VD

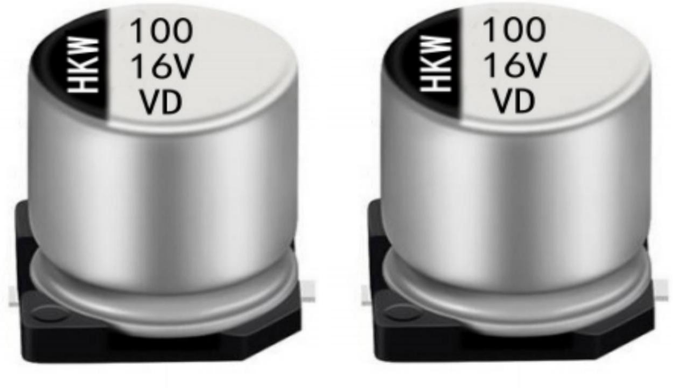
特点 Features

保证105℃ 3000~5000小时：Endurance 3000~5000h at 105℃

额定电压范围：6.3~100V。Rated Voltage Range:6.3~100V

低阻抗、长寿命品：Low ESR ,Long life Type

满足RoHS：RoHS Compliant



主要技术性能 Specifications

项目 Items	特性 Performance Characteristics	
类别温度范围 Category Temperature Range	-55℃ ~+105℃	
额定电压范围 Rated Voltage(U_R)	6.3 ~ 100V	
标称电容量范围 Nominal Capacitance Range(C_R)	4.7 ~ 8200μF	120Hz，+20℃
标称电容量允许偏差 Allowed Capacitance Tolerance(C_T)	±20%(M)	120Hz，+20℃
漏电流 Leakage Current(I_L)	≤0.01C_RU_R 或者 3μA 取较大值（Whichever is greater）	+20℃ after 2 minutes
损耗角正切值 Tangent of loss angle(Tanδ)		Max. 120Hz,+20℃

U_R	6.3	10	16	25	35	50	63	80	100
Tanδ	0.26	0.20	0.16	0.14	0.12	0.12	0.10	0.08	0.07

低温特性 Characteristics at Low Temperature		

U_R(V)	6.3	10	16	25	35	50	63	80	100
$Z_{(-25℃)}$ / $Z_{(+20℃)}$	4	3	2	2	2	2	2	2	2
$Z_{(-55℃)}$ / $Z_{(+20℃)}$	8	5	4	3	3	3	3	3	3

Max.
120Hz

耐久性 Load life	+105℃施加额定电压 5000 小时后（ΦD=4，5 和 6.3 为 3000 小时），恢复 16 小时后： After applying rated voltage for 5000 hours(3000 hours for ϕD = 4, 5 and 6.3) at 105℃ and then recovery 16 hours:	
	电容量变化率 Capacitance change	±30%初始值以内 Within ±30% of initial value
	损耗角正切值 Tanδ	≤ 300%初始规定值 Not more than 300% of specified value
	漏电流 Leakage current	≤ 初始规定值 Not more than specified value
高温贮存 Shelf life	+105℃,1000 小时贮存后,恢复 16 小时后： After storage for 1000 hours at +105℃ and then recovery 16 hours:	
	电容量变化率 Capacitance change	±30%初始值以内 Within ±30% of initial value
	损耗角正切值 Tanδ	≤ 300%初始规定值 Not more than 300% of specified value
	漏电流 Leakage current	≤ 初始规定值 Not more than specified value
耐焊接热 Resistance to Soldering Heat	在 250℃的条件下，电容器在热板上保持 30 秒，然后从热板上取出电容器，让其在室温下恢复，电容器应满足以下要求： The capacitors shall be kept on the hot plate maintained at 250℃ for 30 seconds. After removing from the hot plate and restored at room temperature, they meet the following requirement.	
	电容量变化率 Capacitance change	±10%初始值以内 Within ±10% of initial value
	损耗角正切值 Tanδ	≤初始规定值 Not more than specified value
	漏电流 Leakage current	≤ 初始规定值 Not more than specified value

HKWDZ

尺寸图 Dimensional drawings

Fig.1

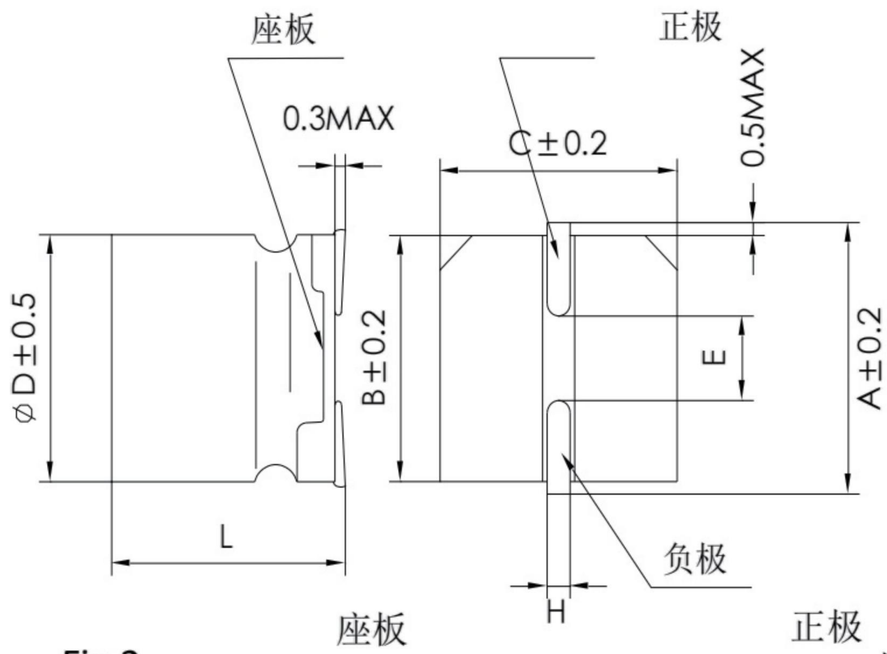
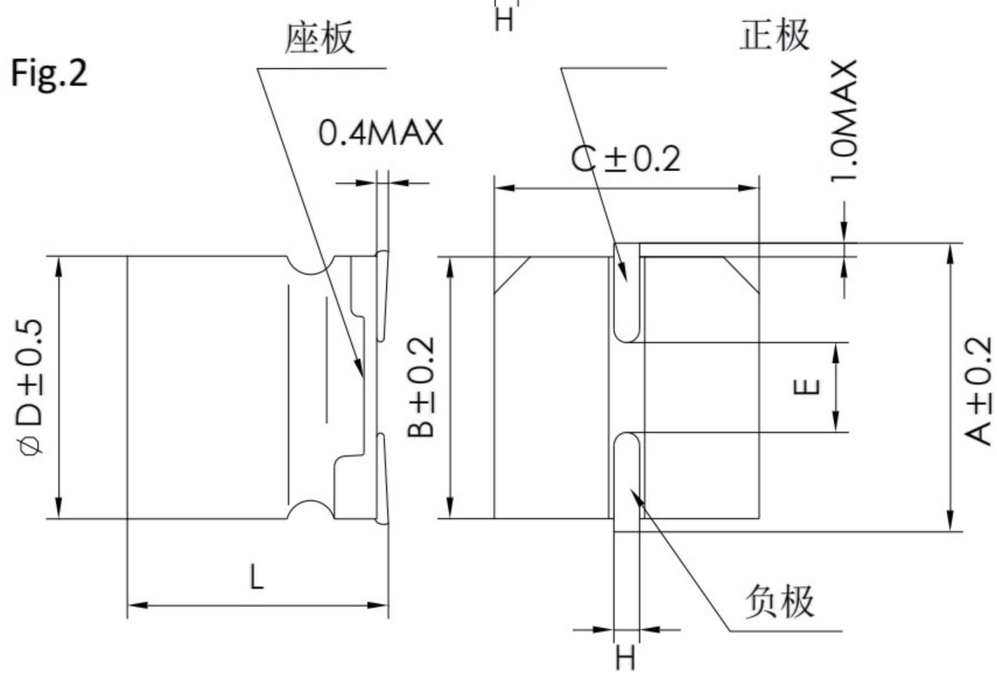
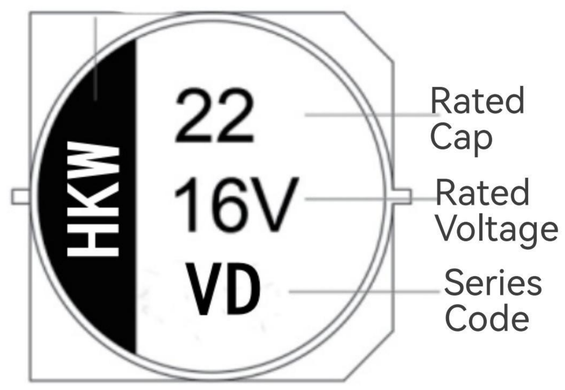


Fig.2

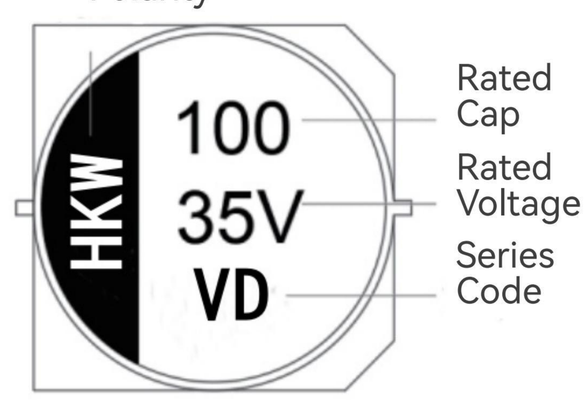


Marking

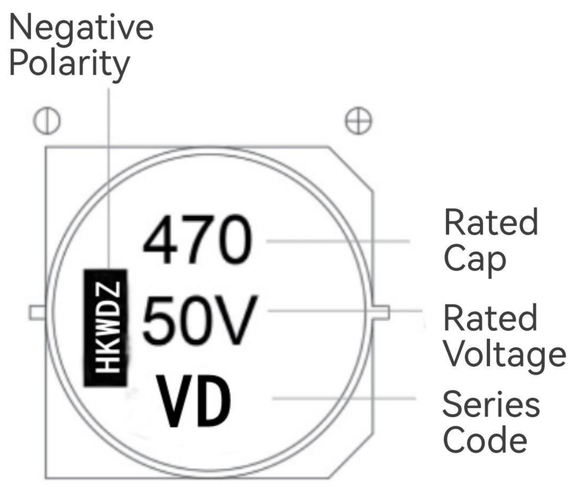
ΦD=4～5mm



ΦD=6.3~10.2mm



ΦD=12.5mm



尺寸表 size table

单位 Unit: mm

ΦD	L	A	B	C	E±0.2	H	Fig.No.
4	5.8±0.3	5.0	4.3	4.3	1.0	0.5 ~ 0.8	1
5	5.8±0.3	6.0	5.3	5.3	1.3		
6.3	5.8±0.3	7.3	6.6	6.6	2.2		
6.3	7.7±0.3	7.3	6.6	6.6	2.2		
8	6.5±0.3	8.9	8.3	8.3	2.3		
8	10.5±0.5	9.0	8.3	8.3	3.1	0.8 ~ 1.1	
10	10.5±0.5	11.0	10.3	10.3	4.5		
10	12.5±0.5	11.0	10.3	10.3	4.5		
12.5	13.5±0.5	13.6	13	13	4.5	1.1 ~ 1.4	2
12.5	16±0.5	13.6	13	13	4.5		
16	16.5±0.5	18.0	17	17	6.4		
16	21.5±0.5	18.0	17	17	6.4		
18	16.5±0.5	20.0	19	19	6.4		
18	21.5±0.5	20.0	19	19	6.4		

规格特性表 Table of specifications and characteristics

U_R(V) / CAP(μF)	6.3V			10V			16V			25V			35V		
	ΦDxL mm*mm	$I_{AC,R}$ 100KHz 105℃ mA	ESR_{max} 100KHz 25℃ Ω	ΦDxL mm*mm	$I_{AC,R}$ 100KHz 105℃ mA	ESR_{max} 100KHz 25℃ Ω	ΦDxL mm*mm	$I_{AC,R}$ 100KHz 105℃ mA	ESR_{max} 100KHz 25℃ Ω	ΦDxL mm*mm	$I_{AC,R}$ 100KHz 105℃ mA	ESR_{max} 100KHz 25℃ Ω	ΦDxL mm*mm	$I_{AC,R}$ 100KHz 105℃ mA	ESR_{max} 100KHz 25℃ Ω
4.7													4*5.8	90	1.35
10							4*5.8	90	1.35	4*5.8	90	1.35	5*5.8	160	0.70
22	4*5.8	90	1.35	4*5.8	90	1.35	5*5.8	160	0.70	5*5.8	160	0.70	6.3*5.8	240	0.36
47	5*5.8	160	0.70	5*5.8	160	0.70	5*5.8	160	0.70	6.3*5.8	240	0.36	6.3*7.7	300	0.30
100	6.3*5.8	240	0.36	6.3*5.8	240	0.36	6.3*5.8	240	0.36	6.3*7.7	300	0.30	8*10.5	650	0.16
220	6.3*5.8	240	0.36	6.3*7.7	300	0.30	6.3*7.7	300	0.30	8*10.5	650	0.16	10*10.5	850	0.09
330	6.3*7.7	300	0.30	8*10.5	650	0.16	8*10.5	650	0.16	8*10.5	650	0.16	10*10.5	850	0.09
470	8*10.5	650	0.16	8*10.5	650	0.16	10*10.5	850	0.09	10*10.5	850	0.09	10*12.5	1090	0.065
680	8*10.5	650	0.16	10*10.5	850	0.09	10*10.5	850	0.09	12.5*13.5	1190	0.06	12.5*13.5	1190	0.06
1000	10*10.5	850	0.09	10*10.5	850	0.09	12.5*13.5	1190	0.06	12.5*16	1260	0.056	16*16.5	1800	0.038
1500	10*10.5	850	0.09	12.5*13.5	1190	0.06	12.5*16	1260	0.056	16*16.5	1800	0.038	18*16.5	1980	0.035
2200	12.5*13.5	1190	0.06	12.5*16	1260	0.056	16*16.5	1800	0.038	16*21.5	1650	0.038	18*21.5	2100	0.033
3300	12.5*16	1260	0.056	16*16.5	1800	0.038	16*16.5	1800	0.038	18*16.5	1980	0.035			
4700	16*16.5	1800	0.038	16*16.5	1800	0.038	18*16.5	1980	0.035						
6800	18*16.5	1980	0.035	18*16.5	1980	0.035									
8200	18*21.5	2100	0.033	18*21.5	2100	0.033									

U_R(V) / CAP(μF)	50V			63V			80V			100V		
	ΦDxL mm*mm	$I_{AC,R}$ 100KHz 105℃ mA	ESR_{max} 100KHz 25℃ Ω	ΦDxL mm*mm	$I_{AC,R}$ 100KHz 105℃ mA	ESR_{max} 100KHz 25℃ Ω	ΦDxL mm*mm	$I_{AC,R}$ 100KHz 105℃ mA	ESR_{max} 100KHz 25℃ Ω	ΦDxL mm*mm	$I_{AC,R}$ 100KHz 105℃ mA	ESR_{max} 100KHz 25℃ Ω
4.7	4*5.8	60	3.0	5*5.8	70	1.9						
10	5*5.8	85	1.5	6.3*5.8	80	1.5	6.3*7.7	60	2.4	6.3*7.7	60	2.4
22	6.3*5.8	165	0.88	6.3*7.7	120	1.2	8*10.5	130	1.3	8*10.5	130	1.3
33	6.3*7.7	195	0.68	8*10.5	250	0.65	10*10.5	200	0.7	10*10.5	200	0.7
47	8*10.5	350	0.34	8*10.5	250	0.65	10*10.5	200	0.7	12.5*13.5	460	0.32
100	10*10.5	670	0.18	10*10.5	400	0.35	12.5*13.5	460	0.32	12.5*13.5	460	0.32
220	10*12.5	730	0.15	12.5*13.5	720	0.15	12.5*16	570	0.25	16*16.5	650	0.17
330	12.5*13.5	650	0.12	16*16.5	900	0.082	16*16.5	650	0.17	16*21.5	900	0.15
470	12.5*16	870	0.1	16*16.5	900	0.082	16*21.5	900	0.15	18*21.5	950	0.15
680	16*16.5	1000	0.073	16*21.5	1150	0.080	18*21.5	950	0.15			
1000	18*16.5	1500	0.066	18*21.5	1250	0.060						
1500	18*21.5	1620	0.050									

额定纹波电流频率修正系数 Frequency correction factor for ripple current

Frequency（Hz）	50	120	300	1K	≥ 10K
Coefficient（kf）	0.35	0.50	0.64	0.83	1.00