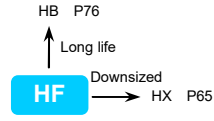


# HF 系列 SERIES



- 105 度标准品  
105°C Standard
- 保证 105°C、2000 小时寿命。(叠加纹波电流)  
Endurance with ripple current: 2000 hours at 105°C
- 额定工作电压范围: 16V~600V  
Rated voltage range: 16V-600V



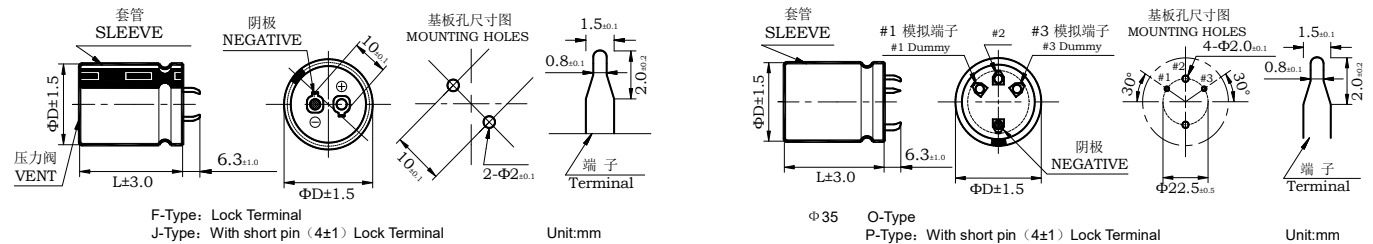
## 规格表 SPECIFICATIONS

项目 Items	特性 Characteristics																							
工作温度范围 Operating Temperature Range	-40~+105°C	-25~+105°C																						
额定工作电压范围 Rated Working Voltage Range	16~100V	160~600V																						
静电容量允许偏差 Capacitance Tolerance	±20% (20°C, 120Hz)																							
损耗角正切值 Dissipation Factor (MAX) 20°C, 120Hz	<table border="1"> <tr> <td>U<sub>R</sub>(V)</td> <td>16</td> <td>25</td> <td>35</td> <td>50</td> <td>63</td> <td>80</td> <td>100</td> <td>160~315</td> <td>350~400</td> <td>450~600</td> </tr> <tr> <td>tanδ</td> <td>0.50</td> <td>0.45</td> <td>0.40</td> <td>0.35</td> <td>0.30</td> <td>0.25</td> <td>0.20</td> <td>0.15</td> <td>0.18</td> <td>0.20</td> </tr> </table>		U <sub>R</sub> (V)	16	25	35	50	63	80	100	160~315	350~400	450~600	tanδ	0.50	0.45	0.40	0.35	0.30	0.25	0.20	0.15	0.18	0.20
U <sub>R</sub> (V)	16	25	35	50	63	80	100	160~315	350~400	450~600														
tanδ	0.50	0.45	0.40	0.35	0.30	0.25	0.20	0.15	0.18	0.20														
阻抗比 Impedance Ratio (MAX) 120Hz	<table border="1"> <tr> <td>U<sub>R</sub>(V)</td> <td>16~100</td> <td>160~200</td> <td>250</td> <td>315</td> <td>350~400</td> <td>450~600</td> </tr> <tr> <td>Z<sub>25°C</sub>/Z<sub>+20°C</sub></td> <td>4</td> <td>3</td> <td>4</td> <td>7</td> <td>7</td> <td>8</td> </tr> <tr> <td>Z<sub>40°C</sub>/Z<sub>+20°C</sub></td> <td>18</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>		U <sub>R</sub> (V)	16~100	160~200	250	315	350~400	450~600	Z <sub>25°C</sub> /Z <sub>+20°C</sub>	4	3	4	7	7	8	Z <sub>40°C</sub> /Z <sub>+20°C</sub>	18						
U <sub>R</sub> (V)	16~100	160~200	250	315	350~400	450~600																		
Z <sub>25°C</sub> /Z <sub>+20°C</sub>	4	3	4	7	7	8																		
Z <sub>40°C</sub> /Z <sub>+20°C</sub>	18																							
漏电流 Leakage Current (MAX)	I=0.01C <sub>R</sub> U <sub>R</sub> 或 1.5mA 取小者 (20°C, 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°C, After 5 minutes 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																							

	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	4000h	>180000h	2000h	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°C ≤1% Failure rate	U <sub>R</sub> 1.4×I <sub>R</sub> 40°C ≤1% Failure rate	U <sub>R</sub> I <sub>R</sub> 105°C 0%	U <sub>R</sub> =0 I <sub>R</sub> =0 105°C 0% Back up to 20 °C and placed more than 24 hours. U <sub>R</sub> to be applied for 60 min before measurement.

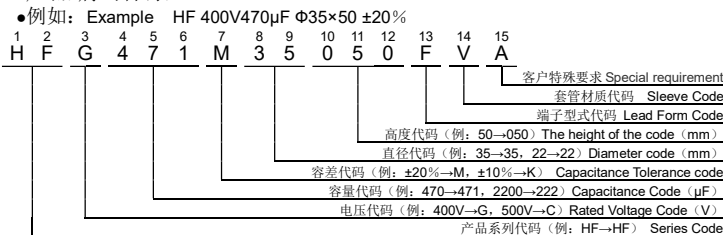
## 尺寸图 Dimensions

• 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 consult to us for the terminal type not displayed in content.

## 产品编码体系 PART NUMBER SYSTEM



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

电压范围 (v) Rated voltage	频率修正系数 Frequency Coefficient				
	50 (60)	100 (120)	300	1k	≥10k
16~50WV	0.90	1.00	1.10	1.15	1.15
63~100WV	0.85	1.00	1.17	1.32	1.45
160~600WV	0.80	1.00	1.16	1.30	1.41

电压范围 (v) Rated voltage	温度修正系数 Temperature coefficient				
	+40	+55	+70	+85	+105
16~600WV	2.7	2.5	2.1	1.7	1.0







# HF 系列 SERIES

## ◆ 产品一览表 Standard Ratings

WV <sub>DC</sub> (Surge Voltage) (V)	Cap ( $\mu$ F)	Size D×L (mm)	$\tan\delta$ 20°C 120Hz	Ripple Current 105°C 120Hz (Arms)	Catalog Part Number
350 (400)	180	25×35	0.18	0.89	HFH181M25035□VA
	180	30×25	0.18	0.85	HFH181M30025□VA
	220	22×50	0.18	0.93	HFH221M22050□VA
	220	25×40	0.18	0.97	HFH221M25040□VA
	220	30×30	0.18	0.96	HFH221M30030□VA
	220	35×25	0.18	0.98	HFH221M35025□VA
	270	25×50	0.18	1.16	HFH271M25050□VA
	270	30×35	0.18	1.14	HFH271M30035□VA
	270	35×30	0.18	1.14	HFH271M35030□VA
	330	25×45	0.18	1.22	HFH331M25045□VA
	330	30×45	0.18	1.34	HFH331M30045□VA
	330	35×35	0.18	1.34	HFH331M35035□VA
	390	30×50	0.18	1.54	HFH391M30050□VA
	390	35×40	0.18	1.54	HFH391M35040□VA
	470	30×50	0.18	1.68	HFH471M30050□VA
	470	35×45	0.18	1.76	HFH471M35045□VA
	560	30×60	0.18	1.98	HFH561M30060□VA
	560	35×50	0.18	1.95	HFH561M35050□VA
	680	35×55	0.18	2.20	HFH681M35055□VA
	820	35×60	0.18	2.56	HFH821M35060□VA
	1000	35×60	0.18	2.85	HFH102M35060□VA
	1000	35×65	0.18	2.90	HFH102M35065□VA
	1000	40×55	0.18	2.90	HFH102M40055□VA
	1200	35×75	0.18	3.60	HFH122M35075□VA
	1200	40×65	0.18	3.66	HFH122M40065□VA
	1500	40×80	0.18	4.36	HFH152M40080□VA
	1500	45×65	0.18	4.22	HFH152M45065□VA
	1800	40×95	0.18	5.12	HFH182M40095□VA
	1800	45×75	0.18	4.92	HFH182M45075□VA
	2200	45×90	0.18	5.80	HFH222M45090□VA
2200	50×75	0.18	5.60	HFH222M50075□VA	
2700	45×100	0.18	6.53	HFH272M45100□VA	
2700	50×90	0.18	6.61	HFH272M50090□VA	
3300	50×105	0.18	7.70	HFH332M50105□VA	
400 (450)	47	22×25	0.18	0.40	HFG470M22025□VA
	56	22×25	0.18	0.51	HFG560M22025□VA
	68	22×25	0.18	0.55	HFG680M22025□VA
	82	22×30	0.18	0.64	HFG820M22030□VA
	82	25×25	0.18	0.64	HFG820M25025□VA
	100	22×30	0.18	0.70	HFG101M22030□VA
	100	25×25	0.18	0.70	HFG101M25025□VA
	120	22×35	0.18	0.75	HFG121M22035□VA
	120	25×30	0.18	0.75	HFG121M25030□VA
	120	30×25	0.18	0.75	HFG121M30025□VA
	150	22×40	0.18	0.83	HFG151M22040□VA
	150	25×35	0.18	0.83	HFG151M25035□VA
	150	30×25	0.18	0.83	HFG151M30025□VA
	180	22×50	0.18	0.96	HFG181M22050□VA
	180	25×40	0.18	0.98	HFG181M25040□VA
	180	30×30	0.18	0.98	HFG181M30030□VA
	180	35×25	0.18	0.98	HFG181M35025□VA
	220	25×45	0.18	1.06	HFG221M25045□VA
	220	30×35	0.18	1.04	HFG221M30035□VA
	270	25×50	0.18	1.29	HFG271M25050□VA
	270	30×40	0.18	1.22	HFG271M30040□VA
	330	30×45	0.18	1.55	HFG331M30045□VA
	330	35×35	0.18	1.55	HFG331M35035□VA
	390	30×50	0.18	1.60	HFG391M30050□VA

WV <sub>DC</sub> (Surge Voltage) (V)	Cap ( $\mu$ F)	Size D×L (mm)	$\tan\delta$ 20°C 120Hz	Ripple Current 105°C 120Hz (Arms)	Catalog Part Number	
400 (450)	390	35×40	0.18	1.60	HFG391M35040□VA	
	470	30×60	0.18	1.90	HFG471M30060□VA	
	470	35×45	0.18	1.90	HFG471M35045□VA	
	560	35×50	0.18	2.12	HFG561M35050□VA	
	680	35×60	0.18	2.30	HFG681M35060□VA	
	820	35×65	0.18	2.70	HFG821M35065□VA	
	1000	35×70	0.18	3.00	HFG102M35070□VA	
	1000	40×65	0.18	3.20	HFG102M40065□VA	
	1200	35×90	0.18	3.80	HFG122M35090□VA	
	1200	40×80	0.18	3.90	HFG122M40080□VA	
	1200	45×60	0.18	3.70	HFG122M45060□VA	
	1500	40×90	0.18	4.20	HFG152M40090□VA	
	1500	45×75	0.18	4.40	HFG152M45075□VA	
	1500	50×70	0.18	4.70	HFG152M50070□VA	
	1800	45×90	0.18	5.40	HFG182M45090□VA	
	1800	50×80	0.18	5.40	HFG182M50080□VA	
	2200	50×90	0.18	6.20	HFG222M50090□VA	
	2700	50×105	0.18	7.00	HFG272M50105□VA	
	450 (500)	47	22×25	0.20	0.38	HFE470M22025□VA
		56	22×25	0.20	0.47	HFE560M22025□VA
68		22×30	0.20	0.56	HFE680M22030□VA	
68		25×25	0.20	0.56	HFE680M25025□VA	
82		22×35	0.20	0.64	HFE820M22035□VA	
82		25×30	0.20	0.64	HFE820M25030□VA	
100		22×40	0.20	0.70	HFE101M22040□VA	
100		25×30	0.20	0.70	HFE101M25030□VA	
100		30×25	0.20	0.78	HFE101M30025□VA	
120		22×45	0.20	0.73	HFE121M22045□VA	
120		25×35	0.20	0.73	HFE121M25035□VA	
120		30×30	0.20	0.73	HFE121M30030□VA	
150		22×50	0.20	0.78	HFE151M22050□VA	
150		25×40	0.20	0.82	HFE151M25040□VA	
150		30×30	0.20	0.83	HFE151M30030□VA	
150		35×25	0.20	0.86	HFE151M35025□VA	
180		25×45	0.20	0.88	HFE181M25045□VA	
180		30×35	0.20	0.88	HFE181M30035□VA	
180		35×30	0.20	0.88	HFE181M35030□VA	
220		25×50	0.20	0.94	HFE221M25050□VA	
220		30×40	0.20	0.96	HFE221M30040□VA	
220		35×30	0.20	0.92	HFE221M35030□VA	
270		30×45	0.20	1.20	HFE271M30045□VA	
270		35×35	0.20	1.18	HFE271M35035□VA	
330	30×50	0.20	1.40	HFE331M30050□VA		
330	35×40	0.20	1.39	HFE331M35040□VA		
390	30×55	0.20	1.58	HFE391M30055□VA		
390	35×45	0.20	1.58	HFE391M35045□VA		
470	35×50	0.20	1.83	HFE471M35050□VA		
560	35×60	0.20	2.10	HFE561M35060□VA		
680	35×65	0.20	2.40	HFE681M35065□VA		
680	40×60	0.20	2.50	HFE681M40060□VA		
820	35×75	0.20	2.88	HFE821M35075□VA		
820	40×65	0.20	2.90	HFE821M40065□VA		
1000	35×90	0.20	3.46	HFE102M35090□VA		
1000	40×80	0.20	3.54	HFE102M40080□VA		
1200	40×95	0.20	4.40	HFE122M40095□VA		
1200	45×75	0.20	4.10	HFE122M45075□VA		
1200	50×65	0.20	4.10	HFE122M50065□VA		
1500	40×100	0.20	4.80	HFE152M40100□VA		

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

# HF 系列 SERIES

## ◆ 产品一览表 Standard Ratings

WV <sub>DC</sub> (Surge Voltage) (V)	Cap ( $\mu$ F)	Size D×L (mm)	tan $\delta$ 20°C 120Hz	Ripple Current 105°C 120Hz (Arms)	Catalog Part Number
450 (500)	1500	45×90	0.20	4.90	HFE152M45090□VA
	1500	50×80	0.20	5.00	HFE152M50080□VA
	1800	50×95	0.20	5.60	HFE182M50095□VA
	2200	50×110	0.20	6.50	HFE222M50110□VA
500 (550)	39	22×30	0.20	0.35	HFC390M22030□VA
	47	22×35	0.20	0.42	HFC470M22035□VA
	56	22×40	0.20	0.47	HFC560M22040□VA
	68	22×45	0.20	0.54	HFC680M22045□VA
	68	25×30	0.20	0.54	HFC680M25030□VA
	82	22×50	0.20	0.62	HFC820M22050□VA
	82	25×40	0.20	0.62	HFC820M25040□VA
	100	25×45	0.20	0.67	HFC101M25045□VA
	100	30×30	0.20	0.62	HFC101M30030□VA
	120	25×50	0.20	0.77	HFC121M25050□VA
	120	30×35	0.20	0.72	HFC121M30035□VA
	120	35×30	0.20	0.72	HFC121M35030□VA
	150	30×40	0.20	0.85	HFC151M30040□VA
	150	35×35	0.20	0.85	HFC151M35035□VA
	180	30×45	0.20	0.93	HFC181M30045□VA
	180	35×40	0.20	0.93	HFC181M35040□VA
	220	30×50	0.20	1.12	HFC221M30050□VA
	220	35×45	0.20	1.12	HFC221M35045□VA
	270	30×55	0.20	1.29	HFC271M30055□VA
	270	35×50	0.20	1.29	HFC271M35050□VA
	330	35×60	0.20	1.62	HFC331M35060□VA
	470	35×60	0.20	2.00	HFC471M35060□VA
	560	35×65	0.20	2.20	HFC561M35065□VA
	560	40×55	0.20	2.20	HFC561M40055□VA
	680	35×75	0.20	2.60	HFC681M35075□VA
	680	40×70	0.20	2.70	HFC681M40070□VA
	820	40×75	0.20	3.10	HFC821M40075□VA
	820	45×60	0.20	3.00	HFC821M45060□VA

WV <sub>DC</sub> (Surge Voltage) (V)	Cap ( $\mu$ F)	Size D×L (mm)	tan $\delta$ 20°C 120Hz	Ripple Current 105°C 120Hz (Arms)	Catalog Part Number
500 (550)	1000	40×90	0.20	3.70	HFC102M40090□VA
	1000	45×75	0.20	3.60	HFC102M45075□VA
	1200	40×100	0.20	4.20	HFC122M40100□VA
	1200	45×85	0.20	4.10	HFC122M45085□VA
	1200	50×80	0.20	4.30	HFC122M50080□VA
	1500	45×100	0.20	4.80	HFC152M45100□VA
	1500	50×90	0.20	4.90	HFC152M50090□VA
	1800	50×105	0.20	5.60	HFC182M50105□VA
550 (600)	180	30×50	0.20	1.00	HFZ181M30050□VA
	220	30×60	0.20	1.20	HFZ221M30060□VA
	270	35×50	0.20	1.30	HFZ271M35050□VA
	330	35×60	0.20	1.50	HFZ331M35060□VA
	390	35×70	0.20	1.80	HFZ391M35070□VA
	390	40×60	0.20	1.80	HFZ391M40060□VA
	470	35×80	0.20	2.10	HFZ471M35080□VA
	470	40×70	0.20	2.10	HFZ471M40070□VA
	560	35×90	0.20	2.40	HFZ561M35090□VA
	560	40×80	0.20	2.40	HFZ561M40080□VA
	680	40×90	0.20	2.80	HFZ681M40090□VA
	680	45×70	0.20	2.70	HFZ681M45070□VA
	820	45×85	0.20	3.20	HFZ821M45085□VA
	820	50×70	0.20	3.10	HFZ821M50070□VA
	1000	45×100	0.20	3.80	HFZ102M45100□VA
	1000	50×80	0.20	3.60	HFZ102M50080□VA
1200	50×90	0.20	4.20	HFZ122M50090□VA	
600 (650)	180	35×45	0.20	0.92	HFB181M35045□VA
	220	35×50	0.20	1.08	HFB221M35050□VA
	270	35×60	0.20	1.30	HFB271M35060□VA
	330	35×70	0.20	1.50	HFB331M35070□VA
	470	35×80	0.20	1.92	HFB471M35080□VA
	560	40×100	0.20	2.44	HFB561M40100□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.