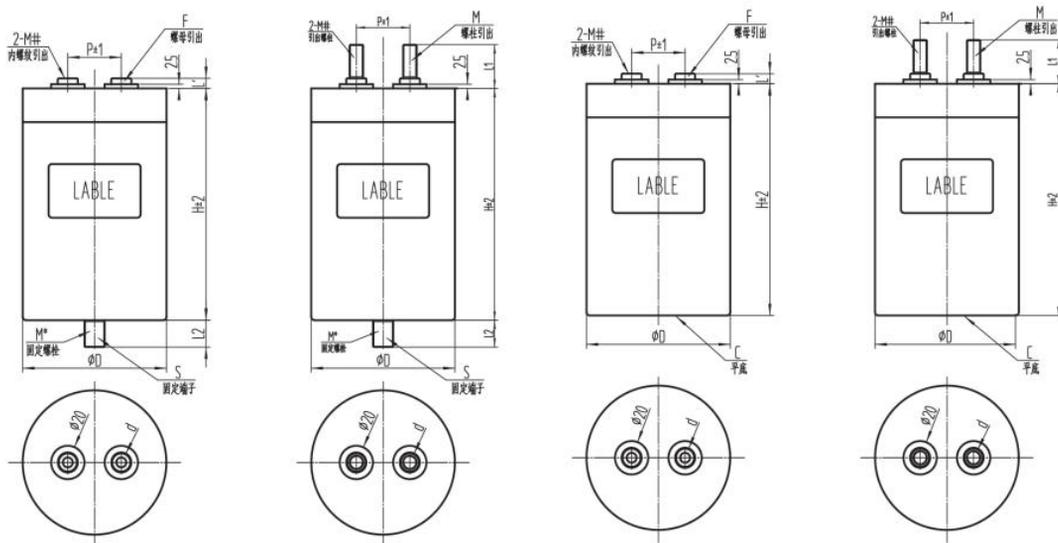




■ MKP-LD1 铝壳式--DC-link薄膜电容器

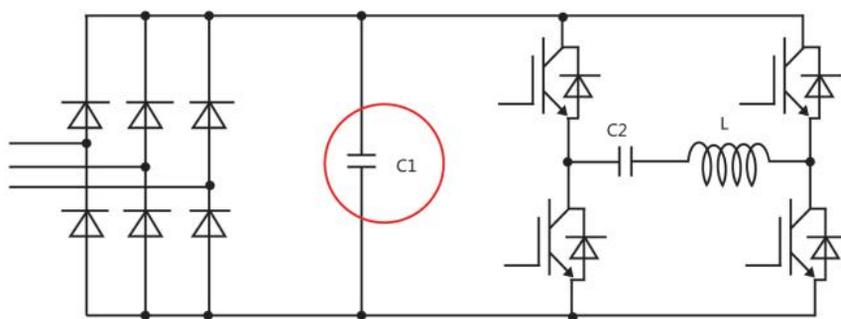
<p>一般技术特征 General technical characteristics</p> <ul style="list-style-type: none"> ◆ 执行标准:IEC 61071 ◆ 绝缘介质:聚丙烯薄膜 ◆ 结构:干式、阻燃树脂灌封、金属化薄膜无感卷绕、自愈特性 ◆ 外壳:铝质外壳(底部带/不带固定端子) ◆ 引出端子:内嵌螺母或螺柱出线 ◆ Execution standard:IEC 61071 ◆ Insulating medium: Polyethylene film ◆ Structure:Dry construction, flame-retardant resin potting, non-inductive winding metallized film, self-healing properties ◆ Shell:Aluminum shell (with/without fixed at the bottom of the terminal) ◆ Lead terminal: Embedded nuts or nut outlet 	<p>电气参数 Electrical parameters</p> <ul style="list-style-type: none"> ◆ 额定电容 CN: 80 ~ 3000 μF ◆ 额定电压 UN: 600 ~ 2600 V DC ◆ 电容偏差 ΔC: $\pm 5\%$、$\pm 10\%$ ◆ 损耗因数 $\tan \delta$: $\leq 2 \times 10^{-3}$ (100Hz) ◆ 预期寿命: 100,000 h (额定电压, 热点温度不超过 70°C 工况条件下) ◆ Rated capacitance CN: 80 ~ 3000 μF ◆ Rated Voltage UN: 600 ~ 2600 V DC ◆ Capacitance Tolerance ΔC: $\pm 5\%$、$\pm 10\%$ ◆ Loss factor $\tan \delta$: $\leq 2 \times 10^{-3}$ (100Hz) ◆ Life expectancy: 100,000 h (working condition of rated voltage, the hot spot $\leq 70^\circ\text{C}$)
<p>使用环境 Operational environment</p> <ul style="list-style-type: none"> ◆ 海拔:≤ 2000 米 ◆ 相对湿度:$\leq 93\%$ ◆ 运行温度:$-40^\circ\text{C} \sim +70^\circ\text{C}$ ◆ 贮存温度:$-40^\circ\text{C} \sim +85^\circ\text{C}$ ◆ Altitude:≤ 2000 m ◆ Relative humidity:$\leq 93\%$ ◆ Operating temperature:$-40^\circ\text{C} \sim +70^\circ\text{C}$ ◆ Storage temperature:$-40^\circ\text{C} \sim +85^\circ\text{C}$ 	<p>技术优势 Technology advantage</p> <ul style="list-style-type: none"> ◆ 更低损耗; ◆ 更低的 ESR 和更低的 ESL; ◆ 更高的通流能力; ◆ 更强的耐涌流能力; ◆ 更好的频率响应特性; ◆ 极小的电容温度系数; ◆ 优良的弱点自恢复特性; ◆ 非 PCB 环保材料; ◆ 超常使用寿命 ◆ Lower loss; ◆ Lower ESR and Lower ESL; ◆ Higher flow capacity; ◆ Stronger resistance to inrush current capacity; ◆ Excellent frequency response characteristic; ◆ Extremely small temperature coefficient of capacitance; ◆ Excellent weakness of self-recovery characteristics; ◆ Non PCB; ◆ long operating life
<p>过载能力 Overload capacity</p> <ul style="list-style-type: none"> ◆ 1.1UN, 有负荷时间的 30%, 系统调整; ◆ 1.15UN, 30min, 系统调整; ◆ 1.2UN, 5min, 系统调整; ◆ 1.3UN, 1min, 系统调整; ◆ 1.5UN, 30ms, 整个寿命期内不超过 1000 次。 ◆ 1.1UN, 30% of load time, System adjustment; ◆ 1.15UN, 30min, System adjustment; ◆ 1.2UN, 5min, System adjustment; ◆ 1.3UN, 1min, System adjustment; ◆ 1.5UN, 30ms, throught out the life no more than 1000 times 	<p>试验方法 Test method</p> <ul style="list-style-type: none"> ◆ 端子间测试电压: 1.5UN DC, 10s ◆ 端子与外壳间测试电压: (1.5UN+1000)V AC/最低 3000V AC, 10s ◆ Test voltage between terminals: 1.5UN DC, 10s ◆ Test voltage between terminal and shell: (1.5UN+1000)V AC/Minimum 3000V AC, 10s

● 外形示意图 Outline drawing



产品直径 Product diameter (mm)	引出端子 Lead terminal						固定端子 Fixed terminal		
	F	M	扭矩 Max Torque	P	D	L'	S	扭矩 Max Torque	C
D=76,86	M6 × 10 i	M8 × 20	4.5 N*m	32	16	5	M12	10 N*m	/
D=116	M6 × 10 i	M8 × 20	4.5 N*m	50	15	5	M12	10 N*m	/

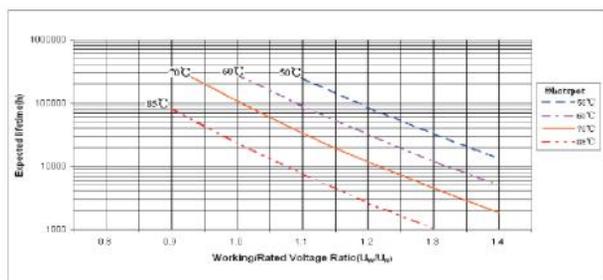
● 典型线路图 Typical circuit



C1 : DC-LINK电容

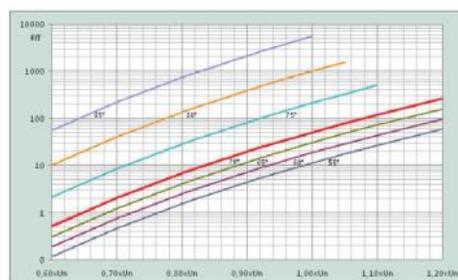
● 产品特性曲线 Product characteristic curve

电容器预期寿命曲线
Life expectancy curve



失效率与温度和电压的关系曲线

FIT-RATE versus temperature and voltage



★ 根据客户要求，我们可以专门为客户量身设计，生产各种电压等级、容量规格、尺寸要求的薄膜电容器。

Based on customer demand, we could design specifically for customers, product a variety film capacitors with voltage, capacities and different size film capacitors.

● 产品参数 Product parameters

U _s (V DC)	C _s (μF)	I _{max} (A)	I _{pk} (A)	I _s (kA)	R _s (mΩ)	L _{eq,if} (nH)	D×H (mm)	H _T =H+L' (mm)	Weight (kg)
600	480	50	2880	12.0	1.6	≤55	76×95	100	0.60
	650	60	3900	16.3	1.4	≤55	86×95	100	0.73
	820	50	4920	20.5	2.3	≤60	76×140	145	0.80
	880	60	5280	22.0	1.8	≤60	86×120	125	0.90
	950	65	5700	23.8	1.5	≤60	76×175	180	1.00
	1000	65	6000	25.0	1.9	≤60	86×135	140	0.98
	1100	65	6600	27.5	1.9	≤60	86×140	145	1.03
	1200	68	7200	30.0	1.1	≤55	116×95	100	1.30
	1600	70	8000	40.0	1.3	≤60	116×120	125	1.55
	2000	72	10000	50.0	1.4	≤60	116×140	145	1.80
	2400	75	14400	60.0	1.1	≤60	116×175	180	2.20
3000	80	18000	75.0	1.3	≤65	116×230	235	2.85	
700	360	40	2160	9.0	1.8	≤55	76×95	100	0.60
	480	42	2880	12.0	2.4	≤60	76×120	125	0.73
	600	45	3600	15.0	2.5	≤60	76×140	145	0.83
	650	55	3900	16.3	2.0	≤60	86×120	125	0.90
	720	60	4320	18.0	1.5	≤60	76×175	180	1.00
	750	60	4500	18.0	2.0	≤60	86×135	140	0.98
	780	60	4680	19.5	2.2	≤60	86×140	145	1.03
	820	60	4920	20.5	2.1	≤60	86×155	160	1.15
	920	65	5520	23.0	1.1	≤55	116×95	100	1.30
	950	68	5700	23.8	1.3	≤60	86×175	180	1.25
	1200	70	7200	30.0	1.4	≤60	116×120	125	1.55
	1500	72	9000	37.5	1.5	≤60	116×140	145	1.80
	1800	75	10800	45.0	1.1	≤60	116×175	180	2.20
2300	80	13800	57.5	1.3	≤65	116×230	235	2.85	
800	290	40	1740	7.3	1.9	≤55	76×95	100	0.60
	380	50	2280	9.5	1.6	≤55	86×95	100	0.73
	400	40	2400	10.0	2.5	≤60	76×120	125	0.70
	480	42	2880	12.0	2.8	≤60	76×140	145	0.83
	520	50	3120	13.0	2.1	≤60	86×120	125	0.90
	560	60	3360	14.0	1.5	≤60	76×175	180	1.00
	580	50	3480	14.5	2.1	≤60	86×135	140	0.98
	630	50	3780	15.8	2.3	≤60	86×140	145	1.03
	720	65	4320	18.0	1.2	≤55	116×95	100	1.30
	750	65	4500	18.8	1.4	≤60	86×175	180	1.25
	980	68	5880	24.5	1.5	≤60	116×120	125	1.55
	1200	70	7200	30.0	1.6	≤60	116×140	145	1.80

● 产品参数 Product parameters

U_N (V DC)	C_N (μF)	I_{max} (A)	\hat{I}_{pk} (A)	\hat{I}_s (kA)	R_v ($m\Omega$)	L_{ovr} (nH)	D×H (mm)	$H_t=H+L'$ (mm)	Weight (kg)
800	1500	75	9000	37.5	1.1	≤ 60	116×175	180	2.20
	2000	80	12000	50.0	1.3	≤ 65	116×230	235	2.80
900	350	50	2100	8.8	1.6	≤ 55	86×95	100	0.73
	400	45	2400	10.0	2.5	≤ 60	76×120	125	0.70
	480	50	2880	12.0	2.2	≤ 60	86×120	125	0.90
	510	50	3060	13.0	2.1	≤ 60	86×120	125	0.90
	560	52	3360	14.0	2.2	≤ 60	86×135	140	0.98
	650	55	3900	16.3	2.3	≤ 60	86×155	160	1.15
	700	60	4200	17.5	1.2	≤ 55	116×95	100	1.30
	750	65	4500	18.8	1.4	≤ 60	86×175	180	1.25
	970	68	5820	24.3	1.5	≤ 60	116×120	125	1.55
	1100	70	6600	27.5	1.6	≤ 60	116×140	145	1.80
	1400	75	8400	35.0	1.1	≤ 60	116×175	180	2.20
	1900	80	11400	45.0	1.4	≤ 65	116×230	235	2.85
1000	220	35	1320	5.5	2.1	≤ 55	76×95	100	0.60
	300	35	1800	7.5	2.8	≤ 60	76×120	125	0.73
	360	35	2160	9.0	3.2	≤ 60	76×140	145	0.83
	400	45	3200	10.0	2.3	≤ 60	86×120	125	0.90
	420	60	2500	10.5	1.7	≤ 60	76×175	180	1.00
	480	45	2880	12.0	2.5	≤ 60	86×140	145	1.03
	540	65	3240	13.5	1.3	≤ 55	116×95	100	1.30
	560	65	3360	14.0	1.5	≤ 60	86×175	180	1.25
	740	65	4440	18.5	1.6	≤ 60	116×120	125	1.55
	900	68	5400	22.5	1.7	≤ 60	116×140	145	1.80
	1100	75	6600	27.5	1.2	≤ 60	116×175	180	2.20
	1500	80	9000	37.5	1.4	≤ 65	116×230	235	2.85
	1100	180	35	1080	4.5	2.2	≤ 55	76×95	100
250		35	1500	6.3	2.9	≤ 60	76×120	125	0.73
300		40	1800	7.5	3.3	≤ 60	76×140	145	0.83
360		55	2160	9.0	1.7	≤ 60	76×175	180	1.00
400		45	2400	10.0	2.4	≤ 60	86×135	140	0.98
420		55	2500	10.5	2.4	≤ 60	86×138	143	1.00
420		65	2520	10.5	1.5	≤ 60	86×155	160	1.15
450		65	2700	11.3	1.4	≤ 55	116×95	100	1.30
500		65	3000	12.5	1.5	≤ 60	86×175	180	1.25
620		65	3720	15.5	1.7	≤ 60	116×120	125	1.55
750		65	4500	18.8	1.9	≤ 60	116×140	145	1.80
920		70	5520	23.0	1.2	≤ 60	116×175	180	2.20

● 产品参数 Product parameters

U_N (V DC)	C_N (μF)	I_{max} (A)	\hat{I}_{pk} (A)	\hat{I}_s (kA)	R_s (m Ω)	L_{total} (nH)	D×H (mm)	H _r =H+L' (mm)	Weight (kg)
1100	1100	80	6600	27.5	1.5	≤65	116×230	235	2.85
1200	140	35	840	3.5	2.5	≤55	76×95	100	0.60
	190	40	1140	4.8	2.1	≤55	86×95	100	0.73
	200	35	1200	5.0	3.3	≤60	76×120	125	0.73
	240	35	1440	6.0	3.7	≤60	76×140	145	0.83
	260	40	1560	6.5	2.7	≤60	86×120	125	0.90
	320	40	1920	8.0	2.8	≤60	86×135	140	0.98
	330	40	1980	8.3	2.9	≤60	86×140	145	1.00
	360	60	2160	9.0	1.4	≤55	116×95	100	1.30
	400	65	2400	10.0	1.4	≤55	116×95	100	1.25
	470	65	2820	11.8	2.0	≤65	86×225	230	1.55
	500	65	3000	12.5	1.8	≤60	116×120	125	1.55
	600	65	3600	15.0	2.0	≤60	116×140	145	1.80
	720	70	4320	18.0	1.3	≤60	116×175	180	2.20
	950	80	5700	23.8	1.5	≤65	116×230	235	2.85
1300	120	30	720	3.0	2.7	≤55	76×95	100	0.60
	170	40	1020	4.3	2.1	≤55	86×95	100	0.73
	180	30	1080	4.5	3.4	≤60	76×120	125	0.70
	210	30	1260	5.3	3.8	≤60	76×140	145	0.83
	230	40	1380	5.8	2.8	≤60	86×120	125	0.90
	240	50	1440	6.0	2.0	≤60	76×175	180	1.00
	260	40	1560	6.5	2.9	≤60	86×135	140	0.98
	270	40	1620	6.8	3.2	≤60	86×140	145	1.00
	320	60	1920	8.0	1.5	≤55	116×95	100	1.30
	340	65	2040	8.5	1.6	≤60	86×175	180	1.25
	430	65	2580	10.8	1.9	≤60	116×120	125	1.55
	520	65	3120	13.0	2.0	≤60	116×140	145	1.80
	660	70	3960	16.5	1.3	≤60	116×175	180	2.20
	820	80	4920	20.5	1.6	≤65	116×230	235	2.85
1400	100	25	600	2.5	2.9	≤55	76×95	100	0.60
	140	35	840	3.5	2.3	≤55	86×95	125	0.73
	170	25	1020	4.3	4.3	≤60	76×140	145	0.83
	200	35	1200	5.0	2.9	≤60	86×120	125	0.90
	230	35	1380	5.8	3.1	≤60	86×135	140	0.98
	240	35	1440	6.0	3.2	≤60	86×140	145	1.00
	260	55	1560	6.5	1.6	≤55	116×95	100	1.30
	270	50	1620	6.8	1.8	≤60	86×175	180	1.25
	360	55	2160	9.0	2.0	≤60	116×120	125	1.55

● 产品参数 Product parameters

U_N (V DC)	C_N (μF)	I_{max} (A)	I_{sh} (A)	I_s (kA)	R_s ($m\Omega$)	L_{sur} (nH)	D×H (mm)	$H_T=H+L'$ (mm)	Weight (kg)
1400	400	60	2400	10.0	2.1	≤65	86×225	230	1.55
	450	60	2700	11.3	2.1	≤60	116×140	145	1.80
	540	65	3240	13.5	1.3	≤60	116×175	180	2.20
	700	75	4200	17.5	1.6	≤65	116×230	235	2.85
1500	90	25	540	2.3	3.0	≤55	76×95	100	0.60
	120	25	720	3.0	4.1	≤60	76×120	125	0.70
	150	25	900	3.8	4.4	≤60	76×140	145	0.83
	170	35	1020	4.3	3.1	≤60	86×120	125	0.90
	200	35	1200	5.0	3.2	≤60	86×135	140	0.98
	210	35	1260	5.3	3.4	≤60	86×140	145	1.00
	230	55	1380	5.8	1.6	≤55	116×95	100	1.30
	240	55	1440	6.0	1.9	≤60	86×175	180	1.25
	320	55	1920	8.0	2.0	≤60	116×120	125	1.55
	390	55	2340	9.8	2.2	≤60	116×140	145	1.80
	470	65	2820	11.8	1.4	≤60	116×175	180	2.20
	600	75	3600	15.0	1.7	≤65	116×230	235	2.85
2000	120	40	1440	6.0	2.6	≤60	86×145	150	1.05
	150	45	1800	7.5	2.9	≤60	86×175	180	1.25
	190	45	2280	9.5	4.1	≤65	86×225	230	1.60
	230	50	2760	11.5	1.9	≤60	116×145	150	1.80
	270	60	3240	13.5	2.0	≤60	116×175	180	2.20
	370	70	4440	18.5	2.6	≤65	116×230	235	2.85
2200	95	35	1140	4.8	2.8	≤60	86×145	150	1.05
	120	40	1440	6.0	3.1	≤60	86×175	180	1.25
	160	40	1920	8.0	4.4	≤65	86×225	230	1.60
	180	50	2160	9.0	1.9	≤60	116×145	150	1.80
	220	60	2640	11.0	2.1	≤60	116×175	180	2.20
	300	70	3600	15.0	2.8	≤65	116×230	235	2.85
2400	100	40	1200	5.0	3.3	≤60	86×175	180	1.25
	130	40	1560	6.5	4.8	≤65	86×225	230	1.60
	150	50	1800	7.5	2.0	≤60	116×145	150	1.80
	180	60	2160	9.0	2.3	≤60	116×175	180	2.20
	250	70	3000	12.5	3.0	≤65	116×230	235	2.85
2600	85	35	1020	4.3	3.5	≤60	86×175	180	1.25
	110	40	1320	5.5	5.1	≤65	86×225	230	1.60
	130	50	1560	6.5	2.1	≤60	116×145	150	1.80
	150	55	1800	7.5	2.4	≤60	116×175	180	2.20
	210	65	2520	10.5	3.2	≤65	116×230	235	2.85

● 订货信息表 Order information

MKP DC-FILM CAP.订货信息一览表				
序号 NO	类别 Category	技术指标 Technical indicators	客户需要参数 Customer parameters requirements	备注 Remarks
1	技术特性要求 Characteristics	额定电容 (Rated capacitance) : C_N (μ F)		
2		额定直流电压 (Rated d.c. voltage) : U_N (V)		
3		纹波电压 (Max. ripple voltage) : U_r (V)		
4		非周期冲击电压 (Non-recurrent surge voltage) : U_s (V)		
5		最大电流 (方均根值) (Max. current) : I_{max} (A)		
6		最大峰值电流 (Max. peak current) : \hat{I} (A)		
7		最大冲击电流 (Max. surge current) : \hat{I}_s (A)		
8		损耗角正切值 (Tangent of the loss angle) : $\tan\delta$		
9		电容值允许偏差 (Capacitance tolerance) : ΔC (\pm %)		
10	环境条件 Environment	环境空气温度 (Cooling-air temperature) : θ_{amb} ($^{\circ}$ C)		
11		最低运行温度 (Lowest operating temperature) : θ_{min} ($^{\circ}$ C)		
12		最高运行温度 (Highest operating temperature) : θ_{max} ($^{\circ}$ C)		
13		空气相对湿度 (Humidity) : %		
14		运行海拔条件 (Altitude) : H_{asl} (m)		
15	过负荷 Overload conditions within one day	例如 (For example) :		
16		30% of on-load duration / $1.1U_N$		
17		30min / $1.15U_N$		
18		5min / $1.2U_N$		
19		1min / $1.3U_N$		
20		100ms / $1.5U_N$		
21	尺寸要求 Dimensions	如有明确要求请标明外形&安装尺寸、引出端型式&尺寸要求(可附图) Please indicate if there is an explicitly requested of shape & installation size, terminal form & size		
22	其他关键信息 Others	如:a)直流母线传输的最大功率P、直流侧MPPT (直流电压范围)、最大直流侧电压、逆变器效率 η 、载波频率、开关频率、纹波系数、调制比m、相移角 ϕ 、交流侧额定输出电流。 b)逆变电路线路图、电压波形、电流波形等。 eg:a) Maximum transmission power of the DC bus, DC voltage range, Maximun DC voltage(P), Efficiency of the inverter, Carrier frequency, Switching frequency, Ripple factor, Modulation ratio, phase angle, rated output current of the AC side b) Inverter circuit diagram, voltage waveform, current waveform etc.		
说明: 为了让产品更可靠、更安全、更高效地运行, 一切为了您的满意, 请于订货前尽可能提供以上信息 (参数) 。 Indirection: In order to make more reliable and safer products, operation more efficiency, all for our satisfaction,please provide the above information(parameters) before ordering as much as possible.				

●重要说明 Important note

- ◆KAOUNE并不了解每一个客户对产品的应用，也不比客户更了解他们对产品的应用。因此，客户负有最终的责任，根据其整机电路参数选择适合其的KAOUNE产品，并根据KAOUNE产品参数判定其是否适用。
 - ◆我们也毫不避讳地指出，即使在正常的应用条件下无源电子元器件仍有可能在使用寿命结束前出现故障或失效。这在目前的技术水平下是无法完全排除的。因此，对于操作安全水平要求非常高的应用场合，特别是当无源电子元器件出现故障时可能会危及人身安全或健康的情况下，客户必须适当设计其应用装置或由客户采取措施（如安全保护性电路或冗余），确保在无源电子元件出现故障时，第三方不会受到伤害或损害。
 - ◆我们的工程师持续不断地致力于改善产品。因此，本出版物所述产品可能会发生变化。所以，订货之前或订货的时候请咨询我们的销售工程师本出版物的产品说明和规格在多大程度上是适用的。我们保留产品尺寸及技术参数发生变更的权利。因此，我们不保证任何时候均可购买到本出版物所列全部产品。
 - ◆由于客户的应用领域、安装尺寸、回路参数要求千差万别，对于同一电压同一容值的电容器亦是如此。因此，建议在订货前尽可能详尽地提供您所要求的信息，包括但不限于电压、容值、外形尺寸、安装尺寸及本出版物中《订货信息一览表》中所列明的项目。
 - ◆KAOUNE do not understand each client on the application of the product, nor more than customers about their products. Customers have the ultimate responsibility to select suitable KAOUNE products for their whole circuit parameters, and under KAOUNE products parameters determine its applicability.
 - ◆We also forthrightly pointed out that even in normal conditions of passive electronic components, it is still will failure or breakdown before the end of its useful life. And it cannot be completely excluded in the current level of technology. Therefore, requires a high level of operational safety applications, especially when passive electronic components failure could endanger the personal safety or health of the case, The customer must be properly designed appliance or measures taken by the customer (such as security protective circuitry or redundancy), to ensure when the failure in the passive electronic components, the third party will not harm or damage.
 - ◆KAOUNE engineers constantly committed to improve the product. Therefore, the publication of the product may change. Therefore, please consult our sales engineer before order. We reserve the right to change the product dimensions and technical parameters. Therefore, we cannot guarantee that at any time can be purchased to the publications listed all products.
 - ◆Due to the customer's applications, installation size, circuit parameters requirements vary widely, as well as the same capacitor values for the same voltage. Therefore, we suggest that provide requested information as much details as possible before order, including but not limited to voltage, capacitance, dimensions, installation size and the other parameters items of order information.
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● 敬告和警告 Warning



- ◆ 电容器经过耐电压测试后或退出运行后，其上存储的能量足以对人身造成伤害。因此，在接触电容器出线端子之前必须首先经过电阻放电、再短接引出端子，确保残存电荷泄放掉。
 - ◆ 金属化薄膜介质电容器不应过多直接短路放电。短路放电试验属于型式试验项目，做过型式试验的产品不宜再正常使用。
 - ◆ 进行耐电压测试会对其绝缘造成损害，且该损害具备累积效应。
 - ◆ 电容器与电路的连接应可靠，避免接触不良引起高频振荡造成电容器过压或过热。
 - ◆ 避免电容器暴露于强酸、强碱及其他腐蚀性介质的环境中运行。
 - ◆ 避免电容器在充满易燃易爆的气体或尘埃的环境中运行。
 - ◆ 避免外部能量传导到电容器内部，如火、热、雷电。
 - ◆ 避免电容器过温运行。
 - ◆ 避免电容器异常过载。
 - ◆ 避免核辐射。
- ◆ After resistant voltage test or out of operation, the capacitor stored energy is sufficient to cause the damage to the human. Therefore, in contact with the capacitor outlet terminals must discharge through the resistor first, and then short-circuited lead terminal, ensure that the residual charge of release.
- ◆ Metalized film dielectric capacitors should not over discharge to the short circuit. Short circuit discharge test are type of pilot projects, the test products are not appropriate to normal use.
- ◆ Excessive resistant voltage capacitor test will damage the insulation, and the damage has a cumulative effect.
- ◆ The capacitor circuit connection should be reliable, to avoid capacitor overvoltage or overheating by high-frequency oscillation because of poor contact.
- ◆ Avoid capacitor is exposed to strong acid, alkali and other corrosive medium environment operate.
- ◆ Avoid the capacitor filled with flammable and explosive gas or dust environment operate.
- ◆ Avoid external energy transmitted to the capacitor internal, such as fire, heat, electricity.
- ◆ Avoid capacitor operate over-temperature.
- ◆ Avoid capacitor abnormal overload.
- ◆ Avoid nuclear radiation.