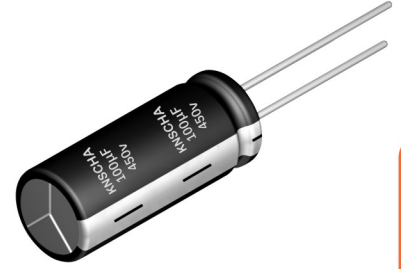


特性/ Features

- -55°C wide temperature range
- Suitable for high reliability products
- Load Life: 2000 hours at 105°C
- RoHS compliant
- -55°C 广温度范围
- 适用于高信赖性产品
- 105°C 负荷寿命 2000 小时
- 符合 RoHS 指令



ΦD < 13mm



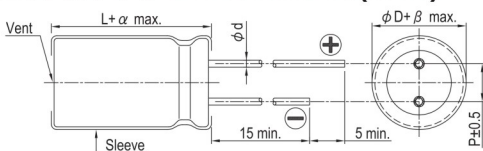
ΦD ≥ 13mm

引线型 Radial

表1 规格表 Specifications

项目 Items	性能 Performance															
工作温度范围 Category Temperature Range	6.3~100V				160~400V				450V							
	-55°C ~ +105°C				-40°C ~ +105°C				-25°C ~ +105°C							
额定静电容量容许误差值 Capacitance Tolerance	± 20% (120 Hz, 20°C)															
漏电流 Leakage Current(at 20°C)	额定电压 Rated voltage	≤100V						> 100V								
	测试时间 Time	2 分钟后 after 2 minutes						2 分钟后 after 2 minutes								
	漏电流 Leakage Current	I = 0.01CV 或 3(μA/微安) 之中任一个较大值以下 whichever is greater						I ≤ 0.03CV + 10(μA/微安)								
I = 漏电流(μA/微安)、C = 额定静电容量(μF/微法拉)、V = 额定直流工作电压(V/伏特) Where, C = rated capacitance in μF, V = rated DC working voltage in V																
损失角正切值 Tanδ (at 120 Hz, 20°C)	额定电压 Rated Voltage	6.3	10	16	25	35	50	63	100	160	200					
	损失角正切值 Tanδ (max)	0.28	0.24	0.20	0.16	0.14	0.12	0.10	0.08	0.20	0.20					
	额定电压 Rated Voltage	250	350	400	450											
	损失角正切值 Tanδ (max)	0.20	0.20	0.24	0.24											
当额定静电容量大于1,000微法拉时, 每增加1,000微法拉需加0.02。 When the capacitance exceeds 1,000μF, 0.02 shall be added every 1,000μF increase.																
温度特性(120 Hz) Low Temperature Characteristics	阻抗比不可大于下表所列数值 Impedance ratio shall not exceed the values given in the table below.															
	额定电压 Rated Voltage	6.3	10	16	25	35	50	63	100	160	200	250	350	400	450	
	阻抗比 Impedance Ratio	Z(-25°C)/Z(+20°C)	5	4	3	2	2	2	2	2	3	3	4	4	6	15
		Z(-40°C)/Z(+20°C)	10	8	6	4	3	3	3	3	5	5	5	7	7	
Z(-55°C)/Z(+20°C)		12	10	8	6	4	4	4	4							
耐久性 Endurance	保证寿命时间 Test Time	2,000 hours														
	静电容量变化率 Capacitance Change	≤ 初始值的 ± 20% Within ± 20% of initial value														
	损失角正切值 Tanδ	≤ 初始规格值的 200% 或 0.4 (取较大者) Less than 200% of specified value or 0.4 whichever is greater														
	漏电流 Leakage Current	≤ 初始规格值 Within specified value														
	*于 105°C 环境中供给容许纹波电流值与额定电压 2,000 小时后, 待制品回复至 20°C 的环境中进行量测时, 需满足上列要求。 *The above specifications shall be satisfied when the capacitors are restored to 20°C after the rated voltage applied with rated ripple current for 2,000 hours at 105°C.															
高温无负荷特性 Shelf Life Test	保证寿命时间 Test Time	1,000 hours														
	静电容量变化率 Capacitance Change	≤ 初始值的 ± 20% Within ± 20% of initial value														
	损失角正切值 Tanδ	≤ 初始规格值的 200% 或 0.4 (取较大者) Less than 200% of specified value or 0.4 whichever is greater														
	漏电流 Leakage Current	≤ 初始规格值 Within specified value														
	*于 105°C 环境中不供给额定电压 1,000 小时后, 待制品回复至 20°C 的环境中进行量测时, 需满足上列要求。 *The above specifications shall be satisfied when the capacitors are restored to 20°C after exposing them for 1,000 hours at 105°C without voltage applied.															

表2 外形尺寸 Dimensions(mm)



Lead Spacing and Diameter

Unit: mm

β	±0.5			±1.0		
ΦD	5	6.3	8	10	12.5, 13	16 18 20
Φd±0.05	0.5			0.6 0.8 1.0		
P±0.5	2	2.5	3.5	5.0 7.5 10.0		
L±α	L < 16: α=1.5; L ≥ 16: α=2.0					

表3 纹波电流与频率修正系数

Ripple Current and Frequency Multipliers

6.3V~100V

Cap.(μF)	Freq.(Hz)	50	120	1K	100K
	Coefficient	~47	0.75	1.00	1.57
100~470		0.80	1.00	1.34	1.5
1000~		0.85	1.00	1.13	1.15

160V~450V

F (Hz)	50	120	1K	100K
Coefficient	0.80	1.00	1.40	1.60

■表4 标准品一览表 Standard Size

Dimension and Permissible Ripple Current

Dimension: $\phi D \times L$ (mm)
Ripple Current: mA/rms at 120 Hz, 105°C

Rated Volt.(Vdc)	6.3		10		16		25		35		50	
Surge Volt.(Vdc)	8		13		20		32		44		63	
Item Cap.(μF)	D×L	R. C.	D×L	R. C.	D×L	R. C.	D×L	R. C.	D×L	R. C.	D×L	R. C.
0.1											5×11	1.3
0.22											5×11	2.9
0.33											5×11	4.3
0.47											5×11	6.2
1											5×11	13
2.2											5×11	20
3.3											5×11	25
4.7											5×11	30
10					5×11	34					5×11	40
22					5×11	51	5×11	64			5×11	65
33					5×11	63	5×11	69			5×11	90
47			5×11	68	5×11	75	5×11	84	5×11	90	6.3×11	110
100			5×11	100	5×11	110	6.3×11	159	6.3×11	150	8×12	180
220	5×11	140	5×11	170	6.3×11	180	8×12	285	8×12	270	10×12.5	300
330	6.3×11	190	6.3×11	200	8×12	260	8×12	310	10×12.5	350	10×16	410
470	6.3×11	230	6.3×11	250	8×12	310	10×12.5	385	10×16	460	10×20	530
1000	8×12	380	10×12.5	460	10×16	560	10×20	680	12.5×20	810	12.5×25	950
									10×30	669		
1500									12.5×25	1040		
2200	10×20	710	10×20	760	12.5×20	920	12.5×25	1100	16×25.5	1260	18×25.5	1470
											16×31.5	1600
3300	10×20	840	12.5×20	1000	12.5×25	1170	16×25.5	1220	18×25.5	1610	18×35.5	1770
4700	12.5×20	1090	12.5×25	1260	16×25.5	1480	18×25.5	1380	18×35.5	1910		
5600											20×40	2300
10000	16×25.5	1650	18×25.5	1890	18×35.5	2060						
22000	18×40	2350										

制品尺寸与容许纹波电流一览表

尺寸: 直径(ϕD)×长度(L), (毫米/mm)
容许纹波电流: 毫安/均方根值(mA/rms), 120 赫兹(Hz), 105°C

Dimension and Permissible Ripple Current

Dimension: $\phi D \times L$ (mm)
Ripple Current: mA/rms at 120 Hz, 105°C

Rated Volt.(Vdc)	63		100		160		200		250		350	
Surge Volt.(Vdc)	79		125		200		250		300		400	
Item Cap.(μF)	D×L	R. C.	D×L	R. C.	D×L	R. C.	D×L	R. C.	D×L	R. C.	D×L	R. C.
0.47			5×11	7.1	6.3×11	6.7					6.3×11	16
1			5×11	15	6.3×11	9.9			6.3×11	9.9	6.3×12	27
2.2			5×11	21	6.3×11	15	6.3×11	17	6.3×11	23	10×12.5	36
3.3			5×11	29	6.3×11	28	6.3×11	28	8×12	32	10×12.5	47
4.7			5×11	32	6.3×11	34	8×12	39	8×12	39	10×20	75
10	5×11	46	6.3×11	54	10×12.5	67	10×16	74	10×16	74	12.5×25	130
22	5×11	71	6.3×11	93	10×20	120	10×20	120	12.5×20	130	12.5×25	160
33	6.3×11	100	8×12	130	10×20	145	12.5×20	160	12.5×20	160	16×25.5	210
47	6.3×11	120	10×12.5	165	12.5×20	195	12.5×20	195	12.5×25	210		
100	10×12.5	215	10×20	265	16×25.5	335	16×25.5	335	18×25.5	365		
220	10×16	335	12.5×25	440	18×25.5	540	20×25	575	18×40	585		
330	10×20	510	12.5×25	540	18×35.5	705						
470	12.5×20	640	16×25.5	715								
1000	16×25.5	930	18×40	985								

制品尺寸与容许纹波电流一览表

尺寸: 直径(ϕD)×长度(L), (毫米/mm)
容许纹波电流: 毫安/均方根值(mA/rms), 120 赫兹(Hz), 105°C

Dimension and Permissible Ripple Current

Dimension: $\phi D \times L$ (mm)
Ripple Current: mA/rms at 120 Hz, 105°C

Rated Volt.(Vdc)	400		450	
Surge Volt.(Vdc)	450		500	
Item Cap. (μF)	D x L	R. C.	D x L	R. C.
1	6.3x11	15	10x12.5	13
2.2	8x12	26	10x12.5	39
3.3	10x12.5	38	10x16	50
4.7	10x16	50	10x20	77
6.8	8x12	55		
	10x16	72		
10	10x20	80	12.5x20	65
22	12.5x25	145	16x25.5	193
33	16x20.5	175	16x31.5	303
	16x25.5	195		
47	16x25.5	250	16x35.5	352
	16x31.5	250		
	18x25.5	250		
68			16x35.5	500
100			18x40	572

制品尺寸与容许纹波电流一览表

尺寸: 直径(ϕD) \times 长度(L), (毫米/mm)
容许纹波电流: 毫安/均方根值(mA/rms), 120 赫兹(Hz), 105°C

表5 产品编码说明 Part Numbering System

D	GM	226	M	160	S1	A	0	H20	A																										
电容器类别 Capacitors Name	系列名 Series Name	额定静电容量 Capacitance	额定静电容量 容许误差值 Capacitance tolerance	额定电压 Rated voltage	加工形状 Processing shape	电气特性 Electrical characteristics	PET套颜色管 PET Sleeve color	制品尺寸 Case size	内部特征码 Internal use																										
引线型铝电解电容器 Leaded Aluminum Electrolytic Capacitors	KGM Series	范例Example: <table border="1"> <thead> <tr> <th>Cap.</th> <th>Symbol</th> </tr> </thead> <tbody> <tr> <td>0.1μF</td> <td>104</td> </tr> <tr> <td>2.2μF</td> <td>225</td> </tr> <tr> <td>33μF</td> <td>336</td> </tr> <tr> <td>470μF</td> <td>477</td> </tr> <tr> <td>6800μF</td> <td>688</td> </tr> <tr> <td>82000μF</td> <td>829</td> </tr> </tbody> </table>	Cap.	Symbol	0.1 μF	104	2.2 μF	225	33 μF	336	470 μF	477	6800 μF	688	82000 μF	829	M=±20%	范例Example: <table border="1"> <thead> <tr> <th>Voltage</th> <th>Symbol</th> </tr> </thead> <tbody> <tr> <td>6.3V</td> <td>6R3</td> </tr> <tr> <td>10V</td> <td>010</td> </tr> <tr> <td>250V</td> <td>250</td> </tr> </tbody> </table>	Voltage	Symbol	6.3V	6R3	10V	010	250V	250			黑体银字 Black body silver print	范例Example: <table border="1"> <thead> <tr> <th>$\phi D \times L$ (mm)</th> <th>Symbol</th> </tr> </thead> <tbody> <tr> <td>10x20</td> <td>H20</td> </tr> </tbody> </table>	$\phi D \times L$ (mm)	Symbol	10x20	H20	
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