



# ELECTRONIC EQUIPMENT FILM CAPACITOR

## HACB Series

- Maximum operating temperature 105°C.
- Allowable temperature rise 15K max.
- A little hum is produced when applied AC voltage.



### ◆ SPECIFICATIONS

Items	Characteristics							
Category temperature range	-40 to +105°C							
Rated voltage range	630 to 4000V <sub>dc</sub>							
Capacitance tolerance	±3% (H) or ±5% (J) : Equal or less than 2000V <sub>dc</sub> . ±5% (J) or ±10% (K) : Equal or more than 3150V <sub>dc</sub> .							
Voltage proof (Terminal - Terminal)	No degradation, at 150% of rated voltage shall be applied for 60 seconds.							
Dissipation factor (tanδ)	No more than 0.05% : Equal or less than 1μF. No more than (c×0.015+0.05)% : More than 1μF.							
Insulation resistance (Terminal - Terminal)	No less than 30000MΩ : Equal or less than 0.33μF. No less than 10000ΩF : More than 0.33μF.							
	Rated voltage (V <sub>dc</sub> )	630	1000	1250	1650	2000	3150	4000
	Measurement voltage (V <sub>dc</sub> )	500	1000	1000	1000	1000	1000	1000
Endurance	The following specifications shall be satisfied, after 1000hrs with applying rated voltage×125% at 105°C.							
	Appearance	No serious degradation						
	Insulation resistance (Terminal - Terminal)	No less than 10000MΩ : Equal or less than 0.33μF. No less than 3000ΩF : More than 0.33μF.						
	Dissipation factor (tanδ)	Not more than initial specification at 1kHz.						
	Capacitance change	Within ±5% of initial value.						
Loading under damp heat	The following specifications shall be satisfied, after 500hrs with applying rated voltage at 40°C 90~95%RH.							
	Appearance	No serious degradation.						
	Insulation resistance (Terminal - Terminal)	No less than 10000MΩ : Equal or less than 0.33μF. No less than 3000ΩF : More than 0.33μF.						
	Dissipation factor (tanδ)	Not more than initial specification at 1kHz.						
	Capacitance change	Within ±5% of initial value.						

### ◆ STANDARD RATINGS

WV (V <sub>dc</sub> )	Cap (μF)	Dimensions (mm)					Maximum ripple current (Arms)	WV (Vac)	Part Number	Previous Part Number (Just for your reference)
		W	H	T	F	φd				
630	0.033	17.7	8.7	8.3	12.5	0.8	3.50	300	FHACB631V333□0LGZ0	HACB2J333□
	0.039		9.3	8.8			3.81		FHACB631V393□0LGZ0	HACB2J393□
	0.047		9.8	9.3			4.18		FHACB631V473□0LGZ0	HACB2J473□
	0.056		10.4	10.0			4.56		FHACB631V563□0LGZ0	HACB2J563□
	0.068		11.3	10.8			5.03		FHACB631V683□0LGZ0	HACB2J683□
	0.082		12.1	11.6			5.52		FHACB631V823□0LGZ0	HACB2J823□
	0.1	13.1	12.5	6.10	FHACB631V104□0LGZ0	HACB2J104□				
	0.12	14.0	13.4	6.68	FHACB631V124□0LGZ0	HACB2J124□				
	0.15	12.9	12.3	5.67	FHACB631V154□1LHZ0	HACB2J154□				
	0.18	13.8	13.2	6.21	FHACB631V184□1LHZ0	HACB2J184□				
	0.22	15.1	14.4	6.87	FHACB631V224□1LHZ0	HACB2J224□				
	0.27	16.5	15.7	7.61	FHACB631V274□1LHZ0	HACB2J274□				
	0.33	18.0	17.1	8.41	FHACB631V334□1LHZ0	HACB2J334□				
	0.39	19.3	18.4	9.15	FHACB631V394□1LHZ0	HACB2J394□				
	0.47	18.4	17.5	8.24	FHACB631V474□2LEZ0	HACB2J474□				
	0.56	19.9	18.9	9.00	FHACB631V564□2LEZ0	HACB2J564□				
	0.68	21.7	20.6	9.34	FHACB631V684□2LEZ0	HACB2J684□				
	0.82	23.6	22.5	9.34	FHACB631V824□2LEZ0	HACB2J824□				
1.0	25.8	24.6	9.34	FHACB631V105□2LEZ0	HACB2J105□					
1.2	28.1	26.8	9.34	FHACB631V125□2LEZ0	HACB2J125□					
1000	0.018	17.7	8.6	8.3	12.5	0.8	3.00	350	FHACB102V183□0LGZ0	HACB3A183□
	0.022		9.3	8.8			3.32		FHACB102V223□0LGZ0	HACB3A223□
	0.027		9.8	9.5			3.68		FHACB102V273□0LGZ0	HACB3A273□
	0.033		10.7	10.2			4.06		FHACB102V333□0LGZ0	HACB3A333□
	0.039		11.3	10.8			4.42		FHACB102V393□0LGZ0	HACB3A393□
	0.047		12.1	11.6			4.85		FHACB102V473□0LGZ0	HACB3A473□
	0.056	13.0	12.4	5.29	FHACB102V563□0LGZ0	HACB3A563□				
	0.068	14.0	13.4	5.83	FHACB102V683□0LGZ0	HACB3A683□				
	0.082	12.5	11.9	4.78	FHACB102V823□1LHZ0	HACB3A823□				
	0.1	13.5	12.9	5.28	FHACB102V104□1LHZ0	HACB3A104□				
	0.12	14.6	13.9	5.79	FHACB102V124□1LHZ0	HACB3A124□				
	0.15	16.1	15.3	6.47	FHACB102V154□1LHZ0	HACB3A154□				
	0.18	17.3	16.5	7.09	FHACB102V184□1LHZ0	HACB3A184□				
	0.22	18.9	18.0	7.83	FHACB102V224□1LHZ0	HACB3A224□				

(1) The symbol "□" is Capacitance tolerance code. (J : ±5%, H : ±3%)

(2) The maximum ripple current : +85°C max., 100kHz, sine wave

(3) WV(V<sub>ac</sub>) : 50Hz or 60Hz, sine wave



# ELECTRONIC EQUIPMENT FILM CAPACITOR

## HACB Series

### ◆STANDARD RATINGS

WV (Vdc)	Cap (μF)	Dimensions (mm)					Maximum ripple current (Arms)	WV (Vac)	Part Number	Previous Part Number (Just for your reference)
		W	H	T	F	φd				
1000	0.27	27.7	18.0	17.1	22.5	1.0	7.07	350	FHACB102V274□2LEZ0	HACB3A274□
	0.33		19.6	18.6			7.82		FHACB102V334□2LEZ0	HACB3A334□
	0.39		21.1	20.1			8.50		FHACB102V394□2LEZ0	HACB3A394□
	0.47		22.9	21.9			9.34		FHACB102V474□2LEZ0	HACB3A474□
	0.56		25.0	23.8			9.34		FHACB102V564□2LEZ0	HACB3A564□
	0.68		27.3	26.0			9.34		FHACB102V684□2LEZ0	HACB3A684□
	0.82	42.7	22.8	21.8	8.44		FHACB102V824□4LJZ0		HACB3A824□	
	1.0	25.0	23.8	37.5	9.34		FHACB102V105□4LJZ0		HACB3A105□	
	1.2	27.1	25.8	9.34	FHACB102V125□4LJZ0		HACB3A125□			
1250	0.012	17.7	8.5	8.2	12.5	0.8	2.68	400	FHACB1C2V123□0LGZ0	HACB3B123□
	0.015		9.2	8.8			3.00		FHACB1C2V153□0LGZ0	HACB3B153□
	0.018		9.8	9.3			3.29		FHACB1C2V183□0LGZ0	HACB3B183□
	0.022		10.5	10.1			3.63		FHACB1C2V223□0LGZ0	HACB3B223□
	0.027		11.3	10.8			4.03		FHACB1C2V273□0LGZ0	HACB3B273□
	0.033		12.2	11.7			4.45		FHACB1C2V333□0LGZ0	HACB3B333□
	0.039	13.1	12.5	4.84	FHACB1C2V393□0LGZ0		HACB3B393□			
	0.047	14.0	13.4	5.31	FHACB1C2V473□0LGZ0		HACB3B473□			
	0.056	22.7	13.3	12.7	4.61		FHACB1C2V563□1LHZ0		HACB3B563□	
	0.068	14.4	13.7	5.08	FHACB1C2V683□1LHZ0		HACB3B683□			
	0.082	15.5	14.8	5.58	FHACB1C2V823□1LHZ0		HACB3B823□			
	0.1	16.9	16.1	6.16	FHACB1C2V104□1LHZ0		HACB3B104□			
	0.12	18.4	17.5	6.75	FHACB1C2V124□1LHZ0		HACB3B124□			
	0.15	17.2	16.4	6.02	FHACB1C2V154□2LEZ0		HACB3B154□			
	0.18	18.6	17.7	6.60	FHACB1C2V184□2LEZ0		HACB3B184□			
	0.22	20.3	19.3	7.29	FHACB1C2V224□2LEZ0		HACB3B224□			
	0.27	22.3	21.3	8.08	FHACB1C2V274□2LEZ0		HACB3B274□			
	0.33	24.4	23.3	8.93	FHACB1C2V334□2LEZ0		HACB3B334□			
	0.39	26.3	25.1	9.34	FHACB1C2V394□2LEZ0		HACB3B394□			
	0.47	42.7	21.9	20.8	7.10		FHACB1C2V474□4LJZ0		HACB3B474□	
	0.56	23.7	22.6	7.75	FHACB1C2V564□4LJZ0		HACB3B564□			
	0.68	25.8	24.6	8.54	FHACB1C2V684□4LJZ0		HACB3B684□			
	0.82	27.6	26.3	9.34	FHACB1C2V824□4LJZ0		HACB3B824□			
	1.0	52.7	27.0	25.7	47.5		8.57		FHACB1C2V105□ULWZ0	HACB3B105□
1600	0.0047	19.7	8.8	8.5	15.0	0.8	1.32	450	FHACB162V472□KLDZ0	HACB3C472□
	0.0056		9.3	9.0			1.58		FHACB162V562□KLDZ0	HACB3C562□
	0.0068		10.0	9.6			1.93		FHACB162V682□KLDZ0	HACB3C682□
	0.0082		10.7	10.2			2.32		FHACB162V822□KLDZ0	HACB3C822□
	0.01		11.5	11.0			2.83		FHACB162V103□KLDZ0	HACB3C103□
	0.012		12.3	11.8			3.39		FHACB162V123□KLDZ0	HACB3C123□
	0.015	13.5	12.9	4.24	FHACB162V153□KLDZ0		HACB3C153□			
	0.018	14.6	13.9	4.47	FHACB162V183□KLDZ0		HACB3C183□			
	0.022	15.8	15.1	4.94	FHACB162V223□KLDZ0		HACB3C223□			
	0.027	22.7	13.0	12.4	3.86		FHACB162V273□1LHZ0		HACB3C273□	
	0.033	14.0	13.4	4.27	FHACB162V333□1LHZ0		HACB3C333□			
	0.039	15.1	14.4	4.64	FHACB162V393□1LHZ0		HACB3C393□			
	0.047	16.4	15.6	5.09	FHACB162V473□1LHZ0		HACB3C473□			
	0.056	17.6	16.8	5.56	FHACB162V563□1LHZ0		HACB3C563□			
	0.068	19.1	18.2	6.12	FHACB162V683□1LHZ0		HACB3C683□			
	0.082	22.7	17.4	16.6	5.29		FHACB162V823□2LEZ0		HACB3C823□	
	0.1	19.0	18.1	5.84	FHACB162V104□2LEZ0		HACB3C104□			
	0.12	20.6	19.6	6.40	FHACB162V124□2LEZ0		HACB3C124□			
	0.15	22.8	21.8	7.15	FHACB162V154□2LEZ0		HACB3C154□			
	0.18	24.7	23.6	7.84	FHACB162V184□2LEZ0		HACB3C184□			
	0.22	27.2	25.9	8.66	FHACB162V224□2LEZ0		HACB3C224□			
	0.27	42.7	23.4	22.3	6.47		FHACB162V274□4LJZ0		HACB3C274□	
	0.33	25.9	24.7	37.5	7.15		FHACB162V334□4LJZ0		HACB3C334□	
	0.39	27.9	26.6	7.77	FHACB162V394□4LJZ0		HACB3C394□			

(1)The symbol "□" is Capacitance tolerance code. (J : ±5%, H : ±3%)

(2)The maximum ripple current : +85°C max., 100kHz, sine wave

(3)WV(Vac) : 50Hz or 60Hz, sine wave

### ◆STANDARD RATINGS

WV (Vdc)	Cap (μF)	Dimensions (mm)					Maximum ripple current (Arms)	WV (Vac)	Part Number	Previous Part Number (Just for your reference)
		W	H	T	F	φd				
2000	0.001	19.7	8.3	8.1	15.0	0.8	0.28	450	FHACB202V102□KLDZ0	HACB3D102□
	0.0012		9.0	8.6			0.34		FHACB202V122□KLDZ0	HACB3D122□
	0.0015		9.6	9.2			0.42		FHACB202V152□KLDZ0	HACB3D152□
	0.0018		9.3	9.0			0.51		FHACB202V182□KLDZ0	HACB3D182□
	0.0022		10.0	9.6			0.62		FHACB202V222□KLDZ0	HACB3D222□
	0.0027		8.5	8.2			0.76		FHACB202V272□KLDZ0	HACB3D272□
	0.0033		9.1	8.7			0.93		FHACB202V332□KLDZ0	HACB3D332□
	0.0039		9.6	9.2			1.10		FHACB202V392□KLDZ0	HACB3D392□
	0.0047		10.2	9.8			1.33		FHACB202V472□KLDZ0	HACB3D472□
	0.0056		11.0	10.5			1.53		FHACB202V562□KLDZ0	HACB3D562□
	0.0068		11.8	11.3			1.92		FHACB202V682□KLDZ0	HACB3D682□
	0.0082		12.7	12.1			2.32		FHACB202V822□KLDZ0	HACB3D822□
	0.01		13.7	13.1			2.83		FHACB202V103□KLDZ0	HACB3D103□
	0.012		14.8	14.1			3.39		FHACB202V123□KLDZ0	HACB3D123□
	0.015		16.3	15.5			4.24		FHACB202V153□KLDZ0	HACB3D153□
	0.018	13.2	12.6	3.52	FHACB202V183□1LHZ0	HACB3D183□				
	0.022	14.3	13.6	3.89	FHACB202V223□1LHZ0	HACB3D223□				
	0.027	15.5	14.8	4.31	FHACB202V273□1LHZ0	HACB3D273□				
	0.033	17.0	16.2	4.77	FHACB202V333□1LHZ0	HACB3D333□				
	0.039	18.3	17.4	5.19	FHACB202V393□1LHZ0	HACB3D393□				
	0.047	19.8	18.8	5.69	FHACB202V473□1LHZ0	HACB3D473□				
	0.056	17.9	17.0	4.89	FHACB202V563□2LEZ0	HACB3D563□				
	0.068	19.4	18.5	5.39	FHACB202V683□2LEZ0	HACB3D683□				
	0.082	21.2	20.2	5.91	FHACB202V823□2LEZ0	HACB3D823□				
	0.1	23.2	22.1	6.53	FHACB202V104□2LEZ0	HACB3D104□				
	0.12	25.3	24.1	7.15	FHACB202V124□2LEZ0	HACB3D124□				
	0.15	27.9	26.6	8.00	FHACB202V154□2LEZ0	HACB3D154□				
	0.18	22.1	21.1	5.67	FHACB202V184□4LJZ0	HACB3D184□				
	0.22	24.5	23.4	6.27	FHACB202V224□4LJZ0	HACB3D224□				
	0.27	26.5	25.3	6.95	FHACB202V274□4LJZ0	HACB3D274□				

(1)The symbol "□" is Capacitance tolerance code. (J : ±5%, H : ±3%)

(2)The maximum ripple current : +85°C max., 100kHz, sine wave

(3)WV(Vac) : 50Hz or 60Hz, sine wave

WV (Vdc)	Cap (μF)	Dimensions (mm)					Maximum ripple current (Arms)	WV (Vac)	Part Number	Previous Part Number (Just for your reference)
		W	H	T	F	φd				
3150	0.0047	34.7	12.0	11.5	30.0	1.0	2.60	920	FHACB3B2V472□LLQZ0	HACB3F472□
	0.0056		12.9	12.3			2.84		FHACB3B2V562□LLQZ0	HACB3F562□
	0.0068		13.9	13.3			3.13		FHACB3B2V682□LLQZ0	HACB3F682□
	0.0082		15.0	14.3			3.44		FHACB3B2V822□LLQZ0	HACB3F822□
	0.01		16.3	15.5			3.80		FHACB3B2V103□LLQZ0	HACB3F103□
	0.012		17.5	16.7			4.16		FHACB3B2V123□LLQZ0	HACB3F123□
	0.015		19.3	18.4			4.65		FHACB3B2V153□LLQZ0	HACB3F153□
	0.018		20.9	19.9			5.09		FHACB3B2V183□LLQZ0	HACB3F183□
	0.022		22.9	21.9			5.63		FHACB3B2V223□LLQZ0	HACB3F223□
	0.027		25.2	24.0			6.24		FHACB3B2V273□LLQZ0	HACB3F273□
0.033	27.5	26.2	6.90	FHACB3B2V333□LLQZ0	HACB3F333□					
4000	0.0027	34.7	12.7	12.1	30.0	1.0	2.33	920	FHACB402V272□LLQZ0	HACB3G272□
	0.0033		13.7	13.1			2.58		FHACB402V332□LLQZ0	HACB3G332□
	0.0039		14.6	13.9			2.81		FHACB402V392□LLQZ0	HACB3G392□
	0.0047		15.7	15.0			3.08		FHACB402V472□LLQZ0	HACB3G472□
	0.0056		17.0	16.2			3.36		FHACB402V562□LLQZ0	HACB3G562□
	0.0068		18.4	17.5			3.71		FHACB402V682□LLQZ0	HACB3G682□
	0.0082		20.0	19.0			4.07		FHACB402V822□LLQZ0	HACB3G822□
	0.01		21.8	20.7			4.49		FHACB402V103□LLQZ0	HACB3G103□
	0.012		23.7	22.6			4.92		FHACB402V123□LLQZ0	HACB3G123□
	0.015		26.2	25.0			5.50		FHACB402V153□LLQZ0	HACB3G153□
0.018	28.5	27.1	6.03	FHACB402V183□LLQZ0	HACB3G183□					

(1)The symbol "□" is Capacitance tolerance code. (J : ±5%, K : ±10%)

(2)The maximum ripple current : +85°C max., 100kHz, sine wave

(3)WV(Vac) : 50Hz or 60Hz, sine wave

### ◆DIMENSIONS (mm)

