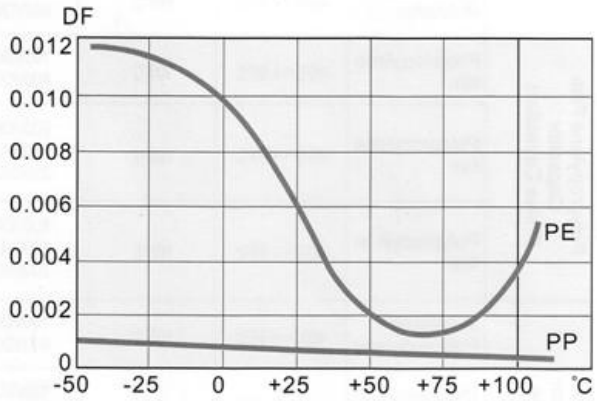


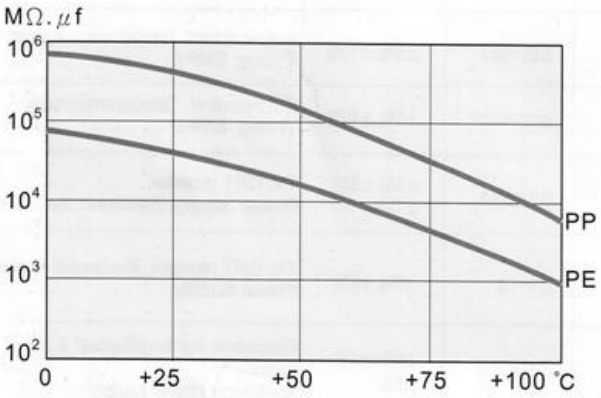


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✧ Temperature Characteristics



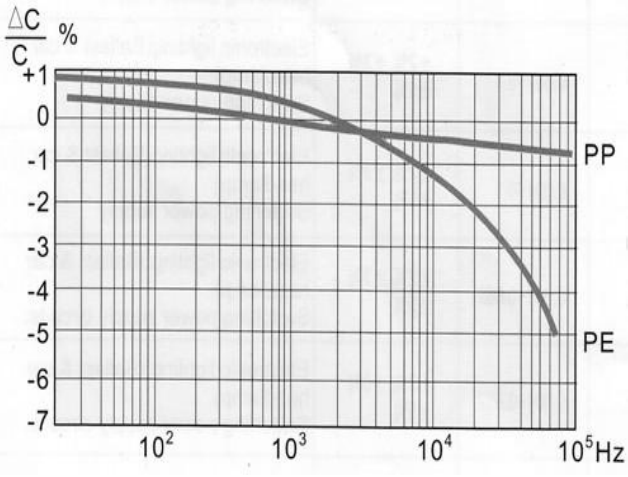


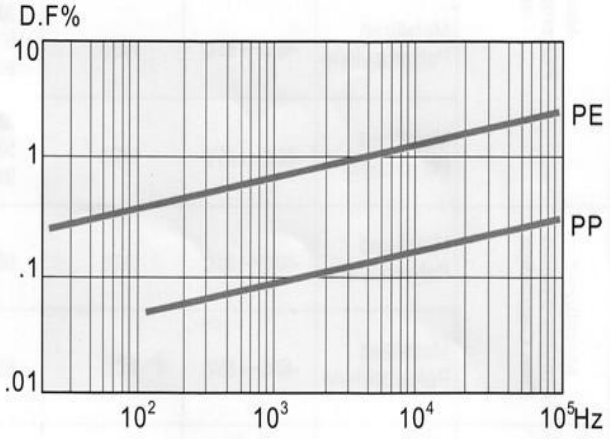


PP：聚丙烯薄膜（Polypropylene Film）

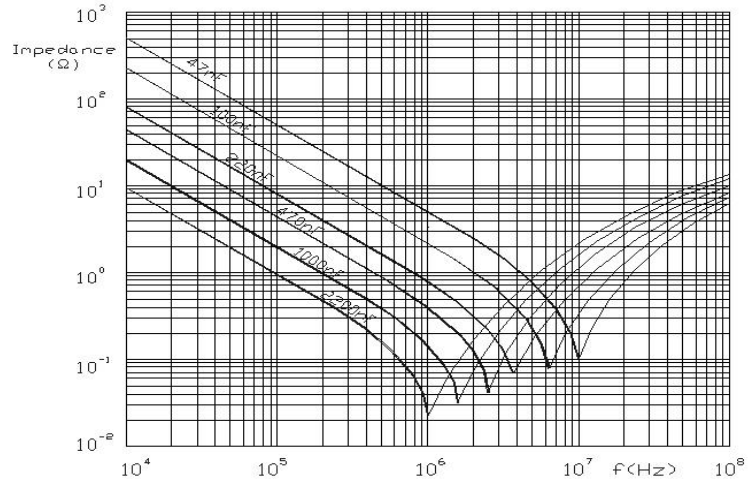
PE：聚酯薄膜（Polyester Film）

✧ Frequency Characteristics

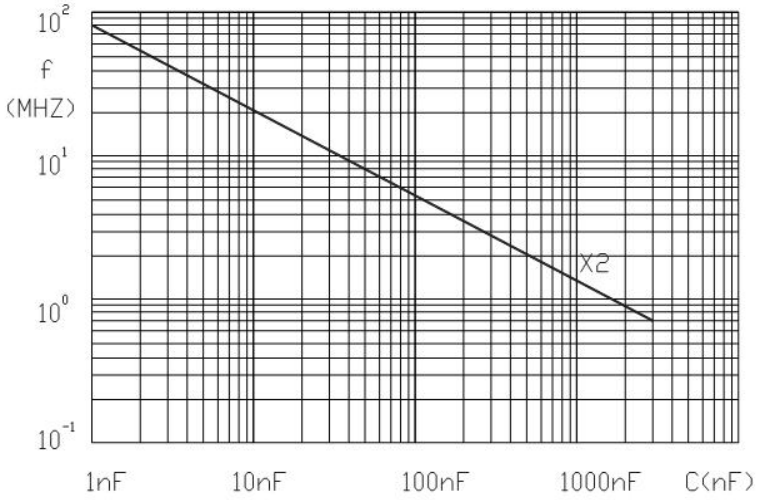




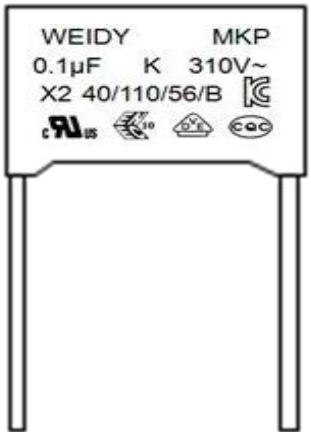
✧ Impedance and frequency curve



✧ Resonance Frequency and Capacitance Curve



✧ Marking Specification



Content	Description	Content	Description
WEIDY	Logo	40/110/56	Climate Catagory
MKP	Type		ENEN-VDE Approval
0.1μF	Capacitance		CQC approval
K	Capacitance Tolerance		UL, CUL Approval
X2	Serise	B	Flame Resistance Class
310V~	Rated Voltage		KC approval

✧Taping Drawing&Dimensions

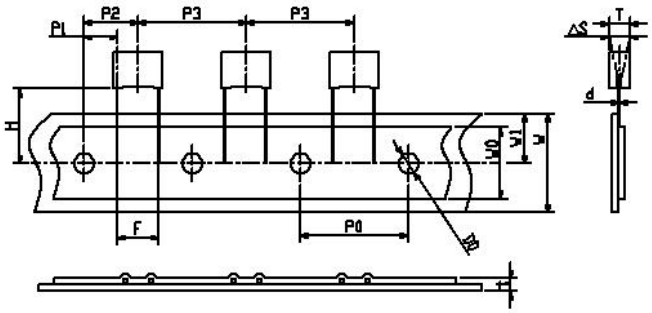


Fig.1

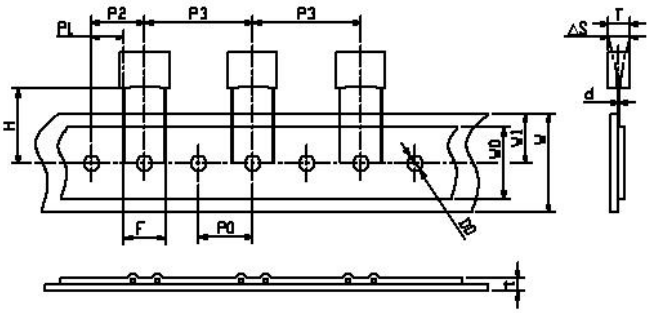
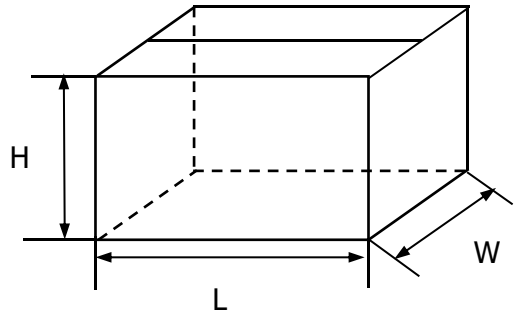


Fig.2

Technique Data	Code	Size（mm）					Technique Data	Code	Size（mm）				
		P=5	P=7.5	P=10	P=15	Tolerance			P=5	P=7.5	P=10	P=15	Tolerance
Taping Type		Fig1	Fig1	Fig2	Fig2		Taping Type		Fig1	Fig1	Fig2	Fig2	
Section distance	P3	12.7	12.7	25.4	25.4	±1.0	Tape width	W	18.0	18.0	18.0	18.0	±0.5
Distance between two hole	P0	12.7	12.7	12.7	12.7	±0.3	Jack position	W1	9.0	9.0	9.0	9.0	±0.5
Leads position	P1	3.85	2.6	7.7	5.2	±0.7	Bending height	H0	16	16	16	16	±0.5
Pitch for forming type	F	5.0	7.5	10.0	15.0	±0.5	Taping Height	H	18.5	18.5	18.5	18.5	±0.5
Body position	P2	6.35	6.35	12.7	12.7	±1.3	Dia of hole	D0	4.0	4.0	4.0	4.0	±0.3
Product Inclination	ΔS	0	0	0	0	±0.2	Taping thickiness	t	0.7	0.7	0.7	0.7	±0.2

✧ Carton Size

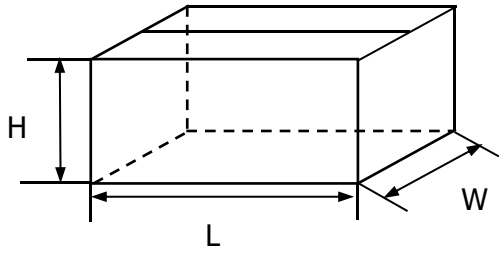


Out packing box for bulk

L: 480mm

W: 320mm

H: 280mm

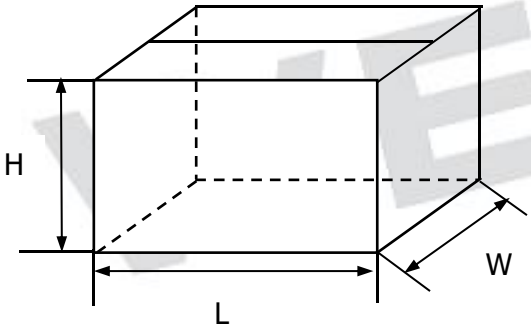


Inner packing box for bulk

L: 280mm

W: 225mm

H: 120mm

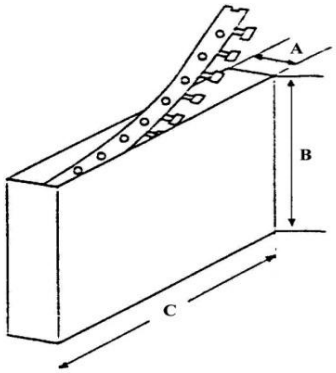


Out packaging box for taping

L: 640mm

W: 360mm

H: 290mm



Inner packing box for ammo-pack

A: 50mm

B: 320mm

C: 330mm