

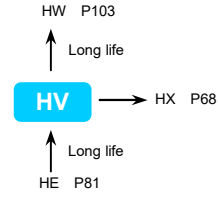
# HV 系列 SERIES

Charge-discharge

High reliability

RoHS

- 应对 AC 伺服放大器、变频器再生引起的大电压变化。  
For frequently charge of regenerative voltage from AC servo amplifier and inverter control.
- 保证 105℃、3000 小时寿命。(叠加纹波电流)  
Endurance with ripple current: 3000 hours at 105℃
- 额定工作电压范围: 160V~500V  
Rated voltage range: 160V-500V
- 最适合高频度打开/关闭电源及电压变化大的电源用。  
Ideal use to power supply, specially power source with turn on and off frequently and highly voltage fluctuation.



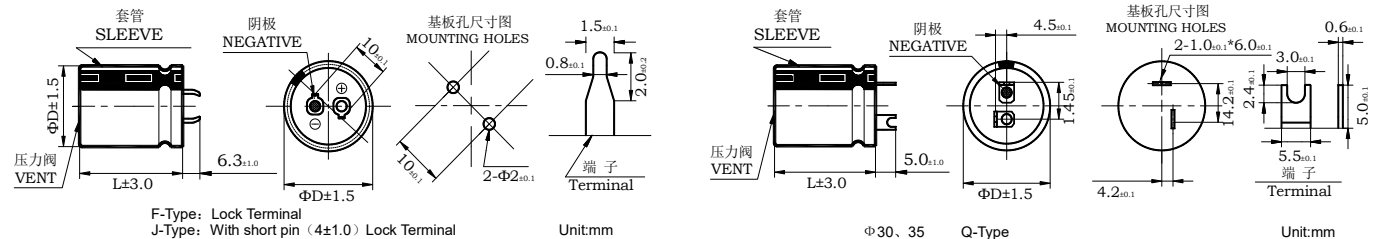
## 规格表 SPECIFICATIONS

项目 Items	特性 Characteristics									
工作温度范围 Operating Temperature Range	-25~+105℃									
额定工作电压范围 Rated Working Voltage Range	160~500V									
静电容量允许偏差 Capacitance Tolerance	±20% (20℃, 120Hz)									
损耗角正切值 Dissipation Factor (MAX) 20℃, 120Hz	U <sub>R</sub> (V)	160	200	250	315	350	400	450	500	
	tanδ	0.15	0.15	0.15	0.15	0.15	0.15	0.20	0.20	
阻抗比 Impedance Ratio (MAX) 120Hz	U <sub>R</sub> (V)	160	200	250	315	350	400	450	500	
	Z <sub>-25℃</sub> /Z <sub>+20℃</sub>	4	4	4	7	7	7	8	8	
漏电流 Leakage Current (MAX)	I=0.01C <sub>R</sub> U <sub>R</sub> 或 1.5mA 取小者 (20℃, 施加额定电压 5 分钟后) I=0.01C <sub>R</sub> U <sub>R</sub> or 1.5mA whichever is minimum. (at 20℃, After 5minutes application of rated voltage) I=漏电流 (µA) U <sub>R</sub> =额定电压 (V) C <sub>R</sub> =静电容量 (µF) Leakage Current Rated Voltage Rated Capacitance									
充放电特性 Charge and Discharge			在 15~35℃ 环境下, 用如图 6Hz 频率波形电压充放电 5000 万次, 恢复 20℃ 后检测, 满足表中要求: Under the condition of 15-35℃, charge & discharge the capacitor 50million times with 6Hz frequency voltage applied, then make the capacitor recover to 20℃, all requirements shown in the table are satisfied.						漏电流 Leakage current ≤ 规定值 ≤ Specified value	
									损耗角正切值变化率 tanδ change ≤ 规定值的 200% ≤ 200% of specified value	
								静电容量变化率 Capacitance change 初始值±20%以内 Within±20% of initial value		

	使用寿命 Useful Life		负荷寿命 Load Life	耐久性特性 Endurance Test	高温无负荷特性 Shelf Life
产品寿命 Life Time	5000h	>180000h	3000h	3000h	1000h
漏电流 Leakage Current	≤ 规定值 ≤ Specified value		≤ 规定值 ≤ Specified value	≤ 规定值 ≤ Specified value	≤ 规定值 ≤ Specified value
损耗角正切值变化率 tanδ change	≤ 规定值的 300% ≤ 300% of specified value		≤ 规定值的 200% ≤ 200% of specified value	≤ 规定值的 200% ≤ 200% of specified value	≤ 规定值的 200% ≤ 200% of specified value
静电容量变化率 Capacitance Change	初始值±30%以内 Within±30% of initial value		初始值±20%以内 Within±20% of initial value	初始值±20%以内 Within±20% of initial value	初始值±20%以内 Within±20% of initial value
施加条件 Condition 施加电压 Applied Voltage 施加纹波电流 Applied Ripple Current 环境温度 Applied Temperature 失效等级 Failure Rate Level	U <sub>R</sub> I <sub>R</sub> 105℃ ≤ 1% Failure rate	U <sub>R</sub> 1.6×I <sub>R</sub> 40℃ ≤ 1% Failure rate	U <sub>R</sub> I <sub>R</sub> 105℃ 0%	U <sub>R</sub> I <sub>R</sub> =0 105℃ 0%	U <sub>R</sub> =0 I <sub>R</sub> =0 105℃ 0% Back up to 20℃ and placed more than 24 hours. U <sub>R</sub> to be applied for 60 min before measurement.

## 尺寸图 Dimensions

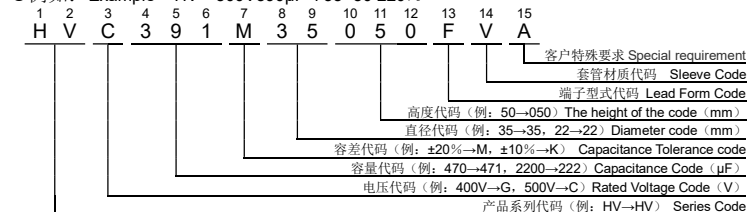
● 常用端子型式代码: Terminal Code



● 记载以外的端子形状, 请另行咨询。Please ask for advice for other sizes.

## 产品编码体系 PART NUMBER SYSTEM

● 例如: Example HV 500V390µF φ35×50 ±20%



## 纹波电流修正系数 Rated Ripple Current Multiplies

● 频率修正系数 Frequency coefficient

电压范围 (V) Rated voltage	频率 (Hz) Frequency				
	50 (60)	100 (120)	300	1k	≥10k
160~250VV	0.81	1.00	1.17	1.32	1.45
315~500VV	0.70	1.00	1.16	1.30	1.41

● 温度修正系数 Temperature coefficient

电压范围 (V) Rated voltage	温度 (℃) Temperature				
	+40	+55	+70	+85	+105
160~500VV	2.7	2.5	2.1	1.7	1.0

## ◆产品一览表 Standard Ratings

WV <sub>oc</sub> (Surge Voltage) (V)	Cap (μF)	Size D×L (mm)	tanδ 20°C 120Hz	ESR <sub>typ</sub> 20°C 120Hz (mΩ)	Ripple Current 105°C/120Hz (Arms)	Catalog Part Number
160 (200)	330	22×25	0.15	354	1.25	HVN331M22025□VA
	390	25×25	0.15	299	1.35	HVN391M25025□VA
	470	22×35	0.15	249	1.48	HVN471M22035□VA
	560	22×35	0.15	209	1.55	HVN561M22035□VA
	560	25×30	0.15	209	1.55	HVN561M25030□VA
	560	30×25	0.15	209	1.62	HVN561M30025□VA
	680	22×40	0.15	172	1.85	HVN681M22040□VA
	680	25×35	0.15	172	1.88	HVN681M25035□VA
	820	22×50	0.15	142	2.11	HVN821M22050□VA
	820	25×40	0.15	142	2.05	HVN821M25040□VA
	820	30×30	0.15	142	2.03	HVN821M30030□VA
	820	35×25	0.15	142	2.08	HVN821M35025□VA
	1000	25×45	0.15	117	2.41	HVN102M25045□VA
	1000	30×35	0.15	117	2.40	HVN102M30035□VA
	1000	35×30	0.15	117	2.48	HVN102M35030□VA
	1200	25×50	0.15	97	2.81	HVN122M25050□VA
	1200	30×40	0.15	97	2.83	HVN122M30040□VA
	1200	35×35	0.15	97	2.93	HVN122M35035□VA
	1500	30×45	0.15	78	3.19	HVN152M30045□VA
	1500	35×40	0.15	78	3.32	HVN152M35040□VA
1800	35×45	0.15	65	3.70	HVN182M35045□VA	
2200	35×50	0.15	53	4.10	HVN222M35050□VA	
200 (250)	220	22×25	0.15	555	1.06	HVL221M22025□VA
	270	22×25	0.15	452	1.12	HVL271M22025□VA
	330	22×30	0.15	370	1.28	HVL331M22030□VA
	330	25×25	0.15	370	1.28	HVL331M25025□VA
	390	22×30	0.15	313	1.35	HVL391M22030□VA
	470	22×35	0.15	260	1.55	HVL471M22035□VA
	470	25×30	0.15	260	1.56	HVL471M25030□VA
	470	30×25	0.15	260	1.62	HVL471M30025□VA
	560	22×45	0.15	218	1.80	HVL561M22045□VA
	560	25×35	0.15	218	1.73	HVL561M25035□VA
	680	22×50	0.15	180	2.10	HVL681M22050□VA
	680	25×40	0.15	180	2.04	HVL681M25040□VA
	680	30×30	0.15	180	2.02	HVL681M30030□VA
	680	35×25	0.15	180	2.07	HVL681M35025□VA
	820	25×45	0.15	149	2.28	HVL821M25045□VA
	820	30×35	0.15	149	2.27	HVL821M30035□VA
	820	35×30	0.15	149	2.35	HVL821M35030□VA
	1000	30×40	0.15	122	2.50	HVL102M30040□VA
	1000	35×35	0.15	122	2.60	HVL102M35035□VA
	1200	30×45	0.15	102	2.80	HVL122M30045□VA
1200	35×40	0.15	102	2.90	HVL122M35040□VA	
1500	35×40	0.15	81	3.35	HVL152M35040□VA	
1800	35×45	0.15	68	3.90	HVL182M35045□VA	
2200	35×50	0.15	56	4.35	HVL222M35050□VA	
250 (300)	180	22×25	0.15	700	1.00	HVJ181M22025□VA
	220	22×30	0.15	573	1.10	HVJ221M22030□VA
	220	25×25	0.15	573	1.10	HVJ221M25025□VA
	270	22×35	0.15	467	1.20	HVJ271M22035□VA
	330	22×40	0.15	382	1.30	HVJ331M22040□VA
	330	25×30	0.15	382	1.24	HVJ331M25030□VA
	330	30×25	0.15	382	1.28	HVJ331M30025□VA
	390	22×45	0.15	323	1.45	HVJ391M22045□VA
	390	25×35	0.15	323	1.40	HVJ391M25035□VA
	470	22×50	0.15	268	1.65	HVJ471M22050□VA
	470	30×30	0.15	268	1.58	HVJ471M30030□VA
	470	35×25	0.15	268	1.62	HVJ471M35025□VA

WV <sub>oc</sub> (Surge Voltage) (V)	Cap (μF)	Size D×L (mm)	tanδ 20°C 120Hz	ESR <sub>typ</sub> 20°C 120Hz (mΩ)	Ripple Current 105°C/120Hz (Arms)	Catalog Part Number	
250 (300)	560	25×45	0.15	225	1.88	HVJ561M25045□VA	
	560	30×35	0.15	225	1.88	HVJ561M30035□VA	
	560	35×30	0.15	225	1.93	HVJ561M35030□VA	
	680	25×50	0.15	185	2.15	HVJ681M25050□VA	
	680	30×40	0.15	185	2.16	HVJ681M30040□VA	
	820	30×45	0.15	154	2.40	HVJ821M30045□VA	
	820	30×50	0.15	154	2.50	HVJ821M30050□VA	
	1000	30×50	0.15	126	2.68	HVJ102M30050□VA	
	1000	35×40	0.15	126	2.66	HVJ102M35040□VA	
	1200	35×45	0.15	105	3.06	HVJ122M35045□VA	
	1500	35×50	0.15	84	3.57	HVJ152M35050□VA	
	315 (365)	150	22×30	0.15	690	0.86	HVI151M22030□VA
		180	22×35	0.15	575	0.98	HVI181M22035□VA
		180	25×30	0.15	575	0.99	HVI181M25030□VA
		220	22×40	0.15	471	1.10	HVI221M22040□VA
220		30×25	0.15	471	1.09	HVI221M30025□VA	
270		22×45	0.15	383	1.25	HVI271M22045□VA	
270		25×35	0.15	383	1.20	HVI271M25035□VA	
330		22×50	0.15	314	1.43	HVI331M22050□VA	
330		25×40	0.15	314	1.39	HVI331M25040□VA	
330		30×30	0.15	314	1.37	HVI331M30030□VA	
390		25×45	0.15	265	1.60	HVI391M25045□VA	
470		25×50	0.15	220	1.80	HVI471M25050□VA	
470		30×40	0.15	220	1.81	HVI471M30040□VA	
470		35×30	0.15	220	1.77	HVI471M35030□VA	
560		30×45	0.15	185	2.02	HVI561M30045□VA	
560	35×35	0.15	185	2.00	HVI561M35035□VA		
680	30×50	0.15	152	2.26	HVI681M30050□VA		
680	35×40	0.15	152	2.25	HVI681M35040□VA		
820	35×45	0.15	126	2.57	HVI821M35045□VA		
1000	35×50	0.15	104	2.91	HVI102M35050□VA		
1200	35×60	0.15	86	3.25	HVI122M35060□VA		
350 (400)	68	22×35	0.15	1483	0.66	HVH680M22035□VA	
	100	22×30	0.15	1009	0.72	HVH101M22030□VA	
	100	25×25	0.15	1009	0.72	HVH101M25025□VA	
	120	22×35	0.15	840	0.80	HVH121M22035□VA	
	150	22×40	0.15	672	0.88	HVH151M22040□VA	
	150	25×30	0.15	672	0.84	HVH151M25030□VA	
	150	30×25	0.15	672	0.87	HVH151M30025□VA	
	180	22×45	0.15	560	0.98	HVH181M22045□VA	
	180	25×35	0.15	560	0.94	HVH181M25035□VA	
	180	30×30	0.15	560	0.99	HVH181M30030□VA	
	220	22×50	0.15	458	1.11	HVH221M22050□VA	
	220	25×40	0.15	458	1.08	HVH221M25040□VA	
	220	35×25	0.15	458	1.09	HVH221M35025□VA	
	270	25×50	0.15	374	1.26	HVH271M25050□VA	
	270	30×35	0.15	374	1.20	HVH271M30035□VA	
	270	35×30	0.15	374	1.24	HVH271M35030□VA	
	330	30×45	0.15	306	1.48	HVH331M30045□VA	
	330	35×35	0.15	306	1.46	HVH331M35035□VA	
	390	30×50	0.15	259	1.65	HVH391M30050□VA	
	390	35×40	0.15	259	1.64	HVH391M35040□VA	
470	30×50	0.15	215	1.78	HVH471M30050□VA		
470	35×45	0.15	215	1.86	HVH471M35045□VA		
560	35×50	0.15	180	2.10	HVH561M35050□VA		
680	35×50	0.15	148	2.40	HVH681M35050□VA		
820	35×60	0.15	123	2.70	HVH821M35060□VA		
1000	35×60	0.15	101	2.90	HVH102M35060□VA		

\*产品编码中□内为产品端子引出型式代码  
\*□Enter the appropriate terminal code

## ◆产品一览表 Standard Ratings

WV <sub>bc</sub> (Surge Voltage) (V)	Cap ( $\mu$ F)	Size D×L (mm)	tan $\delta$ 20°C 120Hz	ESR <sub>typ</sub> 20°C 120Hz (m $\Omega$ )	Ripple Current 105°C 120Hz (Arms)	Catalog Part Number	
400 (450)	47	22×25	0.15	1976	0.42	HVG470M22025□VA	
	68	22×25	0.15	1366	0.50	HVG680M22025□VA	
	82	22×30	0.15	1133	0.59	HVG820M22030□VA	
	82	25×25	0.15	1133	0.59	HVG820M25025□VA	
	100	22×35	0.15	929	0.68	HVG101M22035□VA	
	100	25×25	0.15	929	0.64	HVG101M25025□VA	
	120	22×35	0.15	774	0.77	HVG121M22035□VA	
	120	25×30	0.15	774	0.78	HVG121M25030□VA	
	120	30×25	0.15	774	0.81	HVG121M30025□VA	
	150	22×40	0.15	619	0.90	HVG151M22040□VA	
	150	25×35	0.15	619	0.91	HVG151M25035□VA	
	150	30×25	0.15	619	0.89	HVG151M30025□VA	
	180	22×50	0.15	516	1.03	HVG181M22050□VA	
	180	25×40	0.15	516	1.00	HVG181M25040□VA	
	180	30×30	0.15	516	0.99	HVG181M30030□VA	
	180	35×25	0.15	516	1.01	HVG181M35025□VA	
	220	25×45	0.15	422	1.17	HVG221M25045□VA	
	220	30×35	0.15	422	1.17	HVG221M30035□VA	
	220	35×30	0.15	422	1.20	HVG221M35030□VA	
	450 (500)	270	25×50	0.15	344	1.34	HVG271M25050□VA
270		30×40	0.15	344	1.35	HVG271M30040□VA	
270		35×30	0.15	344	1.32	HVG271M35030□VA	
330		30×45	0.15	282	1.53	HVG331M30045□VA	
330		35×35	0.15	282	1.51	HVG331M35035□VA	
390		30×50	0.15	238	1.69	HVG391M30050□VA	
390		35×40	0.15	238	1.68	HVG391M35040□VA	
470		30×50	0.15	198	1.85	HVG471M30050□VA	
470		35×45	0.15	198	1.93	HVG471M35045□VA	
560		30×60	0.15	166	2.14	HVG561M30060□VA	
560		35×50	0.15	166	2.16	HVG561M35050□VA	
680		35×60	0.15	137	2.41	HVG681M35060□VA	
820		35×70	0.15	113	2.70	HVG821M35070□VA	
450 (500)		68	22×30	0.20	1366	0.56	HVE680M22030□VA
		82	22×35	0.20	1133	0.65	HVE820M22035□VA
		100	22×35	0.20	929	0.69	HVE101M22035□VA
	100	25×30	0.20	929	0.70	HVE101M25030□VA	
	100	30×25	0.20	929	0.72	HVE101M30025□VA	
	120	22×45	0.20	774	0.81	HVE121M22045□VA	
	120	25×35	0.20	774	0.78	HVE121M25035□VA	

WV <sub>bc</sub> (Surge Voltage) (V)	Cap ( $\mu$ F)	Size D×L (mm)	tan $\delta$ 20°C 120Hz	ESR <sub>typ</sub> 20°C 120Hz (m $\Omega$ )	Ripple Current 105°C 120Hz (Arms)	Catalog Part Number
450 (500)	150	22×50	0.20	619	0.94	HVE151M22050□VA
	150	25×40	0.20	619	0.91	HVE151M25040□VA
	150	30×30	0.20	619	0.90	HVE151M30030□VA
	150	35×25	0.20	619	0.92	HVE151M35025□VA
	180	25×45	0.20	516	1.07	HVE181M25045□VA
	180	30×35	0.20	516	1.07	HVE181M30035□VA
	220	25×50	0.20	422	1.23	HVE221M25050□VA
	220	30×40	0.20	422	1.24	HVE221M30040□VA
	220	35×30	0.20	422	1.21	HVE221M35030□VA
	270	30×45	0.20	344	1.38	HVE271M30045□VA
	270	35×35	0.20	344	1.36	HVE271M35035□VA
	330	30×50	0.20	282	1.53	HVE331M30050□VA
	330	35×40	0.20	282	1.52	HVE331M35040□VA
	390	35×45	0.20	238	1.73	HVE391M35045□VA
	470	35×50	0.20	198	1.98	HVE471M35050□VA
	470	30×60	0.20	198	1.96	HVE471M30060□VA
	560	35×60	0.20	166	2.23	HVE561M35060□VA
	680	35×70	0.20	137	2.65	HVE681M35070□VA
500 (550)	100	22×45	0.20	1088	0.82	HVC101M22045□VA
	100	25×40	0.20	1088	0.84	HVC101M25040□VA
	100	30×30	0.20	1088	0.83	HVC101M30030□VA
	120	22×50	0.20	907	0.91	HVC121M22050□VA
	120	25×40	0.20	907	0.89	HVC121M25040□VA
	120	30×35	0.20	907	0.93	HVC121M30035□VA
	120	35×30	0.20	907	0.96	HVC121M35030□VA
	150	25×45	0.20	725	1.01	HVC151M25045□VA
	150	30×40	0.20	725	1.07	HVC151M30040□VA
	150	35×35	0.20	725	1.10	HVC151M35035□VA
	180	25×50	0.20	605	1.11	HVC181M25050□VA
	180	30×45	0.20	605	1.17	HVC181M30045□VA
	220	30×50	0.20	495	1.27	HVC221M30050□VA
	220	35×40	0.20	495	1.26	HVC221M35040□VA
	270	30×50	0.20	403	1.44	HVC271M30050□VA
	270	35×40	0.20	403	1.43	HVC271M35040□VA
	330	35×45	0.20	330	1.61	HVC331M35045□VA
	390	35×50	0.20	279	1.79	HVC391M35050□VA
470	35×60	0.20	232	2.04	HVC471M35060□VA	
560	35×70	0.20	194	2.38	HVC561M35070□VA	

\*产品编码中□内为产品端子引出型式代码  
\*□Enter the appropriate terminal code

\*记载之外的体积，请另行咨询。  
\* Please ask for advice for other sizes.

\*铝电解电容器由于承受纹波电流而发热，随着温升而发生性能劣化。请在使用中降低产品承受的纹波电流。  
\*Aluminum electrolytic capacitor will emit heat when ripple current is applied, the performance will deteriorate when temp. rises. Please reduce the ripple current when using capacitor.