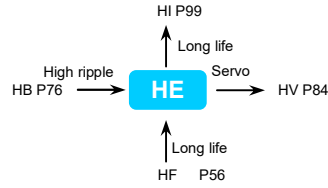


HE 系列 SERIES



- 保证 105℃、3000 小时寿命。(叠加纹波电流)
Endurance with ripple current: 3000 hours at 105℃
- 大纹波电流品。
High Ripple
- 额定工作电压范围: 160V~500V
Rated voltage range: 160V-500V
- 适合转换电源及通用变频器等平滑用。
Ideal for switching power and inverter smoothing capacitors.



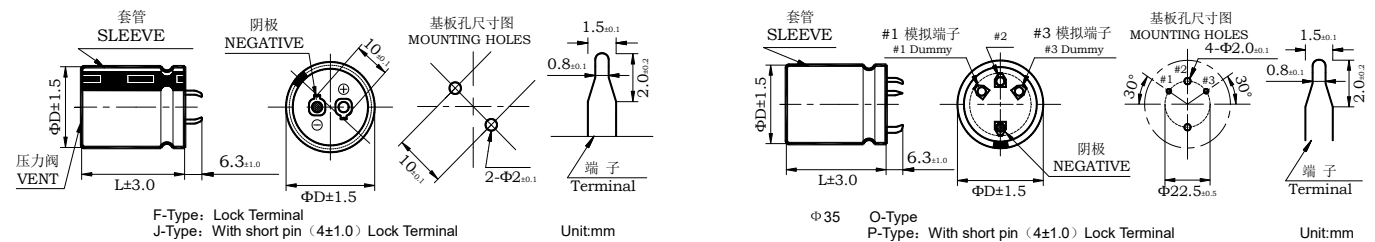
规格表 SPECIFICATIONS

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	<table border="1"> <tr> <td>U_R(V)</td> <td>160</td> <td>200</td> <td>250</td> <td>350</td> <td>400</td> <td>450</td> <td>500</td> </tr> <tr> <td>tanδ</td> <td>0.15</td> <td>0.15</td> <td>0.15</td> <td>0.15</td> <td>0.15</td> <td>0.20</td> <td>0.20</td> </tr> </table>	U _R (V)	160	200	250	350	400	450	500	tanδ	0.15	0.15	0.15	0.15	0.15	0.20	0.20
U _R (V)	160	200	250	350	400	450	500										
tanδ	0.15	0.15	0.15	0.15	0.15	0.20	0.20										
阻抗比 Impedance Ratio (MAX) 120Hz	<table border="1"> <tr> <td>U_R(V)</td> <td>160</td> <td>200</td> <td>250</td> <td>350</td> <td>400</td> <td>450</td> <td>500</td> </tr> <tr> <td>Z_{-25℃}/Z_{+20℃}</td> <td>4</td> <td>4</td> <td>4</td> <td>7</td> <td>7</td> <td>8</td> <td>8</td> </tr> </table>	U _R (V)	160	200	250	350	400	450	500	Z _{-25℃} /Z _{+20℃}	4	4	4	7	7	8	8
U _R (V)	160	200	250	350	400	450	500										
Z _{-25℃} /Z _{+20℃}	4	4	4	7	7	8	8										
漏电流 Leakage Current (MAX)	I=0.01C _R U _R 或 1.5mA 取小者 (20℃, 施加额定电压 5 分钟后) I=0.01C _R U _R or 1.5mA whichever is minimum. (at 20℃, After 5 minutes application of rated voltage) I=漏电流 (μA) U _R =额定电压 (V) C _R =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	5000h	>180000h	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 _R I _R 105℃ ≤1% Failure rate	U _R 1.4×I _R 40℃ ≤1% Failure rate	U _R I _R 105℃ 0%	U _R =0 I _R =0 105℃ 0% Back up to 20℃ and placed more than 24 hours. U _R to be applied for 60 min before measurement.

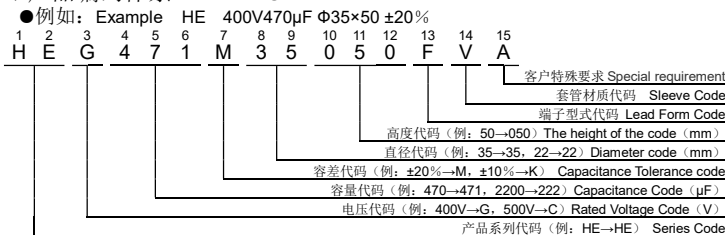
尺寸图 Dimensions

- 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



纹波电流修正系数 Rated Ripple Current Multiplies

频率修正系数 Frequency coefficient	频率 (Hz) Frequency				
电压范围 (V) Rated voltage	50 (60)	100 (120)	300	1k	≥10k
160~250WV	0.80	1.00	1.17	1.32	1.45
350~500WV	0.80	1.00	1.16	1.30	1.41

温度修正系数 Temperature coefficient	温度 (℃) Temperature				
电压范围 (V) Rated voltage	+40	+55	+70	+85	+105
160~500WV	2.7	2.5	2.1	1.7	1.0

HE 系列 SERIES

◆ 产品一览表 Standard Ratings

WV _{DC} (Surge Voltage) (V)	Cap (μ F)	Size D×L (mm)	tan δ 20°C 120Hz	ESR _{typ} 20°C 120Hz m Ω	Ripple Current 105°C 120Hz (Arms)	Catalog Part Number
160 (200)	330	22×25	0.15	342	1.60	HEN331M22025□VA
	390	25×25	0.15	289	1.70	HEN391M25025□VA
	470	22×35	0.15	240	1.80	HEN471M22035□VA
	560	22×35	0.15	201	1.90	HEN561M22035□VA
	560	25×30	0.15	201	1.90	HEN561M25030□VA
	560	30×25	0.15	201	1.97	HEN561M30025□VA
	680	22×40	0.15	166	2.20	HEN681M22040□VA
	680	25×35	0.15	166	2.23	HEN681M25035□VA
	820	22×50	0.15	138	2.50	HEN821M22050□VA
	820	25×40	0.15	138	2.43	HEN821M25040□VA
	820	30×30	0.15	138	2.40	HEN821M30030□VA
	820	35×25	0.15	138	2.46	HEN821M35025□VA
	1000	25×45	0.15	113	2.70	HEN102M25045□VA
	1000	30×35	0.15	113	2.70	HEN102M30035□VA
	1000	35×30	0.15	113	2.78	HEN102M35030□VA
	1200	25×50	0.15	94	3.00	HEN122M25050□VA
	1200	30×40	0.15	94	3.00	HEN122M30040□VA
	1200	35×35	0.15	94	3.13	HEN122M35035□VA
	1500	30×45	0.15	75	3.60	HEN152M30045□VA
	1500	35×40	0.15	75	3.75	HEN152M35040□VA
1800	35×45	0.15	63	4.20	HEN182M35045□VA	
2200	35×50	0.15	51	4.90	HEN222M35050□VA	
200 (250)	220	22×25	0.15	531	1.30	HEL221M22025□VA
	270	22×25	0.15	433	1.37	HEL271M22025□VA
	330	22×30	0.15	354	1.60	HEL331M22030□VA
	330	25×25	0.15	354	1.60	HEL331M25025□VA
	390	22×30	0.15	299	1.65	HEL391M22030□VA
	470	22×35	0.15	249	1.75	HEL471M22035□VA
	470	25×30	0.15	249	1.75	HEL471M25030□VA
	470	30×25	0.15	249	1.80	HEL471M30025□VA
	560	22×45	0.15	209	1.85	HEL561M22045□VA
	560	25×35	0.15	209	1.85	HEL561M25035□VA
	680	22×50	0.15	172	2.18	HEL681M22050□VA
	680	25×40	0.15	172	2.12	HEL681M25040□VA
	680	30×30	0.15	172	2.09	HEL681M30030□VA
	680	35×25	0.15	172	2.14	HEL681M35025□VA
	820	25×45	0.15	142	2.40	HEL821M25045□VA
	820	30×35	0.15	142	2.40	HEL821M30035□VA
	820	35×30	0.15	142	2.47	HEL821M35030□VA
	1000	30×40	0.15	117	2.60	HEL102M30040□VA
	1000	35×35	0.15	117	2.70	HEL102M35035□VA
	1200	30×45	0.15	97	2.95	HEL122M30045□VA
1200	35×40	0.15	97	3.07	HEL122M35040□VA	
1500	35×40	0.15	78	3.40	HEL152M35040□VA	
1800	35×45	0.15	65	4.00	HEL182M35045□VA	
2200	35×50	0.15	53	4.70	HEL222M35050□VA	
250 (300)	180	22×25	0.15	664	1.20	HEJ181M22025□VA
	220	22×30	0.15	543	1.30	HEJ221M22030□VA
	220	25×25	0.15	543	1.30	HEJ221M25025□VA
	270	22×35	0.15	442	1.40	HEJ271M22035□VA
	330	22×40	0.15	362	1.50	HEJ331M22040□VA
	330	25×30	0.15	362	1.43	HEJ331M25030□VA
	330	30×25	0.15	362	1.48	HEJ331M30025□VA
	390	22×45	0.15	306	1.65	HEJ391M22045□VA
	390	25×35	0.15	306	1.59	HEJ391M25035□VA
	470	22×50	0.15	254	1.85	HEJ471M22050□VA
	470	30×30	0.15	254	1.78	HEJ471M30030□VA
	470	35×25	0.15	254	1.82	HEJ471M35025□VA

WV _{DC} (Surge Voltage) (V)	Cap (μ F)	Size D×L (mm)	tan δ 20°C 120Hz	ESR _{typ} 20°C 120Hz m Ω	Ripple Current 105°C 120Hz (Arms)	Catalog Part Number	
250 (300)	560	25×45	0.15	213	2.05	HEJ561M25045□VA	
	560	30×35	0.15	213	2.04	HEJ561M30035□VA	
	560	35×30	0.15	213	2.11	HEJ561M35030□VA	
	680	25×50	0.15	176	2.35	HEJ681M25050□VA	
	680	30×40	0.15	176	2.35	HEJ681M30040□VA	
	820	30×45	0.15	146	2.70	HEJ821M30045□VA	
	820	35×35	0.15	146	2.66	HEJ821M35035□VA	
	1000	30×50	0.15	119	3.10	HEJ102M30050□VA	
	1000	35×40	0.15	119	3.10	HEJ102M35040□VA	
	1200	35×45	0.15	100	3.50	HEJ122M35045□VA	
	1500	35×50	0.15	80	4.00	HEJ152M35050□VA	
	350 (400)	68	22×25	0.15	1464	0.90	HEH680M22025□VA
		100	22×30	0.15	995	0.98	HEH101M22030□VA
		100	25×25	0.15	995	0.98	HEH101M25025□VA
		120	22×35	0.15	829	1.05	HEH121M22035□VA
150		22×40	0.15	664	1.15	HEH151M22040□VA	
150		25×30	0.15	664	1.09	HEH151M25030□VA	
150		30×25	0.15	664	1.13	HEH151M30025□VA	
180		22×45	0.15	553	1.25	HEH181M22045□VA	
180		25×35	0.15	553	1.21	HEH181M25035□VA	
180		30×30	0.15	553	1.26	HEH181M30030□VA	
220		22×50	0.15	452	1.36	HEH221M22050□VA	
220		25×40	0.15	452	1.32	HEH221M25040□VA	
220		35×25	0.15	452	1.34	HEH221M35025□VA	
270		25×50	0.15	369	1.50	HEH271M25050□VA	
270		30×35	0.15	369	1.43	HEH271M30035□VA	
270	35×30	0.15	369	1.49	HEH271M35030□VA		
330	30×45	0.15	302	1.67	HEH331M30045□VA		
330	35×35	0.15	302	1.65	HEH331M35035□VA		
390	30×50	0.15	255	1.78	HEH391M30050□VA		
390	35×40	0.15	255	1.77	HEH391M35040□VA		
470	35×45	0.15	212	1.89	HEH471M35045□VA		
560	35×50	0.15	178	2.09	HEH561M35050□VA		
400 (450)	68	22×25	0.15	1268	0.68	HEG680M22025□VA	
	82	22×30	0.15	1052	0.77	HEG820M22030□VA	
	82	25×25	0.15	1052	0.77	HEG820M25025□VA	
	100	22×35	0.15	863	0.85	HEG101M22035□VA	
	100	25×25	0.15	863	0.80	HEG101M25025□VA	
	120	22×35	0.15	719	0.90	HEG121M22035□VA	
	120	25×30	0.15	719	0.91	HEG121M25030□VA	
	120	30×25	0.15	719	0.94	HEG121M30025□VA	
	150	22×40	0.15	575	1.05	HEG151M22040□VA	
	150	25×35	0.15	575	1.07	HEG151M25035□VA	
	150	30×25	0.15	575	1.04	HEG151M30025□VA	
	180	22×50	0.15	479	1.20	HEG181M22050□VA	
	180	25×40	0.15	479	1.17	HEG181M25040□VA	
	180	30×30	0.15	479	1.15	HEG181M30030□VA	
	180	35×25	0.15	479	1.18	HEG181M35025□VA	
220	25×45	0.15	392	1.35	HEG221M25045□VA		
220	30×35	0.15	392	1.35	HEG221M30035□VA		
220	35×30	0.15	392	1.39	HEG221M35030□VA		
270	25×50	0.15	319	1.55	HEG271M25050□VA		
270	30×40	0.15	319	1.56	HEG271M30040□VA		
270	35×30	0.15	319	1.52	HEG271M35030□VA		
330	30×45	0.15	261	1.78	HEG331M30045□VA		
330	35×35	0.15	261	1.76	HEG331M35035□VA		
390	30×50	0.15	221	2.00	HEG391M30050□VA		
390	35×40	0.15	221	2.00	HEG391M35040□VA		

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

HE 系列 SERIES

◆ 产品一览表 Standard Ratings

WV _{DC} (Surge Voltage) (V)	Cap (μ F)	Size D×L (mm)	tan δ 20°C 120Hz	ESR _{typ} 20°C 120Hz m Ω	Ripple Current 105°C 120Hz (Arms)	Catalog Part Number
400 (450)	470	35×45	0.18	184	2.23	HEG471M35045□VA
	560	35×50	0.18	154	2.50	HEG561M35050□VA
450 (500)	56	22×25	0.20	1540	0.60	HEE560M22025□VA
	68	22×30	0.20	1268	0.70	HEE680M22030□VA
	82	22×35	0.20	1052	0.80	HEE820M22035□VA
	100	22×35	0.20	863	0.90	HEE101M22035□VA
	100	25×30	0.20	863	0.91	HEE101M25030□VA
	100	30×25	0.20	863	0.94	HEE101M30025□VA
	120	22×45	0.20	719	1.03	HEE121M22045□VA
	120	25×35	0.20	719	0.99	HEE121M25035□VA
	150	22×50	0.20	575	1.15	HEE151M22050□VA
	150	25×40	0.20	575	1.12	HEE151M25040□VA
	150	30×30	0.20	575	1.10	HEE151M30030□VA
	150	35×25	0.20	575	1.13	HEE151M35025□VA
	180	25×45	0.20	479	1.25	HEE181M25045□VA
	180	30×35	0.20	479	1.25	HEE181M30035□VA
	220	25×50	0.20	392	1.47	HEE221M25050□VA
	220	30×40	0.20	392	1.48	HEE221M30040□VA
	220	35×30	0.20	392	1.44	HEE221M35030□VA
	270	30×45	0.20	319	1.70	HEE271M30045□VA
	270	35×35	0.20	319	1.68	HEE271M35035□VA
	330	30×50	0.20	261	1.90	HEE331M30050□VA
330	35×40	0.20	261	1.89	HEE331M35040□VA	

WV _{DC} (Surge Voltage) (V)	Cap (μ F)	Size D×L (mm)	tan δ 20°C 120Hz	ESR _{typ} 20°C 120Hz m Ω	Ripple Current 105°C 120Hz (Arms)	Catalog Part Number
450 (500)	390	35×45	0.20	221	2.10	HEE391M35045□VA
	470	35×50	0.20	184	2.40	HEE471M35050□VA
500 (550)	100	22×45	0.20	1061	0.82	HEC101M22045□VA
	100	25×40	0.20	1061	0.84	HEC101M25040□VA
	100	30×30	0.20	1061	0.83	HEC101M30030□VA
	120	22×50	0.20	885	0.89	HEC121M22050□VA
	120	25×40	0.20	885	0.87	HEC121M25040□VA
	120	30×35	0.20	885	0.91	HEC121M30035□VA
	120	35×30	0.20	885	0.94	HEC121M35030□VA
	150	25×45	0.20	708	0.98	HEC151M25045□VA
	150	30×40	0.20	708	1.03	HEC151M30040□VA
	150	35×35	0.20	708	1.07	HEC151M35035□VA
	180	25×50	0.20	590	1.12	HEC181M25050□VA
	180	30×45	0.20	590	1.19	HEC181M30045□VA
	220	30×50	0.20	483	1.27	HEC221M30050□VA
	220	35×40	0.20	483	1.26	HEC221M35040□VA
	270	30×50	0.20	393	1.43	HEC271M30050□VA
	270	35×40	0.20	393	1.42	HEC271M35040□VA
	330	35×45	0.20	322	1.61	HEC331M35045□VA
	390	35×50	0.20	272	1.79	HEC391M35050□VA
	470	35×60	0.20	226	2.04	HEC471M35060□VA
	560	35×70	0.20	190	2.38	HEC561M35070□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.