

HX SERIES

Downsized

RoHS

● Downsized

● Endurance with ripple current: 2000 hours at 105°C

● Rated voltage range: 160V-450V

HX

↑ Downsized
HF P14



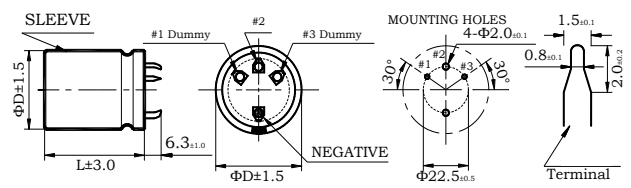
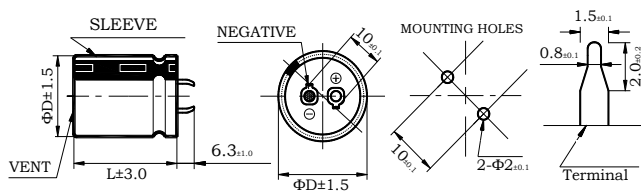
◆ SPECIFICATIONS

Items	Characteristics																
Operating Temperature Range	-25~+105°C																
Rated Working Voltage Range	160~450V																
Capacitance Tolerance	±20% (20°C, 120Hz)																
Dissipation Factor (MAX) 20°C, 120Hz	<table border="1"> <tr> <td>U_R(V)</td> <td>160</td> <td>200</td> <td>250</td> <td>315</td> <td>350</td> <td>400</td> <td>450</td> </tr> <tr> <td>tanδ</td> <td>0.15</td> <td>0.15</td> <td>0.15</td> <td>0.15</td> <td>0.18</td> <td>0.18</td> <td>0.20</td> </tr> </table>	U _R (V)	160	200	250	315	350	400	450	tanδ	0.15	0.15	0.15	0.15	0.18	0.18	0.20
U _R (V)	160	200	250	315	350	400	450										
tanδ	0.15	0.15	0.15	0.15	0.18	0.18	0.20										
Impedance Ratio (MAX) 120Hz	<table border="1"> <tr> <td>U_R(V)</td> <td>160</td> <td>200</td> <td>250</td> <td>315</td> <td>350</td> <td>400</td> <td>450</td> </tr> <tr> <td>Z-25°C/20°C</td> <td>4</td> <td>4</td> <td>4</td> <td>7</td> <td>7</td> <td>7</td> <td>8</td> </tr> </table>	U _R (V)	160	200	250	315	350	400	450	Z-25°C/20°C	4	4	4	7	7	7	8
U _R (V)	160	200	250	315	350	400	450										
Z-25°C/20°C	4	4	4	7	7	7	8										
Leakage Current (MAX)	I=0.01C _R U _R or 1.5mA whichever is minimum. (at 20°C, After 5minutes application of rated voltage) I=Leakage Current(µA) U _R =Rated Voltage(V) C _R =Rated Capacitance(µF)																

	Useful Life	Load Life	Endurance Test	Shelf Life
Life Time	3000h	>180000h	2000h	1000h
Leakage Current	≤ Specified value	≤ Specified value	≤ Specified value	≤ Specified value
Tgδ Change	≤300% of specified value	≤200% of specified value	≤ 200% of specified value	≤ 200% of specified value
Capacitance Change	Within ±30% of initial value	Within ±20% of initial value	Within ±20% of initial value	Within ±20% of initial value
Condition Applied Voltage Applied Ripple Current Applied Temperature Failure Rate Level	U _R I _R 105°C ≤1% Failure rate	U _R 1.4×I _R 40°C ≤1% Failure rate	U _R I _R 105°C 0%	U _R =0 I _R =0 105°C 0% Back up to 20 °C and placed more than 24 hours. U _R to be applied for 60 min before measurement.

◆ Dimensions

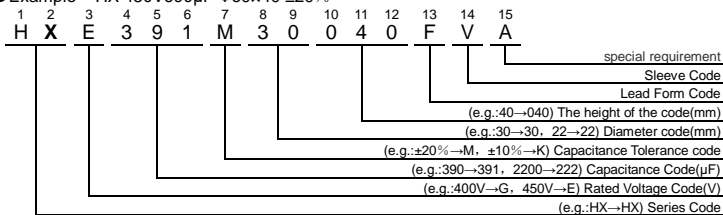
● Terminal Code



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

◆ PART NUMBER SYSTEM

● Example HX 450V390µF Φ30x40 ±20%



◆ Rated Ripple Current Multiplies

● Frequency coefficient

Rated voltage	Frequency (Hz)				
	50 (60)	100 (120)	300	1k	≥10k
160~250VV	0.80	1.00	1.17	1.32	1.45
315~450VV	0.70	1.00	1.16	1.30	1.41

● Temperature coefficient

Rated voltage (v)	Temperature (°C)				
	+40	+55	+70	+85	+105
160~450VV	2.7	2.5	2.1	1.7	1.0

HX SERIES

◆ Standard Ratings

WV _{DC} (Surge Voltage) (V)	Cap (μF)	Size D×L (mm)	tanδ 20°C 120Hz	Ripple Current 105°C 120Hz (Arms)	Catalog Part Number
160 (200)	560	22×25	0.15	1.58	HXN561M22025□
	680	22×30	0.15	1.83	HXN681M22030□
	820	22×35	0.15	2.06	HXN821M22035□
	820	25×25	0.15	1.89	HXN821M25025□
	1000	22×40	0.15	2.33	HXN102M22040□
	1000	25×30	0.15	2.15	HXN102M25030□
	1000	30×25	0.15	1.90	HXN102M30025□
	1200	22×45	0.15	2.61	HXN122M22045□
	1200	22×50	0.15	2.69	HXN122M22050□
	1200	25×35	0.15	2.45	HXN122M25035□
	1500	25×40	0.15	2.82	HXN152M25040□
	1500	25×45	0.15	2.88	HXN152M25045□
	1500	30×30	0.15	2.39	HXN152M30030□
	1500	35×25	0.15	2.17	HXN152M35025□
	1800	25×50	0.15	3.22	HXN182M25050□
	1800	30×35	0.15	2.73	HXN182M30035□
	1800	30×40	0.15	2.82	HXN182M30040□
	1800	35×30	0.15	2.47	HXN182M35030□
	2200	30×45	0.15	3.23	HXN222M30045□
	2200	35×35	0.15	2.79	HXN222M35035□
2700	30×50	0.15	3.66	HXN272M30050□	
2700	35×40	0.15	3.23	HXN272M35040□	
3300	35×45	0.15	3.68	HXN332M35045□	
3900	35×50	0.15	4.12	HXN392M35050□	
200 (250)	470	22×25	0.15	1.20	HXL471M22025□
	560	22×30	0.15	1.48	HXL561M22030□
	560	25×25	0.15	1.48	HXL561M25025□
	680	22×35	0.15	1.62	HXL681M22035□
	680	25×30	0.15	1.60	HXL681M25030□
	820	22×40	0.15	1.75	HXL821M22040□
	820	25×35	0.15	1.75	HXL821M25035□
	820	30×25	0.15	1.75	HXL821M30025□
	1000	22×50	0.15	2.19	HXL102M22050□
	1000	25×40	0.15	2.04	HXL102M25040□
	1000	30×30	0.15	1.95	HXL102M30030□
	1200	25×45	0.15	2.30	HXL122M25045□
	1200	30×35	0.15	2.23	HXL122M30035□
	1200	35×25	0.15	1.94	HXL122M35025□
	1500	25×50	0.15	2.57	HXL152M25050□
	1500	30×40	0.15	2.57	HXL152M30040□
	1500	35×30	0.15	2.25	HXL152M35030□
	1800	30×45	0.15	2.68	HXL182M30045□
	1800	35×35	0.15	2.53	HXL182M35035□
	2200	35×50	0.15	2.92	HXL222M35050□
2200	35×40	0.15	2.92	HXL222M35040□	
2700	35×45	0.15	3.27	HXL272M35045□	
2700	35×50	0.15	3.33	HXL272M35050□	
250 (300)	330	22×25	0.15	1.21	HXJ331M22025□
	390	22×30	0.15	1.38	HXJ391M22030□
	470	22×35	0.15	1.56	HXJ471M22035□
	560	22×40	0.15	1.74	HXJ561M22040□
	560	25×30	0.15	1.61	HXJ561M25030□
	680	22×45	0.15	1.97	HXJ681M22045□
	680	25×35	0.15	1.85	HXJ681M25035□
	820	25×40	0.15	2.08	HXJ821M25040□
	820	25×45	0.15	2.13	HXJ821M25045□
	820	30×30	0.15	1.77	HXJ821M30030□
820	35×25	0.15	1.60	HXJ821M35025□	

WV _{DC} (Surge Voltage) (V)	Cap (μF)	Size D×L (mm)	tanδ 20°C 120Hz	Ripple Current 105°C 120Hz (Arms)	Catalog Part Number
250 (300)	1000	25×50	0.15	2.40	HXJ102M25050□VA
	1000	30×35	0.15	2.03	HXJ102M30035□VA
	1200	30×40	0.15	2.31	HXJ122M30040□VA
	1200	30×45	0.15	2.38	HXJ122M30045□VA
	1200	35×35	0.15	2.06	HXJ122M35035□VA
	1500	30×50	0.15	2.73	HXJ152M30050□VA
	1500	35×40	0.15	2.41	HXJ152M35040□VA
	1800	35×45	0.15	2.72	HXJ182M35045□VA
	2200	35×50	0.15	3.10	HXJ222M35050□VA
	315 (365)	180	22×25	0.15	0.91
220		22×30	0.15	1.06	HXI221M22030□VA
270		22×35	0.15	1.20	HXI271M22035□VA
270		25×25	0.15	1.15	HXI271M25025□VA
330		22×40	0.15	1.37	HXI331M22040□VA
330		25×30	0.15	1.30	HXI331M25030□VA
390		22×45	0.15	1.52	HXI391M22045□VA
390		25×35	0.15	1.48	HXI391M25035□VA
390		30×25	0.15	1.39	HXI391M30025□VA
470		22×50	0.15	1.72	HXI471M22050□VA
470		25×40	0.15	1.67	HXI471M25040□VA
470		30×30	0.15	1.57	HXI471M30030□VA
470		35×25	0.15	1.52	HXI471M35025□VA
560		25×45	0.15	1.86	HXI561M25045□VA
560		30×35	0.15	1.78	HXI561M30035□VA
680		25×50	0.15	2.10	HXI681M25050□VA
680		30×40	0.15	2.03	HXI681M30040□VA
680		35×30	0.15	1.90	HXI681M35030□VA
820		30×45	0.15	2.31	HXI821M35045□VA
820		35×35	0.15	2.13	HXI821M35035□VA
1000	30×50	0.15	2.61	HXI102M30050□VA	
1000	35×40	0.15	2.46	HXI102M35040□VA	
1200	35×45	0.15	2.78	HXI122M35045□VA	
1200	35×50	0.15	2.86	HXI122M35050□VA	
350 (400)	150	22×35	0.18	0.84	HXH151M22035□
	220	22×30	0.18	1.06	HXH221M22030□
	220	25×25	0.18	1.04	HXH221M25025□
	270	22×35	0.18	1.20	HXH271M22035□
	270	25×30	0.18	1.18	HXH271M25030□
	330	22×40	0.18	1.37	HXH331M22040□
	330	22×45	0.18	1.40	HXH331M22045□
	330	25×35	0.18	1.36	HXH331M25035□
	330	30×25	0.18	1.28	HXH331M30025□
	390	22×50	0.18	1.56	HXH391M22050□
	390	25×40	0.18	1.52	HXH391M25040□
	390	30×30	0.18	1.43	HXH391M30030□
	390	35×25	0.18	1.38	HXH391M35025□
	470	25×45	0.18	1.71	HXH471M25045□
	560	25×50	0.18	1.90	HXH561M25050□
	560	30×35	0.18	1.78	HXH561M30035□
	560	30×40	0.18	1.84	HXH561M30040□
	560	35×30	0.18	1.72	HXH561M35030□
	680	30×45	0.18	2.10	HXH681M30045□
	680	35×35	0.18	1.94	HXH681M35035□
820	30×50	0.18	2.26	HXH821M30050□	
820	35×40	0.18	2.23	HXH821M35040□	
1000	35×45	0.18	2.54	HXH102M35045□	
1200	35×50	0.18	2.86	HXH122M35050□	

*□Enter the appropriate terminal code

HX SERIES

◆ Standard Ratings

WV _{DC} (Surge Voltage) (V)	Cap (μ F)	Size D×L (mm)	tan δ 20°C 120Hz	Ripple Current 105°C 120Hz (Arms)	Catalog Part Number	WV _{DC} (Surge Voltage) (V)	Cap (μ F)	Size D×L (mm)	tan δ 20°C 120Hz	Ripple Current 105°C 120Hz (Arms)	Catalog Part Number
400 (450)	120	22×35	0.18	0.75	HXG121M22035□VA	450 (500)	100	22×25	0.20	0.71	HXE101M22025□VA
	180	22×30	0.18	0.96	HXG181M22030□VA		120	22×30	0.20	0.82	HXE121M22030□VA
	180	25×25	0.18	0.94	HXG181M25025□VA		150	22×35	0.20	0.94	HXE151M22035□VA
	220	22×35	0.18	1.09	HXG221M22035□VA		150	25×25	0.20	0.89	HXE151M25025□VA
	220	25×30	0.18	1.07	HXG221M25030□VA		180	22×40	0.20	1.05	HXE181M22040□VA
	270	22×40	0.18	1.24	HXG271M22040□VA		180	25×30	0.20	1.00	HXE181M25030□VA
	270	22×45	0.18	1.26	HXG271M22045□VA		220	22×45	0.20	1.19	HXE221M22045□VA
	270	25×35	0.18	1.23	HXG271M25035□VA		220	25×35	0.20	1.16	HXE221M25035□VA
	270	30×25	0.18	1.16	HXG271M30025□VA		220	30×25	0.20	1.11	HXE221M30025□VA
	330	22×50	0.18	1.44	HXG331M22050□VA		270	22×50	0.20	1.36	HXE271M22050□VA
	330	25×40	0.18	1.40	HXG331M25040□VA		270	25×40	0.20	1.32	HXE271M25040□VA
	330	30×30	0.18	1.31	HXG331M30030□VA		270	25×45	0.20	1.35	HXE271M25045□VA
	330	35×25	0.18	1.27	HXG331M35025□VA		270	30×30	0.20	1.26	HXE271M30030□VA
	390	25×45	0.18	1.55	HXG391M25045□VA		270	35×25	0.20	1.26	HXE271M35025□VA
	390	30×35	0.18	1.49	HXG391M30035□VA		330	25×50	0.20	1.52	HXE331M25050□VA
	470	25×50	0.18	1.74	HXG471M25050□VA		330	30×35	0.20	1.45	HXE331M30035□VA
	470	30×40	0.18	1.69	HXG471M30040□VA		330	35×30	0.20	1.45	HXE331M35030□VA
	470	35×30	0.18	1.58	HXG471M35030□VA		390	30×40	0.20	1.63	HXE391M30040□VA
	560	30×45	0.18	1.91	HXG561M30045□VA		470	30×45	0.20	1.85	HXE471M30045□VA
	560	35×35	0.18	1.76	HXG561M35035□VA		470	30×50	0.20	1.90	HXE471M30050□VA
680	30×50	0.18	2.15	HXG681M30050□VA	470	35×35	0.20	1.77	HXE471M35035□VA		
680	35×40	0.18	2.03	HXG681M35040□VA	560	35×40	0.20	2.02	HXE561M35040□VA		
820	35×45	0.18	2.30	HXG821M35045□VA	560	35×45	0.20	2.08	HXE561M35045□VA		
820	35×50	0.18	2.37	HXG821M35050□VA	680	35×50	0.20	2.36	HXE681M35050□VA		
1000	35×50	0.18	2.60	HXG102M35050□VA							

*□Enter the appropriate terminal code

* Please ask for advice for other sizes.

*Aluminum electrolytic capacitor will emit heat when ripple current is applied, the performance will deteriorate when temp. rises. the useful life will be half of original life when temp rises every 5°C. Please reduce the ripple current when using capacitor.