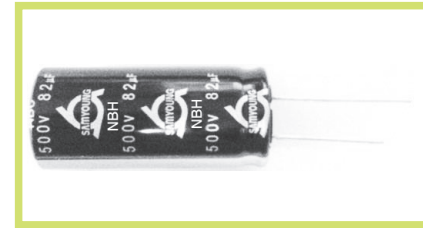
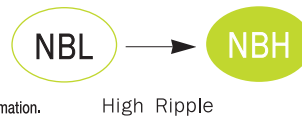


NBH Series

• 105°C 20,000Hrs assured.

- Non-solvent proof
- High Ripple and Long Life, Low Temp.
- For SMPS, IP-Board, Adaptor, LED Lighting
- RoHS compliant.
- Halogen-free capacitors are also available.
- AEC-Q200 compliant : Please contact us for more details, test data, information.



SPECIFICATIONS

Item	Characteristics											
Rated Voltage Range	160~500 V _{DC}											
Operating Temperature Range	-40~+105℃											
Capacitance Tolerance	±20%(M) (at 20℃, 120Hz)											
Leakage Current	<table><tr><td> C · V Time </td><td>After 1 minute</td><td>After 5 minutes</td></tr><tr><td>≤ 1000</td><td>I = 0.1CV + 40</td><td>I = 0.03CV + 15</td></tr><tr><td>> 1000</td><td>I = 0.04CV + 100</td><td>I = 0.02CV + 25</td></tr></table> Where, I:Max. Leakage current(μA) C:Nominal capacitance(μF) V:Rated voltage(V_{DC}) (at 20℃)			C · V Time	After 1 minute	After 5 minutes	≤ 1000	I = 0.1CV + 40	I = 0.03CV + 15	> 1000	I = 0.04CV + 100	I = 0.02CV + 25
C · V Time	After 1 minute	After 5 minutes										
≤ 1000	I = 0.1CV + 40	I = 0.03CV + 15										
> 1000	I = 0.04CV + 100	I = 0.02CV + 25										
Dissipation Factor(Tanδ)	<table><tr><td>Rated Voltage(V_{DC})</td><td>160~250</td><td>350~500</td></tr><tr><td>Tanδ(Max.)</td><td>0.20</td><td>0.24</td></tr></table> (at 20℃, 120Hz)			Rated Voltage(V _{DC})	160~250	350~500	Tanδ(Max.)	0.20	0.24			
Rated Voltage(V _{DC})	160~250	350~500										
Tanδ(Max.)	0.20	0.24										
Temperature Characteristics (Max. Impedance ratio)	<table><tr><td>Rated Voltage(V_{DC})</td><td>160~500</td></tr><tr><td>Z(- 25℃)/Z(20℃)</td><td>3</td></tr><tr><td>Z(- 40℃)/Z(20℃)</td><td>6</td></tr></table> (at 120Hz)			Rated Voltage(V _{DC})	160~500	Z(- 25℃)/Z(20℃)	3	Z(- 40℃)/Z(20℃)	6			
Rated Voltage(V _{DC})	160~500											
Z(- 25℃)/Z(20℃)	3											
Z(- 40℃)/Z(20℃)	6											
Load Life	The following specifications shall be satisfied when the capacitors are restored to 20℃ after the rated voltage with the rated ripple current is applied (the peak voltage shall not exceed the rated voltage) for 20,000 hours at 105℃. Capacitance change ≤ ±20% of the initial value Tanδ ≤ 200% 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℃ after exposing them for 1,000 hours at 105℃ 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 Tanδ ≤ 200% of the initial specified value Leakage current ≤ 500% of the initial specified value											
Others	Satisfied characteristics KS C IEC 60384-4											

DIMENSIONS OF NBH Series

Unit(mm)

		Marking : DARK BLUE SLEEVE, SILVER INK			
øD	16	18	20	22	
ød	0.8	0.8	0.8	1.0	
F	7.5	7.5	7.5	10.0	
øD'	øD + 0.5 max.				
L'	L + 2.0 max.				



MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS

RATINGS OF NBH Series

Vdc		160		200		250		350	
Items	μF	$\varnothing D \times L(mm)$	Rated Ripple Current (mA _{rms} /105°C, 120Hz)	$\varnothing D \times L(mm)$	Rated Ripple Current (mA _{rms} /105°C, 120Hz)	$\varnothing D \times L(mm)$	Rated Ripple Current (mA _{rms} /105°C, 120Hz)	$\varnothing D \times L(mm)$	Rated Ripple Current (mA _{rms} /105°C, 120Hz)
68								16 × 31.5	685
82				16 × 20	678			18 × 25	756
100				16 × 25	789	16 × 25	789	18 × 31.5	899
120				16 × 25	864	16 × 31.5	884	18 × 35.5	1,016
150		16 × 25	908	16 × 31.5	894	16 × 35.5	992	18 × 40	1,191
180		16 × 25	980	16 × 35.5	1,046	18 × 31.5	1,113	18 × 45	1,353
220		16 × 31.5	1,065	18 × 31.5	1,210	18 × 35.5	1,233		
		18 × 25	1,065						
270		16 × 35.5	1,210	18 × 40	1,419				
330		18 × 31.5	1,354	18 × 45	1,529				
470		18 × 40	1,789						

Vdc		400		420		450		500	
Items	μF	$\varnothing D \times L(mm)$	Rated Ripple Current (mA _{rms} /105°C, 120Hz)	$\varnothing D \times L(mm)$	Rated Ripple Current (mA _{rms} /105°C, 120Hz)	$\varnothing D \times L(mm)$	Rated Ripple Current (mA _{rms} /105°C, 120Hz)	$\varnothing D \times L(mm)$	Rated Ripple Current (mA _{rms} /105°C, 120Hz)
33				16 × 20	380	16 × 25	397	16 × 31.5	418
39				16 × 25	440	16 × 31.5	465	16 × 35.5	477
47		16 × 25	528	16 × 25	495	16 × 31.5	526	18 × 31.5	515
68		16 × 35.5	690	18 × 31.5	638	18 × 31.5	638	18 × 40	693
82		16 × 40	847	16 × 40	682	18 × 35.5	715	18 × 45	754
100		18 × 35.5	962	18 × 35.5	847	18 × 40	873	22 × 35	820
120		18 × 40	1,100	18 × 45	990	18 × 50	1,000	22 × 45	950
150		18 × 50	1,300					22 × 50	1,030

RATED RIPPLE CURRENT MULTIPLIERS

Frequency Multipliers

Cap. (μF)	Freq. (Hz)	120	1k	10k	50k	100k
33~82		1.00	1.75	2.25	2.35	2.50
100~470		1.00	1.67	2.05	2.15	2.25