BH series

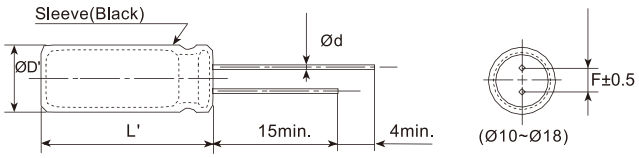
- Endurance: +130°C 3,000 hours
- High reliability, suited for automobile electronics
- Miniaturized,long life,low impedance
- **RoHS Compliant**

New

SPECIFICATIONS

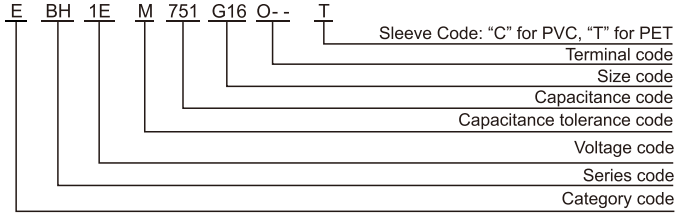
Items	Characteristics								
Category Temperature Range	-40~+130°C								
Rated Voltage Range	25~400 Vdc								
Capacitance Tolerance	±20%(M) (at 20°C, 120Hz)								
Leakage Current	25~100 Vdc: I 0.03CV or 4μA.(after 2 minutes) whichever is greater. 160~400 Vdc: CV 1,000 I 0.1CV+40μA. (after 1 minute); CV >1,000 I 0.04CV+100μA. (after 1 minute)								
	Where, I: Max.leakage current (μA), C :nominal capacitance (μF), V : Rated voltage (V) (at 20°C)								
Dissipation Factor (tanδ)	Rated Voltage (Vdc)	25	35	50	63	80	100	160~250	350~400
	tanδ (max.)	0.14	0.12	0.10	0.10	0.08	0.08	0.15	0.20
	When nominal capacitance exceeds 1,000μF, add 0.02 to the value above for each 1,000μF increase. (at 20°C, 120Hz)								
Low Temperature Characteristics (Max. Impedance Ratio)	Rated Voltage (Vdc)	25	35	50	63	80	100	160~250	350~400
	Z(-25°C)/Z(+20°C)	2	2	2	2	2	2	3	6
	Z(-40°C)/Z(+20°C)	4	4	4	4	4	4	6	12 (at 120Hz)
Endurance	The following specifications shall be satisfied when the capacitors are restored to 20°C after DC voltage plus rated ripple current is applied for 3,000 hours at 130°C.								
	Rated Voltage (Vdc)	25~100				160~400			
	Capacitance Change	≤±30% of the initial value				≤±20% of the initial value			
	D.F. (tanδ)	≤300% of the initial specified value				≤200% of the initial specified value			
	Leakage Current	≤The initial specified value				≤The initial specified value			
Shelf Life	The following specifications shall be satisfied when the capacitors are restored to 20°C after exposing them for 1,000 hours at 105°C without voltage applied.								
	Capacitance Change	≤±20% of the initial value							
	D.F. (tanδ)	≤200% of the initial specified value							
	Leakage Current	≤200% of the initial specified value							

DIMENSIONS [mm]



ØD	10	12.5	14.5	16	18
Ød	0.6	0.6	0.8	0.8	0.8
F	5.0	5.0	7.5	7.5	7.5
ØD'	ØD+0.5max.				
L'	L+2max.				

PART NUMBERING SYSTEM



RATED RIPPLE CURRENT MULTIPLIERS

Frequency correction factor for ripple current

6.3 to 100 Vdc

Cap.(μF) \ Freq.(Hz)	120	1k	10k	100k
130 to 240	0.40	0.82	0.93	1.00
270 to 560	0.50	0.85	0.94	1.00
620 to 2000	0.60	0.87	0.95	1.00
2200 to 4300	0.75	0.90	0.95	1.00
4700 to 11000	0.85	0.95	0.98	1.00

160 to 400 Vdc

Cap.(μF) \ Freq.(Hz)	50	120	300	1k	10k	100k
12 to 33	0.15	0.30	0.45	0.65	0.95	1.00
36 to 270	0.25	0.35	0.50	0.70	0.96	1.00

The endurance of capacitors is shortened with internal heating produced by ripple current at the rate of halving the lifetime with every 5°C rise. When long life performance is required in actual use,the rms ripple current has to be reduced.

BH series

STANDARD RATINGS

WV (Vdc)	Cap (μF)	Size DxL(mm)	tanδ	Impedance (Ωmax/20°C, 100kHz)	Rated ripple current (mArms/130°C, 100kHz)	Part Number
25(1E)	510	10×12.5	0.14	0.14	900	EBH1EM511G1BOT
	750	10×16	0.14	0.094	1300	EBH1EM751G16OT
	910	12.5×16	0.14	0.082	1220	EBH1EM911W16OT
	1200	10×20	0.14	0.073	1540	EBH1EM122G20OT
		14.5×15	0.14	0.067	1320	EBH1EM122X15OT
	1500	10×25	0.14	0.042	1880	EBH1EM152G25OT
	1600	16×15	0.14	0.063	1430	EBH1EM162L15OT
	1800	12.5×20	0.14	0.038	1590	EBH1EM182W20OT
	2000	10×30	0.16	0.033	2150	EBH1EM202G30OT
	2200	14.5×20	0.16	0.030	1780	EBH1EM222X20OT
	2400	18×15	0.16	0.053	1630	EBH1EM242M15OT
	2700	12.5×25	0.16	0.030	2280	EBH1EM272W25OT
	3000	16×20	0.18	0.029	1890	EBH1EM302L20OT
	3300	12.5×30	0.18	0.025	2760	EBH1EM332W30OT
	3600	14.5×25	0.18	0.025	2760	EBH1EM362X25OT
	4300	12.5×35	0.20	0.022	3120	EBH1EM432W35OT
		16×25	0.20	0.022	3030	EBH1EM432L25OT
		18×20	0.20	0.028	1930	EBH1EM432M20OT
	4700	14.5×30	0.20	0.020	3090	EBH1EM472X30OT
	5100	12.5×40	0.22	0.019	3610	EBH1EM512W40OT
		14.5×35	0.22	0.018	3430	EBH1EM512X35OT
		16×30	0.22	0.018	3330	EBH1EM512L30OT
	5600	18×25	0.24	0.020	3200	EBH1EM562M25OT
	6800	14.5×40	0.24	0.016	3820	EBH1EM682X40OT
		16×35	0.24	0.016	3630	EBH1EM682L35OT
	7500	18×30	0.26	0.016	3480	EBH1EM752M30OT
	8200	16×40	0.28	0.015	3930	EBH1EM822L40OT
	9100	18×35	0.30	0.015	3750	EBH1EM912M35OT
	11000	18×40	0.32	0.014	4040	EBH1EM113M40OT
35(1V)	300	10×12.5	0.12	0.14	900	EBH1VM301G1BOT
	510	10×16	0.12	0.094	1300	EBH1VM511G16OT
	560	12.5×16	0.12	0.082	1220	EBH1VM561W16OT
	680	10×20	0.12	0.073	1540	EBH1VM681G20OT
	750	14.5×15	0.12	0.067	1320	EBH1VM751X15OT
	820	10×25	0.12	0.042	1880	EBH1VM821G25OT
	1100	12.5×20	0.12	0.038	1590	EBH1VM112W20OT
		16×15	0.12	0.063	1430	EBH1VM112L15OT
	1200	10×30	0.12	0.033	2150	EBH1VM122G30OT
	1500	12.5×25	0.12	0.030	2280	EBH1VM152W25OT
		14.5×20	0.12	0.030	1780	EBH1VM152X20OT
		18×15	0.12	0.053	1630	EBH1VM152M15OT
	2000	12.5×30	0.14	0.025	2760	EBH1VM202W30OT
		16×20	0.14	0.029	1890	EBH1VM202L20OT
	2200	14.5×25	0.14	0.025	2760	EBH1VM222X25OT
	2400	12.5×35	0.14	0.022	3120	EBH1VM242W35OT
		16×25	0.14	0.022	3030	EBH1VM242L25OT
		18×20	0.14	0.028	1930	EBH1VM242M20OT
	2700	12.5×40	0.14	0.019	3610	EBH1VM272W40OT
		14.5×30	0.14	0.020	3090	EBH1VM272X30OT
	3000	14.5×35	0.16	0.018	3430	EBH1VM302X35OT
	3300	16×30	0.16	0.018	3330	EBH1VM332L30OT
		18×25	0.16	0.020	3200	EBH1VM332M25OT
	3900	14.5×40	0.16	0.016	3820	EBH1VM392X40OT
	4300	16×35	0.18	0.016	3630	EBH1VM432L35OT
		18×30	0.18	0.016	3480	EBH1VM432M30OT
	4700	16×40	0.18	0.015	3930	EBH1VM472L40OT
	5100	18×35	0.20	0.015	3750	EBH1VM512M35OT
	6200	18×40	0.26	0.014	4040	EBH1VM622M40OT

WV (Vdc)	Cap (μF)	Size DxL(mm)	tanδ	Impedance (Ωmax/20°C, 100kHz)	Rated ripple current (mArms/130°C, 100kHz)	Part Number
50(1H)	160	10×12.5	0.10	0.24	730	EBH1HM161G1BOT
	240	10×16	0.10	0.16	1080	EBH1HM241G16OT
	270	12.5×16	0.10	0.14	1020	EBH1HM271W16OT
	330	10×20	0.10	0.12	1290	EBH1HM331G20OT
	390	14.5×15	0.10	0.12	1090	EBH1HM391X15OT
	430	10×25	0.10	0.055	1740	EBH1HM431G25OT
	510	12.5×20	0.10	0.049	1410	EBH1HM511W20OT
	560	10×30	0.10	0.041	2020	EBH1HM561G30OT
		16×15	0.10	0.11	1190	EBH1HM561L15OT
	680	14.5×20	0.10	0.038	1610	EBH1HM681X20OT
	750	12.5×25	0.10	0.038	2030	EBH1HM751W25OT
		18×15	0.10	0.085	1370	EBH1HM751M15OT
	910	16×20	0.10	0.037	1740	EBH1HM911L20OT
	1000	12.5×30	0.10	0.031	2510	EBH1HM102W30OT
		14.5×25	0.10	0.031	2480	EBH1HM102X25OT
	1200	12.5×35	0.10	0.027	2900	EBH1HM122W35OT
		18×20	0.10	0.036	1830	EBH1HM122M20OT
	1300	14.5×30	0.10	0.026	2870	EBH1HM132X30OT
		16×35	0.10	0.027	2690	EBH1HM132L35OT
	1500	12.5×40	0.10	0.023	3260	EBH1HM152W40OT
		14.5×35	0.10	0.023	3160	EBH1HM152X35OT
	1600	16×30	0.10	0.023	3150	EBH1HM162L30OT
	1800	18×25	0.10	0.025	2900	EBH1HM182M25OT
	2000	14.5×40	0.12	0.020	3560	EBH1HM202X40OT
		16×35	0.12	0.020	3470	EBH1HM202L35OT
	2200	18×30	0.12	0.021	3330	EBH1HM222M30OT
	2400	16×40	0.12	0.018	3800	EBH1HM242L40OT
	2700	18×35	0.12	0.019	3590	EBH1HM272M35OT
	3300	18×40	0.14	0.017	3850	EBH1HM332M40OT
63(1J)	390	12.5×20	0.10	0.097	1310	EBH1JM391W20OT
	510	12.5×25	0.10	0.072	1880	EBH1JM511W25OT
		14.5×20	0.10	0.072	1510	EBH1JM511X20OT
	620	16×20	0.10	0.062	1630	EBH1JM621L20OT
	680	12.5×30	0.10	0.052	2410	EBH1JM681W30OT
		14.5×25	0.10	0.054	2130	EBH1JM681X25OT
	820	12.5×35	0.10	0.044	2760	EBH1JM821W35OT
		18×20	0.10	0.055	1750	EBH1JM821M20OT
	910	14.5×30	0.10	0.042	2700	EBH1JM911X30OT
		16×25	0.10	0.047	2300	EBH1JM911L25OT
	1000	12.5×40	0.10	0.038	3080	EBH1JM102W40OT
	1100	14.5×35	0.10	0.037	2940	EBH1JM112X35OT
		16×30	0.10	0.037	2940	EBH1JM112L30OT
	1200	18×25	0.10	0.044	2440	EBH1JM122M25OT
	1300	14.5×40	0.10	0.032	3350	EBH1JM132X40OT
		16×35	0.10	0.031	3220	EBH1JM132L35OT
	1500	18×30	0.10	0.037	3100	EBH1JM152M30OT
	1800	16×40	0.10	0.028	3590	EBH1JM182L40OT
	2000	18×35	0.12	0.028	3450	EBH1JM202M35OT
	2400	18×40	0.12	0.023	3690	EBH1JM242M40OT

BH series

STANDARD RATINGS

WV (Vdc)	Cap (μF)	Size DxL(mm)	tanδ	Impedance (Ωmax/20°C, 100kHz)	Rated ripple current (mArms/130°C, 100kHz)	Part Number
80(1B)	240	12.5×20	0.08	0.097	1310	EBH1BM241W20OT
	330	12.5×25	0.08	0.072	1880	EBH1BM331W25OT
		14.5×20	0.08	0.072	1510	EBH1BM331X20OT
	390	16×20	0.08	0.062	1630	EBH1BM391L20OT
	430	12.5×30	0.08	0.052	2410	EBH1BM431W30OT
	470	14.5×25	0.08	0.054	2130	EBH1BM471X25OT
	560	12.5×35	0.08	0.044	2760	EBH1BM561W35OT
		16×25	0.08	0.047	2300	EBH1BM561L25OT
		18×20	0.08	0.055	1750	EBH1BM561M20OT
	620	12.5×40	0.08	0.038	3080	EBH1BM621W40OT
		14.5×30	0.08	0.042	2700	EBH1BM621X30OT
	680	14.5×35	0.08	0.037	2940	EBH1BM681X35OT
		16×30	0.08	0.037	2940	EBH1BM681L30OT
	750	18×25	0.08	0.044	2440	EBH1BM751M25OT
	820	14.5×40	0.08	0.032	3350	EBH1BM821X40OT
	910	16×35	0.08	0.031	3220	EBH1BM911L35OT
		18×30	0.08	0.037	3100	EBH1BM911M30OT
	1100	16×40	0.08	0.028	3590	EBH1BM112L40OT
	1300	18×35	0.08	0.028	3450	EBH1BM132M35OT
	1500	18×40	0.08	0.023	3690	EBH1BM152M40OT
100(1K)	130	12.5×20	0.08	0.12	1210	EBH1KM131W20OT
	180	14.5×20	0.08	0.082	1450	EBH1KM181X20OT
	200	12.5×25	0.08	0.082	1800	EBH1KM201W25OT
	240	12.5×30	0.08	0.062	2290	EBH1KM241W30OT
		16×20	0.08	0.071	1580	EBH1KM241L20OT
	270	14.5×25	0.08	0.064	2050	EBH1KM271X25OT
	330	12.5×35	0.08	0.051	2680	EBH1KM331W35OT
		16×25	0.08	0.057	2190	EBH1KM331L25OT
		18×20	0.08	0.069	1690	EBH1KM331M20OT
	360	14.5×30	0.08	0.050	2620	EBH1KM361X30OT
	390	12.5×40	0.08	0.044	2970	EBH1KM391W40OT
		14.5×35	0.08	0.044	2850	EBH1KM391X35OT
		16×30	0.08	0.044	2770	EBH1KM391L30OT
	430	18×25	0.08	0.054	2310	EBH1KM431M25OT
	510	14.5×40	0.08	0.038	3230	EBH1KM511X40OT
		16×35	0.08	0.037	3010	EBH1KM511L35OT
	560	18×30	0.08	0.043	2830	EBH1KM561M30OT
	620	16×40	0.08	0.032	3320	EBH1KM621L40OT
	680	18×35	0.08	0.034	3210	EBH1KM681M35OT
	820	18×40	0.08	0.029	3410	EBH1KM821M40OT

WV (Vdc)	Cap (μF)	Size DxL(mm)	tanδ	Impedance (Ωmax/20°C, 100kHz)	Rated ripple current (mArms/130°C, 100kHz)	Part Number
160(2C)	47	12.5×25	0.15	V	590	EBH2CM470W25OT
	68	16×25	0.15	V	750	EBH2CM680L25OT
	82	16×25	0.15	V	825	EBH2CM820L25OT
	100	16×25	0.15	V	960	EBH2CM101L25OT
		18×20	0.15	V	960	EBH2CM101M20OT
	150	18×30	0.15	V	1050	EBH2CM151M30OT
	220	18×35	0.15	V	1500	EBH2CM221M35OT
200(2D)	33	12.5×20	0.15	V	500	EBH2DM330W20OT
	47	12.5×25	0.15	V	650	EBH2DM470W25OT
		16×20	0.15	V	650	EBH2DM470L20OT
	68	16×25	0.15	V	750	EBH2DM680L25OT
	82	16×30	0.15	V	900	EBH2DM820L30OT
		18×25	0.15	V	900	EBH2DM820M25OT
	100	16×30	0.15	V	1100	EBH2DM101L30OT
		18×25	0.15	V	1100	EBH2DM101M25OT
	150	18×35	0.15	V	1350	EBH2DM151M35OT
250(2E)	22	12.5×20	0.15	V	430	EBH2EM220W20OT
	33	12.5×25	0.15	V	530	EBH2EM330W25OT
		16×20	0.15	V	530	EBH2EM330L20OT
	47	16×25	0.15	V	690	EBH2EM470L25OT
		18×20	0.15	V	690	EBH2EM470M20OT
	68	16×30	0.15	V	780	EBH2EM680L30OT
		18×25	0.15	V	780	EBH2EM680M25OT
	82	18×25	0.15	V	900	EBH2EM820M25OT
	100	18×30	0.15	V	970	EBH2EM101M30OT
350(2V)	15	12.5×25	0.20	V	335	EBH2VM150W25OT
		16×20	0.20	V	335	EBH2VM150L20OT
	22	16×25	0.20	V	450	EBH2VM220L25OT
	33	16×30	0.20	V	535	EBH2VM330L30OT
		16×35	0.20	V	555	EBH2VM330L35OT
	47	18×30	0.20	V	700	EBH2VM470M30OT
		18×35	0.20	V	750	EBH2VM470M35OT
	68	18×40	0.20	V	900	EBH2VM680M40OT
400(2G)	12	12.5×25	0.20	V	280	EBH2GM120W25OT
	15	12.5×25	0.20	V	335	EBH2GM150W25OT
		16×20	0.20	V	335	EBH2GM150L20OT
	22	16×25	0.20	V	480	EBH2GM220L25OT
		16×30	0.20	V	500	EBH2GM220L30OT
	33	18×30	0.20	V	635	EBH2GM330M30OT
	47	18×35	0.20	V	750	EBH2GM470M35OT
	68	18×40	0.20	V	900	EBH2GM680M40OT