

## NHA-BP Series

• 105°C 1,000Hrs assured.

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

Solvent-proof

$WV \leq 100V_{DC}$



## SPECIFICATIONS

Item	Characteristics																			
Rated Voltage Range	6.3 ~ 100 V <sub>DC</sub>	160 ~ 250 V <sub>DC</sub>																		
Operating Temperature Range	-55 ~ +105°C	-40 ~ +105°C																		
Capacitance Tolerance	±20% (M) (at 20°C, 120Hz)																			
Leakage Current (In both directions)	I = 0.03CV(µA) or 3µA, whichever is greater. Where, I:Max. Leakage current(µA), C:Nominal capacitance(µF), V:Rated voltage(V <sub>DC</sub> ) (at 20°C, 5 minutes)																			
Dissipation Factor (Tanδ)	<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>Tanδ(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 1,000µF, 0.02 shall be added every 1,000µF increase. (at 20°C, 120Hz)		Rated Voltage(V <sub>DC</sub> )	6.3	10	16~25	35	50	63~100	160	200~250	Tanδ(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												
Tanδ(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>160~250</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>3</td> </tr> <tr> <td>Z(-40°C)/Z(20°C)</td> <td>8</td> <td>6</td> <td>4</td> <td>3</td> <td>4</td> </tr> </tbody> </table> (at 120Hz)		Rated Voltage(V <sub>DC</sub> )	6.3	10	16	25~100	160~250	Z(-25°C)/Z(20°C)	4	3	2	2	3	Z(-40°C)/Z(20°C)	8	6	4	3	4
Rated Voltage(V <sub>DC</sub> )	6.3	10	16	25~100	160~250															
Z(-25°C)/Z(20°C)	4	3	2	2	3															
Z(-40°C)/Z(20°C)	8	6	4	3	4															
Load Life	The following specifications shall be satisfied when the capacitors are restored to 20°C after the rated voltage is applied for 1,000 hours at 105°C. During this test, the rated voltage shall be reversed on the capacitor every 250 hours. Capacitance change ≤ ±20% of the initial value (where, ±25% for ≤ 16 V <sub>DC</sub> ) Tanδ ≤ 150% of the initial specified value Leakage current ≤ The initial specified value																			
Shelf Life	The following specifications shall be satisfied when the capacitors are restored to 20°C after exposing them for 500 hours at 105°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 ≤ ±20% of the initial value (where, ±25% for ≤ 16 V <sub>DC</sub> ) Tanδ ≤ 150% of the initial specified value Leakage current ≤ 150% of the initial specified value																			
Others	Satisfied characteristics KS C IEC 60384-4																			

## DIMENSIONS OF NHA-BP Series

Unit(mm)

Marking : BROWN 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.			

NHA-BP Series

## RATINGS OF NHA-BP Series

$\mu F$ \ V <sub>DC</sub>	6.3		10		16		25		35		50	
10									5×11	33	5×11	37
22							5×11	47	6.3×11	55	6.3×11	63
33							6.3×11	66	6.3×11	68	8×11.5	88
47			5×11	57	5×11	64	6.3×11	78	8×11.5	93	10×12.5	123
100	5×11	79	6.3×11	94	6.3×11	107	8×11.5	131	10×12.5	159	10×16	198
220	6.3×11	134	8×11.5	160	10×12.5	215	10×16	252	10×20	283	12.5×20	354
330	8×11.5	188	10×12.5	231	10×16	290	10×20	335	12.5×20	371	16×20	471
470	10×12.5	264	10×16	304	10×20	375	12.5×20	429	12.5×25	481	16×25	620
1,000	10×20	460	12.5×20	533	12.5×25	623	16×20	679	16×31.5	836	18×35.5	996
2,200	12.5×25	823	16×20	859	16×31.5	1,101	18×31.5	1,238	18×40	1,342		
3,300	16×20	1,008	16×31.5	1,253	18×35.5	1,438	18×40	1,592				
4,700	16×31.5	1,432	18×31.5	1,544								
6,800	18×31.5	1,778	18×40	1,949								

$\mu F$ \ V <sub>DC</sub>	63		100		160		200		250	
3.3			5×11	25					10×12.5	34
4.7	5×11	28	6.3×11	34			10×12.5	41	10×16	45
10	6.3×11	47	8×11.5	57	10×16	66	10×20	71	12.5×20	79
22	8×11.5	79	10×12.5	99	12.5×20	117	12.5×25	125	16×20	127
33	8×11.5	97	10×16	134	12.5×25	154	16×20	156	16×25	172
47	10×12.5	136	10×20	173	16×25	206	16×25	206	18×31.5	229
100	10×20	238	12.5×25	304	18×31.5	334	18×40	350		
220	12.5×25	403	16×31.5	537						
330	16×25	545	18×35.5	661						
470	16×31.5	702								
1,000	18×40	1,108								

Rated Ripple Current(mArms/105°C, 120Hz)  
 Case Size  $\varnothing D \times L$ (mm)