

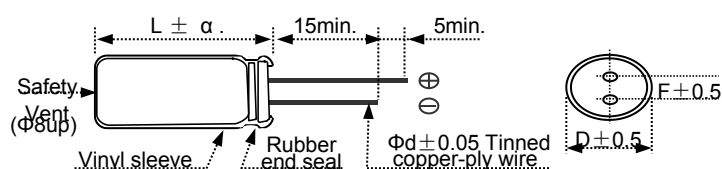
HU Series

- For automobile and other high temperature application
- Endurance with ripple current: 125°C 2000~5000 hours
- Downsize, long life, low impedance and better low temperature characteristics
- RoHS2.0 Compliant

◆ 规格表 Specifications

项目Items	特性参数Characteristics										
使用温度范围 Category Temperture Range	-40 ~ +125℃										
额定工作电压范围 Rated Voltage Range	10 ~ 100V.DC										
静电容量允许偏差 Capacitance Tolerance	±20%(M) (at 20℃,120Hz)										
漏电流 Leakage Current	I≤0.01CV or 3μA, 二者取最大值（施加额定工作电压2分钟后） Whichever is greater （After 2 minutes application of rated voltage ） Note: I=Max.leakage current (μA), C=Nominal capacitance(μF), V=Rated voltage(V) (at 20℃)										
损耗角正切值tanδ Dissipation Factor	Rated voltage(V)	10	16	25	35	50	63	80	100		
	tanδ(Max.)	0.20	0.16	0.14	0.12	0.10	0.10	0.08	0.08		
	标称容量超过1000μF,则每增加1000 μ F, 损耗角正切值增加0. 02 When nominal capacitance exceeds 1000μF,add 0.02 to the value above for each 1000μF increase. (at 20℃,120Hz)										
低温特性 LOW Temperature Characteristics (Max.Impedance Ratio)	阻抗比值不得超过下表中列出的值 The impedance ratio shall not exceed the values listed in the below table. (at 120Hz)										
	Rated voltage(V)	10	16	25	35	50	63	80	100		
	Z(-25℃)/Z(+20℃)	3	2	2	2	2	2	2	2		
	Z(-40℃)/Z(+20℃)	6	4	4	4	4	4	4	4		
耐久性 Endurance	在125℃环境中，不超过额定电压的范围内叠加最大允许纹波电流，连续加载右表时间，经恢复到20℃后，电容器满足以下各项要求。 The following specifications shall be satisfied when the capacitors are restored to 20℃ after applied within maximum allowable ripple current and not over rated voltage range for the time in the table at 125℃.										
	Capacitance change	≦ ±30% of the initial value						ΦD	时间hrs	ΦD	时间hrs
	D.F.(tanδ)	≦ 300% of the initial specified value						Φ8	2,000	≧Φ13	5,000
	Leakage current	≦ The initial specified value						Φ10	3,000		
高温储存特性 Shelf Life	在125℃环境中，不施加电压条件下储存1000小时，经恢复到20℃后，电容器满足以下各项要求。 The following specifications shall be satisfied when the capacitors are restored at 20℃ after exposing them for 1000 hours at 125℃ without voltage applied.										
	Capacitance change	≦ ±30% of the initial value									
	D.F.(tanδ)	≦ 300% of the initial specified value									
	Leakage current	≦ 200% of the initial specified value									

◆ 尺寸图 (单位: mm) DIMENSIONS (Unit:mm)



ΦD	6.3	8	10	13	16
F	2.5	3.5	5.0	5.0	7.5
Φd	0.5	0.5	0.6	0.6	0.8

α	(L<20)1.5
	(L≥20)2.0

◆ 纹波电流修正系数 Rated Ripple Current Coefficient

● 频率系数 Frequency Coefficient

Rated Voltage(V)	Frequency(Hz)	120	1K	10K	100K
	Capacitance(μF)				
10~100	10~33	0.20	0.50	0.80	1.00
	39~100	0.25	0.60	0.90	1.00
	120~270	0.35	0.70	0.92	1.00
	330~680	0.45	0.75	0.95	1.00
	820~1800	0.50	0.80	0.96	1.00
	2200	0.55	0.85	0.98	1.00

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◆ 标准品一览表 Standard Ratings

WV(V) cap.(μF)	10(1A)			16(1C)			25(1E)			35(1V)		
	Case size ΦD×L (mm)	Maximum ESR at 20℃ /100kHz(Ω)	Maximum allowable ripple current at125℃/100kHz (mA.r.m.s)	Case size ΦD×L (mm)	Maximum ESR at 20℃ /100kHz(Ω)	Maximum allowable ripple current at125℃/100kHz (mA.r.m.s)	Case size ΦD×L (mm)	Maximum ESR at 20℃ /100kHz(Ω)	Maximum allowable ripple current at125℃/100kHz (mA.r.m.s)	Case size ΦD×L (mm)	Maximum ESR at 20℃ /100kHz(Ω)	Maximum allowable ripple current at125℃/100kHz (mA.r.m.s)
100				8×12	0.31	341	8×12	0.31	341	8×12	0.31	341
										10×13	0.14	523
220	8×12	0.31	341	10×13	0.14	521	10×13	0.14	521	10×16	0.093	612
330	10×13	0.14	621	10×13	0.14	621	10×16	0.093	732	10×20	0.074	856
470	10×13	0.14	693	10×16	0.093	792	10×20	0.074	952	13×20	0.057	1082
1,000	10×20	0.074	951	13×20	0.057	1,082	13×25	0.039	1,352	16×25	0.028	1,623
2,200	13×25	0.039	1,351	16×26	0.029	1,623	16×32	0.023	1,863			
3,300	16×26	0.029	1,623	16×32	0.023	1,863						
4,700	16×32	0.023	1,863									

WV(V) cap.(μF)	50(1H)			63(1J)			80(1K)			100(2A)		
	Case size ΦD×L (mm)	Maximum ESR at 20℃ /100kHz(Ω)	Maximum allowable ripple current at125℃/100kHz (mA.r.m.s)	Case size ΦD×L (mm)	Maximum ESR at 20℃ /100kHz(Ω)	Maximum allowable ripple current at125℃/100kHz (mA.r.m.s)	Case size ΦD×L (mm)	Maximum ESR at 20℃ /100kHz(Ω)	Maximum allowable ripple current at125℃/100kHz (mA.r.m.s)	Case size ΦD×L (mm)	Maximum ESR at 20℃ /100kHz(Ω)	Maximum allowable ripple current at125℃/100kHz (mA.r.m.s)
10	8×12	0.74	151							8×12	1.4	151
22	8×12	0.49	181							10×13	0.79	203
33	8×12	0.49	196	8×12	1.49	196	8×12	1.49	196	10×13	0.79	215
47	8×12	0.49	208	10×13	0.58	256	10×13	0.79	256	10×16	0.54	289
100	10×13	0.19	402	10×16	0.40	461	10×20	0.38	492	13×20	0.24	586
220	10×20	0.097	682	13×20	0.15	802	13×25	0.17	1,042	16×26	0.09	1,203
330	13×20	0.080	992	13×25	0.11	1,092	13×30	0.15	1,267	16×32	0.077	1,493
470	13×25	0.058	1,152	13×30	0.096	1,262	16×25	0.09	1,303			
1,000	16×32	0.030	1,393	16×32	0.057	1,393						

※铝电解电容器由于在纹波电流叠加时自我发热、温度上升而老化，中心温度每升温5℃寿命减少一半。要想保持长寿命请在使用过程中降低纹波电流。

The endurance of capacitors is reduced with internal heating produced by ripple current at the rate of halving the lifetime with every 5℃ rise. When long life performance is required in actual use, the rms ripple current has to be reduced.