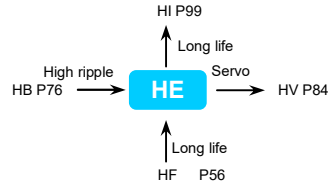


# HE 系列 SERIES



- 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.



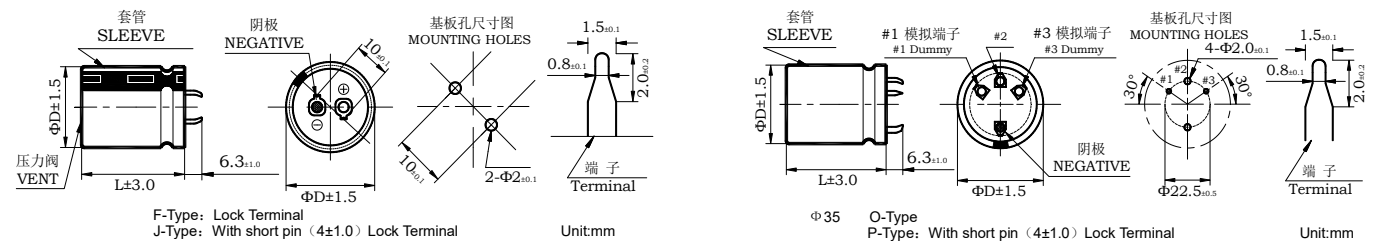
## 规格表 SPECIFICATIONS

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<sub>R</sub>(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>0.18</td> <td>0.18</td> <td>0.20</td> <td>0.20</td> </tr> </table>	U <sub>R</sub> (V)	160	200	250	350	400	450	500	tanδ	0.15	0.15	0.15	0.18	0.18	0.20	0.20
U <sub>R</sub> (V)	160	200	250	350	400	450	500										
tanδ	0.15	0.15	0.15	0.18	0.18	0.20	0.20										
阻抗比 Impedance Ratio (MAX) 120Hz	<table border="1"> <tr> <td>U<sub>R</sub>(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<sub>-25℃</sub>/Z<sub>+20℃</sub></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 <sub>R</sub> (V)	160	200	250	350	400	450	500	Z <sub>-25℃</sub> /Z <sub>+20℃</sub>	4	4	4	7	7	8	8
U <sub>R</sub> (V)	160	200	250	350	400	450	500										
Z <sub>-25℃</sub> /Z <sub>+20℃</sub>	4	4	4	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 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	5000h >180000h	3000h	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 <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> =0 I <sub>R</sub> =0 105℃ 0%

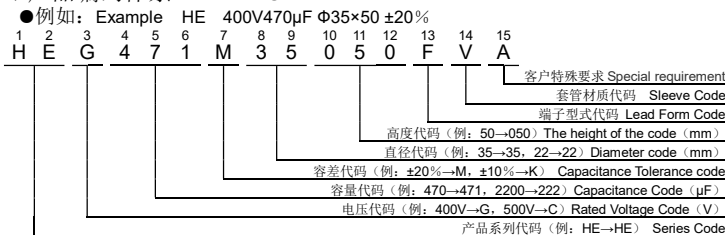
## 尺寸图 Dimensions

- 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	频率 (Hz)	50 (60)	100 (120)	300	1k	≥10k
160~250V	50	0.80	1.00	1.17	1.32	1.45
	100	0.80	1.00	1.16	1.30	1.41
350~500V	50	0.80	1.00	1.16	1.30	1.41
	100	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	温度 (℃)	+40	+55	+70	+85	+105
160~500V	+40	2.7	2.5	2.1	1.7	1.0
	+55	2.7	2.5	2.1	1.7	1.0

# HE 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
160 (200)	330	22×25	0.15	1.70	HEN331M22025□VA
	390	25×25	0.15	1.80	HEN391M25025□VA
	470	22×35	0.15	2.00	HEN471M22035□VA
	560	22×35	0.15	2.50	HEN561M22035□VA
	560	25×30	0.15	2.40	HEN561M25030□VA
	560	30×25	0.15	2.30	HEN561M30025□VA
	680	22×40	0.15	2.80	HEN681M22040□VA
	680	25×35	0.15	2.70	HEN681M25035□VA
	820	22×50	0.15	3.00	HEN821M22050□VA
	820	25×40	0.15	2.90	HEN821M25040□VA
	820	30×30	0.15	3.10	HEN821M30030□VA
	820	35×25	0.15	3.00	HEN821M35025□VA
	1000	25×45	0.15	3.50	HEN102M25045□VA
	1000	30×35	0.15	3.60	HEN102M30035□VA
	1000	35×30	0.15	3.50	HEN102M35030□VA
	1200	25×50	0.15	4.00	HEN122M25050□VA
	1200	30×40	0.15	4.00	HEN122M30040□VA
	1200	35×35	0.15	4.00	HEN122M35035□VA
	1500	30×45	0.15	4.60	HEN152M30045□VA
	1500	35×40	0.15	4.50	HEN152M35040□VA
1800	35×45	0.15	4.60	HEN182M35045□VA	
2200	35×40	0.15	6.10	HEN222M35040□VA	
200 (250)	220	22×25	0.15	1.30	HEL221M22025□VA
	270	22×25	0.15	1.37	HEL271M22025□VA
	330	22×30	0.15	1.60	HEL331M22030□VA
	330	25×25	0.15	1.60	HEL331M25025□VA
	390	22×30	0.15	1.65	HEL391M22030□VA
	470	22×35	0.15	1.75	HEL471M22035□VA
	470	25×30	0.15	1.75	HEL471M25030□VA
	470	30×25	0.15	1.80	HEL471M30025□VA
	560	22×45	0.15	1.85	HEL561M22045□VA
	560	25×35	0.15	1.85	HEL561M25035□VA
	680	22×50	0.15	1.88	HEL681M22050□VA
	680	25×40	0.15	2.12	HEL681M25040□VA
	680	30×30	0.15	2.12	HEL681M30030□VA
	680	35×25	0.15	2.40	HEL681M35025□VA
	820	25×45	0.15	2.40	HEL821M25045□VA
	820	30×35	0.15	2.40	HEL821M30035□VA
	820	35×30	0.15	2.60	HEL821M35030□VA
	1000	30×40	0.15	2.60	HEL102M30040□VA
	1000	35×35	0.15	2.60	HEL102M35035□VA
	1200	30×45	0.15	2.95	HEL122M30045□VA
1200	35×40	0.15	2.95	HEL122M35040□VA	
1500	35×40	0.15	3.65	HEL152M35040□VA	
1800	35×45	0.15	4.20	HEL182M35045□VA	
2200	35×50	0.15	4.70	HEL222M35050□VA	
250 (300)	180	22×25	0.15	1.20	HEJ181M22025□VA
	220	22×30	0.15	1.40	HEJ221M22030□VA
	220	25×25	0.15	1.40	HEJ221M25025□VA
	270	22×35	0.15	1.45	HEJ271M22035□VA
	330	22×40	0.15	1.50	HEJ331M22040□VA
	330	25×30	0.15	1.65	HEJ331M25030□VA
	330	30×25	0.15	1.55	HEJ331M30025□VA
	390	22×45	0.15	1.60	HEJ391M22045□VA
	390	25×35	0.15	1.65	HEJ391M25035□VA
	470	22×50	0.15	1.85	HEJ471M22050□VA
	470	30×30	0.15	1.85	HEJ471M30030□VA
	470	35×25	0.15	1.85	HEJ471M35025□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	
250 (300)	560	25×45	0.15	2.05	HEJ561M25045□VA	
	560	30×35	0.15	2.05	HEJ561M30035□VA	
	560	35×30	0.15	2.05	HEJ561M35030□VA	
	680	25×50	0.15	2.40	HEJ681M25050□VA	
	680	30×40	0.15	2.40	HEJ681M30040□VA	
	820	30×45	0.15	2.70	HEJ821M30045□VA	
	820	30×50	0.15	2.70	HEJ821M30050□VA	
	1000	30×50	0.15	3.10	HEJ102M30050□VA	
	1000	35×40	0.15	3.10	HEJ102M35040□VA	
	1200	35×45	0.15	3.50	HEJ122M35045□VA	
	1500	35×50	0.15	4.00	HEJ152M35050□VA	
	350 (400)	68	22×25	0.18	0.90	HEH680M22025□VA
		100	22×30	0.18	1.07	HEH101M22030□VA
		100	25×25	0.18	1.07	HEH101M25025□VA
		120	22×35	0.18	1.10	HEH121M22035□VA
150		22×40	0.18	1.18	HEH151M22040□VA	
150		25×30	0.18	1.22	HEH151M25030□VA	
150		30×25	0.18	1.22	HEH151M30025□VA	
180		22×45	0.18	1.31	HEH181M22045□VA	
180		25×35	0.18	1.31	HEH181M25035□VA	
180		30×30	0.18	1.32	HEH181M30030□VA	
220		22×50	0.18	1.36	HEH221M22050□VA	
220		25×40	0.18	1.40	HEH221M25040□VA	
220		35×25	0.18	1.40	HEH221M35025□VA	
270		25×50	0.18	1.46	HEH271M25050□VA	
270		30×35	0.18	1.51	HEH271M30035□VA	
270		35×30	0.18	1.46	HEH271M35030□VA	
330		30×45	0.18	1.65	HEH331M30045□VA	
330		35×35	0.18	1.65	HEH331M35035□VA	
390		30×50	0.18	1.78	HEH391M30050□VA	
390		35×40	0.18	1.78	HEH391M35040□VA	
470	35×45	0.18	1.89	HEH471M35045□VA		
560	35×50	0.18	2.09	HEH561M35050□VA		
400 (450)	68	22×25	0.18	0.68	HEG680M22025□VA	
	82	22×30	0.18	0.77	HEG820M22030□VA	
	82	25×25	0.18	0.76	HEG820M25025□VA	
	100	22×35	0.18	0.85	HEG101M22035□VA	
	100	25×25	0.18	0.85	HEG101M25025□VA	
	120	22×35	0.18	0.91	HEG121M22035□VA	
	120	25×30	0.18	0.91	HEG121M25030□VA	
	120	30×25	0.18	0.91	HEG121M30025□VA	
	150	22×40	0.18	1.05	HEG151M22040□VA	
	150	25×35	0.18	1.05	HEG151M25035□VA	
	150	30×25	0.18	1.05	HEG151M30025□VA	
	180	22×50	0.18	1.20	HEG181M22050□VA	
	180	25×40	0.18	1.20	HEG181M25040□VA	
	180	30×30	0.18	1.20	HEG181M30030□VA	
	180	35×25	0.18	1.20	HEG181M35025□VA	
	220	25×45	0.18	1.40	HEG221M25045□VA	
	220	30×35	0.18	1.40	HEG221M30035□VA	
	220	35×30	0.18	1.40	HEG221M35030□VA	
	270	25×50	0.18	1.55	HEG271M25050□VA	
	270	30×40	0.18	1.55	HEG271M30040□VA	
270	35×30	0.18	1.55	HEG271M35030□VA		
330	30×45	0.18	1.80	HEG331M30045□VA		
330	35×35	0.18	1.80	HEG331M35035□VA		
390	30×50	0.18	2.00	HEG391M30050□VA		
390	35×40	0.18	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 <sub>DC</sub> (Surge Voltage) (V)	Cap ( $\mu$ F)	Size D×L (mm)	tan $\delta$ 20℃120Hz	Ripple Current 105℃120Hz (Arms)	Catalog Part Number
400 (450)	470	35×45	0.18	2.30	HEG471M35045□VA
	470	35×50	0.18	2.30	HEG471M35050□VA
	560	35×50	0.18	2.50	HEG561M35050□VA
450 (500)	56	22×25	0.20	0.70	HEE560M22025□VA
	68	22×30	0.20	0.80	HEE680M22030□VA
	82	22×35	0.20	0.85	HEE820M22035□VA
	100	22×35	0.20	0.92	HEE101M22035□VA
	100	25×30	0.20	0.92	HEE101M25030□VA
	100	30×25	0.20	0.92	HEE101M30025□VA
	120	22×45	0.20	1.00	HEE121M22045□VA
	120	25×35	0.20	1.00	HEE121M25035□VA
	150	22×50	0.20	1.15	HEE151M22050□VA
	150	25×40	0.20	1.15	HEE151M25040□VA
	150	30×30	0.20	1.15	HEE151M30030□VA
	150	35×25	0.20	1.15	HEE151M35025□VA
	180	25×45	0.20	1.25	HEE181M25045□VA
	180	30×35	0.20	1.25	HEE181M30035□VA
	220	25×50	0.20	1.50	HEE221M25050□VA
	220	30×40	0.20	1.50	HEE221M30040□VA
	220	35×30	0.20	1.50	HEE221M35030□VA
	270	30×45	0.20	1.70	HEE271M30045□VA
	270	35×35	0.20	1.70	HEE271M35035□VA
	330	30×50	0.20	2.10	HEE331M30050□VA

WV <sub>DC</sub> (Surge Voltage) (V)	Cap ( $\mu$ F)	Size D×L (mm)	tan $\delta$ 20℃120Hz	Ripple Current 105℃120Hz (Arms)	Catalog Part Number
450 (500)	330	35×40	0.20	2.10	HEE331M35040□VA
	390	35×45	0.20	2.10	HEE391M35045□VA
	470	35×50	0.20	2.40	HEE471M35050□VA
500 (550)	100	22×45	0.20	0.82	HEC101M22045□VA
	100	25×40	0.20	0.82	HEC101M25040□VA
	100	30×30	0.20	0.82	HEC101M30030□VA
	120	22×50	0.20	0.91	HEC121M22050□VA
	120	25×40	0.20	0.89	HEC121M25040□VA
	120	30×35	0.20	0.93	HEC121M30035□VA
	120	35×30	0.20	0.91	HEC121M35030□VA
	150	25×45	0.20	1.01	HEC151M25045□VA
	150	30×40	0.20	1.05	HEC151M30040□VA
	150	35×35	0.20	1.08	HEC151M35035□VA
	180	25×50	0.20	1.06	HEC181M25050□VA
	180	30×45	0.20	1.11	HEC181M30045□VA
	220	30×50	0.20	1.27	HEC221M30050□VA
	220	35×40	0.20	1.24	HEC221M35040□VA
	270	30×50	0.20	1.46	HEC271M30050□VA
	270	35×40	0.20	1.43	HEC271M35040□VA
	330	35×45	0.20	1.61	HEC331M35045□VA
	390	35×50	0.20	1.79	HEC391M35050□VA
	470	35×60	0.20	2.04	HEC471M35060□VA
	560	35×70	0.20	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.