

# HX 系列 SERIES

Downsize

RoHS



HX

↑ Downsize  
HF P56

● 小型化产品  
Downsized

● 保证 105℃、2000 小时寿命。(叠加纹波电流)  
Endurance with ripple current: 2000 hours at 105℃

● 额定工作电压范围: 160V~450V  
Rated voltage range: 160V-450V

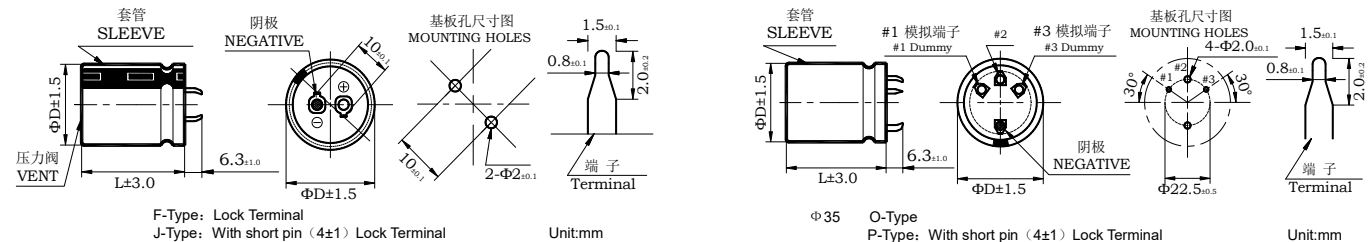
## ◆ 规格表 SPECIFICATIONS

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	160~450V							
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)	160	200	250	315	350	400	450
	tanδ	0.15	0.15	0.15	0.15	0.15	0.15	0.20
阻抗比 Impedance Ratio (MAX) 120Hz	U <sub>R</sub> (V)	160	200	250	315	350	400	450
	Z <sub>-25℃/20℃</sub>	4	4	4	7	7	7	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							

	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	3000h	>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 Tgδ 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> 1.4×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

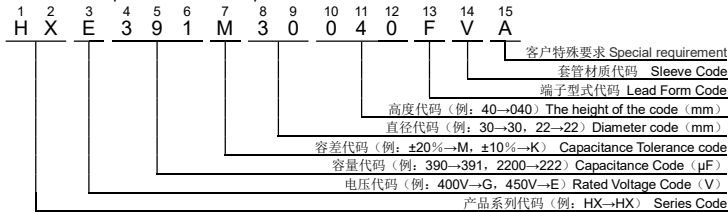
● 常用端子型式代码: Terminal Code



● 记载以外的端子形状, 请另行咨询。Please consult to us for the terminal type not displayed in content.

## ◆ 产品编码体系 PART NUMBER SYSTEM

● 例如: Example HX 450V390µF Φ30×40 ±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	50	0.80	1.00	1.17	1.32	1.45
	100	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
160~450VV	40	2.7	2.5	2.1	1.7	1.0
	55					

## ◆ 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 105°C 120Hz (Arms)	Catalog Part Number
160 (200)	560	22×30	0.15	245	1.58	HXN561M22030□VA
	680	22×35	0.15	202	1.83	HXN681M22035□VA
	820	22×40	0.15	168	2.03	HXN821M22040□VA
	820	25×30	0.15	168	1.93	HXN821M25030□VA
	1000	22×45	0.15	136	2.18	HXN102M22045□VA
	1000	25×35	0.15	136	2.10	HXN102M25035□VA
	1000	30×30	0.15	136	2.19	HXN102M30030□VA
	1200	22×50	0.15	112	2.31	HXN122M22050□VA
	1200	25×40	0.15	112	2.25	HXN122M25040□VA
	1500	25×45	0.15	92	2.40	HXN152M25045□VA
	1500	30×35	0.15	92	2.39	HXN152M30035□VA
	1800	25×55	0.15	75	2.62	HXN182M25055□VA
	1800	30×40	0.15	75	2.53	HXN182M30040□VA
	1800	35×30	0.15	75	2.47	HXN182M35030□VA
	2200	30×45	0.15	62	2.83	HXN222M30045□VA
	2200	35×35	0.15	62	2.79	HXN222M35035□VA
	2700	30×55	0.15	49	3.39	HXN272M30055□VA
	2700	35×40	0.15	49	3.23	HXN272M35040□VA
3300	35×45	0.15	40	3.68	HXN332M35045□VA	
200 (250)	470	22×30	0.15	294	1.20	HXL471M22030□VA
	470	25×25	0.15	294	1.20	HXL471M25025□VA
	560	22×30	0.15	245	1.48	HXL561M22030□VA
	680	22×35	0.15	202	1.53	HXL681M22035□VA
	680	25×30	0.15	202	1.60	HXL681M25030□VA
	820	22×40	0.15	168	1.75	HXL821M22040□VA
	820	25×35	0.15	168	1.75	HXL821M25035□VA
	1000	22×45	0.15	136	2.09	HXL102M22045□VA
	1000	25×40	0.15	136	2.00	HXL102M25040□VA
	1000	30×30	0.15	136	1.95	HXL102M30030□VA
	1200	25×45	0.15	112	2.30	HXL122M25045□VA
	1200	30×35	0.15	112	2.23	HXL122M30035□VA
	1200	35×25	0.15	112	2.21	HXL122M35025□VA
	1500	30×40	0.15	92	2.42	HXL152M30040□VA
	1500	35×30	0.15	92	2.36	HXL152M35030□VA
	1800	30×45	0.15	75	2.68	HXL182M30045□VA
	1800	35×35	0.15	75	2.64	HXL182M35035□VA
	2200	35×40	0.15	62	2.92	HXL222M35040□VA
2700	35×45	0.15	49	3.27	HXL272M35045□VA	
2700	35×50	0.15	49	3.33	HXL272M35050□VA	
250 (300)	330	22×30	0.15	402	1.21	HXJ331M22030□VA
	390	22×30	0.15	353	1.38	HXJ391M22030□VA
	470	22×35	0.15	294	1.56	HXJ471M22035□VA
	560	22×40	0.15	245	1.74	HXJ561M22040□VA
	560	25×35	0.15	245	1.77	HXJ561M25035□VA
	680	22×45	0.15	202	1.97	HXJ681M22045□VA
	680	25×35	0.15	202	1.90	HXJ681M25035□VA
	820	25×45	0.15	168	2.13	HXJ821M25045□VA
	820	30×35	0.15	168	2.12	HXJ821M30035□VA
	820	35×25	0.15	168	2.05	HXJ821M35025□VA
	1000	25×50	0.15	136	2.30	HXJ102M25050□VA
	1000	30×40	0.15	136	2.32	HXJ102M30040□VA
	1200	30×45	0.15	112	2.48	HXJ122M30045□VA
	1200	35×35	0.15	112	2.45	HXJ122M35035□VA
	1500	30×50	0.15	92	2.73	HXJ152M30050□VA
	1500	35×40	0.15	92	2.72	HXJ152M35040□VA
	1800	30×60	0.15	75	3.01	HXJ182M30060□VA
	1800	35×45	0.15	75	2.90	HXJ182M35045□VA
2200	35×50	0.15	62	3.08	HXJ222M35050□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 105°C 120Hz (Arms)	Catalog Part Number
315 (365)	180	22×25	0.15	605	0.75	HXI181M22025□VA
	220	22×30	0.15	495	0.82	HXI221M22030□VA
	270	22×30	0.15	403	0.92	HXI271M22030□VA
	270	25×25	0.15	403	0.92	HXI271M25025□VA
	330	22×35	0.15	331	1.08	HXI331M22035□VA
	330	25×30	0.15	331	1.09	HXI331M25030□VA
	390	22×40	0.15	279	1.22	HXI391M22040□VA
	390	25×35	0.15	279	1.23	HXI391M25035□VA
	470	22×45	0.15	232	1.44	HXI471M22045□VA
	470	25×40	0.15	232	1.47	HXI471M25040□VA
	470	30×30	0.15	232	1.45	HXI471M30030□VA
	560	25×45	0.15	194	1.65	HXI561M25045□VA
	560	30×35	0.15	194	1.65	HXI561M30035□VA
	680	25×50	0.15	160	1.81	HXI681M25050□VA
	680	30×40	0.15	160	1.78	HXI681M30040□VA
	680	35×30	0.15	202	2.06	HXI681M35030□VA
	820	30×45	0.15	133	1.95	HXI821M30045□VA
	820	35×35	0.15	133	1.92	HXI821M35035□VA
	1000	30×50	0.15	109	2.20	HXI102M30050□VA
	1000	35×40	0.15	109	2.19	HXI102M35040□VA
	1200	35×45	0.15	91	2.68	HXI122M35045□VA
350 (400)	150	22×25	0.15	725	0.84	HXH151M22025□VA
	220	22×30	0.15	495	1.04	HXH221M22030□VA
	220	25×25	0.15	495	1.04	HXH221M25025□VA
	270	22×35	0.15	403	1.17	HXH271M22035□VA
	270	25×30	0.15	403	1.18	HXH271M25030□VA
	330	22×40	0.15	331	1.34	HXH331M22040□VA
	330	25×35	0.15	331	1.36	HXH331M25035□VA
	390	22×45	0.15	279	1.49	HXH391M22045□VA
	390	25×40	0.15	279	1.52	HXH391M25040□VA
	390	30×30	0.15	279	1.50	HXH391M30030□VA
	470	25×45	0.15	232	1.71	HXH471M25045□VA
	560	25×50	0.15	194	1.83	HXH561M25050□VA
	560	30×40	0.15	194	1.84	HXH561M30040□VA
	560	35×30	0.15	194	1.80	HXH561M35030□VA
	680	30×45	0.15	160	1.97	HXH681M30045□VA
	680	35×35	0.15	160	1.94	HXH681M35035□VA
	820	30×50	0.15	133	2.26	HXH821M30050□VA
	820	35×40	0.15	133	2.25	HXH821M35040□VA
	1000	35×45	0.15	109	2.54	HXH102M35045□VA
	1200	35×50	0.15	94	2.86	HXH122M35050□VA
	400 (450)	150	22×25	0.15	934	0.75
180		22×30	0.15	627	0.94	HXG181M22030□VA
180		25×25	0.15	627	0.94	HXG181M25025□VA
220		22×30	0.15	513	1.02	HXG221M22030□VA
270		22×35	0.15	418	1.17	HXG271M22035□VA
270		25×30	0.15	418	1.18	HXG271M25030□VA
270		30×25	0.15	418	1.22	HXG271M30025□VA
330		22×40	0.15	342	1.30	HXG331M22040□VA
330		25×35	0.15	342	1.32	HXG331M25035□VA
330		30×30	0.15	342	1.38	HXG331M30030□VA
390		25×40	0.15	289	1.47	HXG391M25040□VA
390		30×30	0.15	289	1.45	HXG391M30030□VA
470		25×45	0.15	240	1.66	HXG471M25045□VA
470		30×35	0.15	240	1.66	HXG471M30035□VA
560		30×40	0.15	201	1.82	HXG561M30040□VA
560		35×30	0.15	201	1.76	HXG561M35030□VA
680		30×45	0.15	166	2.05	HXG681M30045□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>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 105°C 120Hz (Arms)	Catalog Part Number
400 (450)	680	35×35	0.15	166	2.03	HXG681M35035□VA
	820	35×40	0.15	138	2.19	HXG821M35040□VA
	1000	35×50	0.15	113	2.50	HXG102M35050□VA
450 (500)	100	22×25	0.20	1300	0.65	HXE101M22025□VA
	120	22×30	0.20	1083	0.72	HXE121M22030□VA
	150	22×30	0.20	867	0.75	HXE151M22030□VA
	150	25×25	0.20	867	0.75	HXE151M25025□VA
	180	22×35	0.20	723	0.82	HXE181M22035□VA
	180	25×30	0.20	723	0.82	HXE181M25030□VA
	220	22×40	0.20	591	0.90	HXE221M22040□VA
	220	25×30	0.20	591	0.86	HXE221M25030□VA
	220	30×25	0.20	591	0.89	HXE221M30025□VA
	270	22×45	0.20	482	1.10	HXE271M22045□VA
	270	25×35	0.20	482	1.05	HXE271M25035□VA
	270	30×30	0.20	482	1.06	HXE271M30030□VA
	330	25×45	0.20	394	1.25	HXE331M25045□VA
	330	30×35	0.20	394	1.25	HXE331M30035□VA
	390	30×40	0.20	333	1.43	HXE391M30040□VA
	390	35×30	0.20	333	1.39	HXE391M35030□VA
	470	30×45	0.20	277	1.68	HXE471M30045□VA
	470	35×35	0.20	277	1.66	HXE471M35035□VA
560	35×40	0.20	232	1.95	HXE561M35040□VA	
680	35×45	0.20	191	2.15	HXE681M35045□VA	

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\*□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.