

# GF 系列 SERIES

Charge-discharge

High reliability

RoHS

● 应对 AC 伺服放大器、变频器再生引起的频繁的大电压变化。  
For frequently charge of regenerative voltage from AC servo amplifier and inverter control.

● 保证 115℃、2000 小时寿命。(叠加纹波电流)  
Endurance with ripple current: 2000 hours at 115℃

● 额定工作电压范围: 350V~450V  
Rated voltage range: 350V~450V

● 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.

GF

HF P56

High temperature



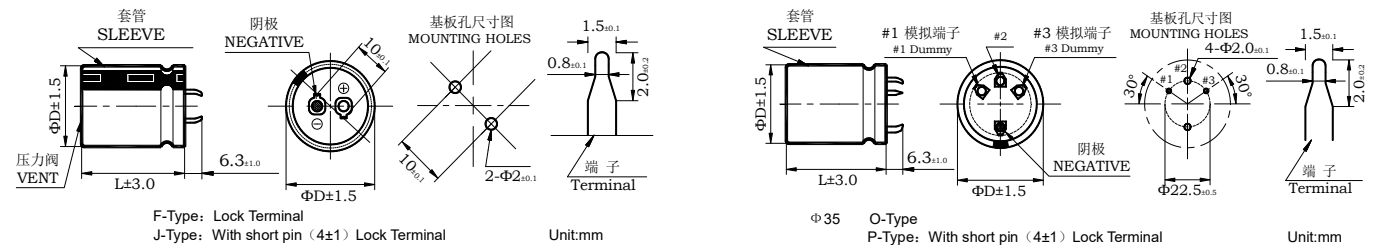
## 规格表 SPECIFICATIONS

项目 Items	特性 Characteristics					
工作温度范围 Operating Temperature Range	-25~+115℃					
额定工作电压范围 Rated Working Voltage Range	350~450V					
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)	350	400	420	450	
	tanδ	0.15	0.15	0.20	0.20	
阻抗比 Impedance Ratio (MAX) 120Hz	U <sub>R</sub> (V)	350	400	420	450	
	Z <sub>25℃</sub> /Z <sub>+20℃</sub>	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	6000h	>180000h	2000h	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> 115℃ ≤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> 115℃ 0%	U <sub>R</sub> I <sub>R</sub> =0 115℃ 0%	U <sub>R</sub> =0 I <sub>R</sub> =0 115℃ 0% Back up to 20℃ and placed more than 24 hours. U <sub>R</sub> to be applied for 60 min before measurement.

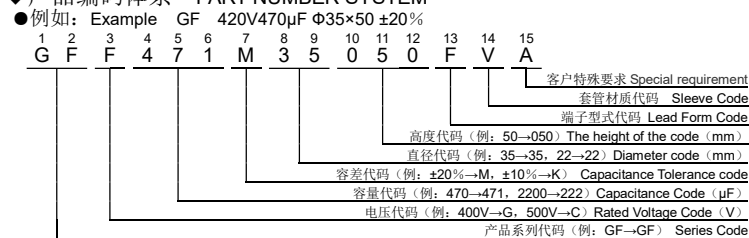
## 尺寸图 Dimensions

● 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 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

频率修正系数 Frequency coefficient		
电压范围 (v) Rated voltage	频率 (Hz) Frequency	
350~450VV	50 (60)	0.70
	100 (120)	1.00
	300	1.16
	1k	1.30
	≥10k	1.41

温度修正系数 Temperature coefficient		
电压范围 (v) Rated voltage	温度 (℃) Temperature	
350~450VV	+40	3.3
	+55	3.1
	+70	2.6
	+85	2.1
	+105	1.2
	+115	1.0

## ◆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	ESR <sub>typ</sub> 20°C 120Hz (m $\Omega$ )	Ripple Current 115°C/120Hz (Arms)	Catalog Part Number
350 (400)	68	22×30	0.15	1659	0.41	GFH680M22030□VA
	82	22×30	0.15	1376	0.45	GFH820M22030□VA
	100	22×30	0.15	1128	0.51	GFH101M22030□VA
	120	22×30	0.15	940	0.56	GFH121M22030□VA
	150	22×35	0.15	752	0.64	GFH151M22035□VA
	180	22×40	0.15	627	0.78	GFH181M22040□VA
	220	22×45	0.15	513	0.91	GFH221M22045□VA
	270	25×50	0.15	418	1.13	GFH271M25050□VA
	330	30×40	0.15	342	1.25	GFH331M30040□VA
	390	30×45	0.15	289	1.44	GFH391M30045□VA
	470	30×50	0.15	240	1.65	GFH471M30050□VA
	560	35×50	0.15	201	1.91	GFH561M35050□VA
	680	35×50	0.15	166	2.16	GFH681M35050□VA
	820	35×60	0.15	138	2.40	GFH821M35060□VA
1000	35×60	0.15	113	2.65	GFH102M35060□VA	
400 (450)	47	22×25	0.15	2400	0.33	GFG470M22025□VA
	68	22×30	0.15	1659	0.43	GFG680M22030□VA
	82	22×30	0.15	1376	0.47	GFG820M22030□VA
	100	22×35	0.15	1128	0.54	GFG101M22035□VA
	120	22×35	0.15	940	0.62	GFG121M22035□VA
	150	22×40	0.15	752	0.69	GFG151M22040□VA
	180	22×40	0.15	627	0.80	GFG181M22040□VA
	220	25×45	0.15	513	0.98	GFG221M25045□VA
	270	25×50	0.15	418	1.15	GFG271M25050□VA
	330	30×40	0.15	342	1.27	GFG331M30040□VA
	390	30×45	0.15	289	1.45	GFG391M30045□VA
	470	30×50	0.15	240	1.67	GFG471M30050□VA
	560	35×50	0.15	201	1.95	GFG561M35050□VA
	680	35×60	0.15	166	2.24	GFG681M35060□VA
820	35×70	0.15	138	2.56	GFG821M35070□VA	
1000	35×75	0.15	113	2.84	GFG102M35075□VA	

WV <sub>dc</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 115°C/120Hz (Arms)	Catalog Part Number
420 (470)	68	22×30	0.20	1854	0.45	GFF680M22030□VA
	82	22×30	0.20	1537	0.49	GFF820M22030□VA
	100	22×35	0.20	1261	0.56	GFF101M22035□VA
	120	22×40	0.20	1051	0.65	GFF121M22040□VA
	150	22×45	0.20	840	0.75	GFF151M22045□VA
	180	22×50	0.20	700	0.87	GFF181M22050□VA
	220	25×45	0.20	573	1.05	GFF221M25045□VA
	270	25×50	0.20	467	1.18	GFF271M25050□VA
	330	30×50	0.20	382	1.38	GFF331M30050□VA
	390	30×50	0.20	323	1.55	GFF391M30050□VA
	470	35×50	0.20	268	1.80	GFF471M35050□VA
	560	35×50	0.20	225	2.04	GFF561M35050□VA
	680	35×60	0.20	185	2.35	GFF681M35060□VA
	820	35×70	0.20	154	2.64	GFF821M35070□VA
1000	35×75	0.20	126	2.96	GFF102M35075□VA	
450 (500)	47	22×25	0.20	2682	0.36	GFE470M22025□VA
	68	22×30	0.20	1854	0.47	GFE680M22030□VA
	82	22×35	0.20	1537	0.55	GFE820M22035□VA
	100	22×40	0.20	1261	0.58	GFE101M22040□VA
	120	22×45	0.20	1051	0.67	GFE121M22045□VA
	150	22×50	0.20	840	0.78	GFE151M22050□VA
	180	25×45	0.20	700	0.91	GFE181M25045□VA
	220	25×50	0.20	573	1.09	GFE221M25050□VA
	270	30×50	0.20	467	1.24	GFE271M30050□VA
	330	30×50	0.20	382	1.44	GFE331M30050□VA
	390	35×50	0.20	323	1.64	GFE391M35050□VA
	470	35×50	0.20	268	1.85	GFE471M35050□VA
	560	35×60	0.20	225	2.16	GFE561M35060□VA
	680	35×70	0.20	185	2.51	GFE681M35070□VA
820	35×75	0.20	154	2.73	GFE821M35075□VA	
1000	35×85	0.20	126	3.09	GFE102M35085□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.