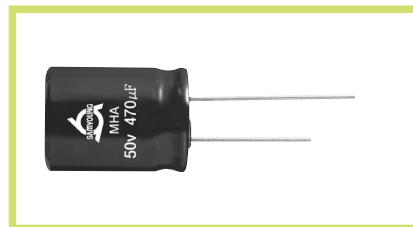
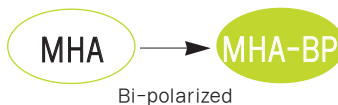


## MHA-BP Series

• 85°C 2,000Hrs assured.

- Non-solvent proof.
- Bi-polarized.
- For Digital Household Appliances.
- RoHS compliant.
- Halogen-free capacitors are also available.



## SPECIFICATIONS

Item	Characteristics																						
Rated Voltage Range	6.3 ~ 100 V <sub>DC</sub>	160 ~ 250 V <sub>DC</sub>																					
Operating Temperature Range	-40 ~ +85°C	-25 ~ +85°C																					
Capacitance Tolerance	±20% (M) (at 20°C, 120Hz)																						
Leakage Current (In both directions)	$I = 0.03CV(\mu A)$ or $3\mu A$ , whichever is greater. Where, I:Max. Leakage current( $\mu A$ ), C:Nominal capacitance( $\mu F$ ), V:Rated voltage(V <sub>DC</sub> ) (at 20°C, 5 minutes)																						
Dissipation Factor (Tan $\delta$ )	<table border="1"> <thead> <tr> <th>Rated Voltage(V<sub>DC</sub>)</th> <th>6.3</th> <th>10</th> <th>16~25</th> <th>35</th> <th>50</th> <th>63~100</th> <th>160</th> <th>200~250</th> </tr> </thead> <tbody> <tr> <td>Tan<math>\delta</math>(Max.)</td> <td>0.25</td> <td>0.24</td> <td>0.20</td> <td>0.16</td> <td>0.14</td> <td>0.12</td> <td>0.15</td> <td>0.20</td> </tr> </tbody> </table> When the capacitance exceeds 1,000 $\mu F$ , 0.02 shall be added every 1,000 $\mu F$ increase. (at 20°C, 120Hz)		Rated Voltage(V <sub>DC</sub> )	6.3	10	16~25	35	50	63~100	160	200~250	Tan $\delta$ (Max.)	0.25	0.24	0.20	0.16	0.14	0.12	0.15	0.20			
Rated Voltage(V <sub>DC</sub> )	6.3	10	16~25	35	50	63~100	160	200~250															
Tan $\delta$ (Max.)	0.25	0.24	0.20	0.16	0.14	0.12	0.15	0.20															
Temperature Characteristics (Max. Impedance ratio)	<table border="1"> <thead> <tr> <th>Rated Voltage(V<sub>DC</sub>)</th> <th>6.3</th> <th>10</th> <th>16</th> <th>25~100</th> <th>160</th> <th>200~250</th> </tr> </thead> <tbody> <tr> <td>Z(-25°C)/Z(20°C)</td> <td>4</td> <td>3</td> <td>2</td> <td>2</td> <td>4</td> <td>6</td> </tr> <tr> <td>Z(-40°C)/Z(20°C)</td> <td>10</td> <td>8</td> <td>6</td> <td>4</td> <td>-</td> <td>-</td> </tr> </tbody> </table> (at 120Hz)		Rated Voltage(V <sub>DC</sub> )	6.3	10	16	25~100	160	200~250	Z(-25°C)/Z(20°C)	4	3	2	2	4	6	Z(-40°C)/Z(20°C)	10	8	6	4	-	-
Rated Voltage(V <sub>DC</sub> )	6.3	10	16	25~100	160	200~250																	
Z(-25°C)/Z(20°C)	4	3	2	2	4	6																	
Z(-40°C)/Z(20°C)	10	8	6	4	-	-																	
Load Life	The following specifications shall be satisfied when the capacitors are restored to 20°C after the rated voltage is applied for 2,000 hours at 85°C. During this test, the rated voltage shall be reversed on the capacitor every 250 hours. Capacitance change $\leq \pm 20\%$ of the initial value (where, $\pm 25\%$ for $\leq 16$ V <sub>DC</sub> ) Tan $\delta$ $\leq 200\%$ of the initial specified value Leakage current $\leq$ 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 85°C without voltage applied. The rated voltage shall be applied to the capacitors for a minimum of 30 minutes, at least 24 hours and not more than 48 hours before the measurements. Capacitance change $\leq \pm 20\%$ of the initial value (where, $\pm 25\%$ for $\leq 16$ V <sub>DC</sub> ) Tan $\delta$ $\leq 200\%$ of the initial specified value Leakage current $\leq 200\%$ of the initial specified value																						
Others	Satisfied characteristics KS C IEC 60384-4																						

## DIMENSIONS OF MHA-BP Series

Unit(mm)

Marking : BLACK SLEEVE, WHITE INK

	5	6.3	8	10	12.5	16	18
øD	5	6.3	8	10	12.5	16	18
ød	0.5	0.5	0.6	0.6	0.6	0.8	0.8
F	2.0	2.5	3.5	5.0	5.0	7.5	7.5
øD'	øD + 0.5 max.						
L'	L + 1.5 max.			L + 2.0 max.			

## RATINGS OF MHA-BP Series

$\mu\text{F}$ \ Vdc	6.3		10		16		25		35		50	
10									5×11	50	5×11	52
22							5×11	66	6.3×11	71	6.3×11	89
33							6.3×11	90	6.3×11	104	8×11.5	124
47			5×11	86	5×11	89	6.3×11	107	8×11.5	142	10×12.5	174
100	5×11	126	6.3×11	144	6.3×11	148	8×11.5	179	10×12.5	244	10×16	284
220	6.3×11	213	8×11.5	244	10×12.5	295	10×16	345	10×20	432	12.5×20	500
330	8×11.5	298	10×12.5	352	10×16	399	10×20	458	12.5×20	543	16×20	666
470	10×12.5	420	10×16	463	10×20	515	12.5×20	606	12.5×25	704	16×25	877
1,000	10×20	732	12.5×20	791	12.5×25	882	16×20	961	16×31.5	1,223	18×35.5	1,409
2,200	12.5×25	1,291	16×20	1,275	16×31.5	1,557	18×31.5	1,699	18×40	1,838		
3,300	16×20	1,581	16×31.5	1,859	18×35.5	2,034	18×40	2,122				
4,700	16×31.5	2,219	18×31.5	2,290								
6,800	18×31.5	2,754	18×40	2,890								

$\mu\text{F}$ \ Vdc	63		100		160		200		250	
3.3			5×11	35					10×12.5	48
4.7	5×11	40	6.3×11	48			10×12.5	58	10×16	65
10	6.3×11	63	8×11.5	80	10×16	104	10×20	96	12.5×20	107
22	8×11.5	106	10×12.5	140	12.5×20	185	12.5×25	180	16×20	190
33	8×11.5	137	10×16	189	12.5×25	247	16×20	239	16×25	257
47	10×12.5	183	10×20	244	16×25	325	16×25	325	18×31.5	324
100	10×20	327	12.5×25	430	18×31.5	450	18×40	496		
220	12.5×25	585	16×31.5	759						
330	16×25	791	18×35.5	934						
470	16×31.5	992								
1,000	18×40	1,431								

Rated Ripple Current(mArms/85°C, 120Hz)  
 Case Size  $\varnothing D \times L$ (mm)