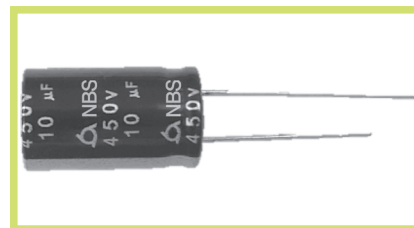
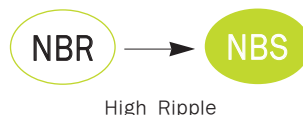


NBS Series

• 105°C 5,000Hrs assured

- Non-solvent proof.
- High ripple, Long Life, Low Temp.
- For SMPS, IP-Board, Adaptor, LED Lighting
- RoHS compliant.
- Halogen-free capacitors are also available.



SPECIFICATIONS

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

DIMENSIONS OF NBS Series

Unit(mm)

Marking : DARK BLUE SLEEVE, SILVER INK

	10	12.5	16	18	20
øD	10	12.5	16	18	20
ød	0.6	0.6	0.8	0.8	0.8
F	0.5	5.0	7.5	7.5	7.5
øD'	øD + 0.5 max.				
L'	L + 2.0 max.				

※ ø10 x 12L, L' ≤ L + 1.5

RATINGS OF NBS Series

Vdc	160		200		250		350	
Items μF	∅ D×L(mm)	Rated Ripple Current (mArms/105°C, 120Hz)	∅ D×L(mm)	Rated Ripple Current (mArms/105°C, 120Hz)	∅ D×L(mm)	Rated Ripple Current (mArms/105°C, 120Hz)	∅ D×L(mm)	Rated Ripple Current (mArms/105°C, 120Hz)
10					10×12	180	10×12	166
					10×12.5	180	10×12.5	166
15					10×12	204	10×16	183
					10×12.5	204	10×20	223
22	10×12	286	10×12	276	10×16	278	12.5×20	325
	10×12.5	286	10×12.5	276				
	10×16	335	10×16	290				
27	10×12	330	10×16	315	10×20	327	12.5×20	355
	10×12.5	330						
	10×16	368						
33	10×16	360	10×20	373	12.5×20	391	12.5×20	368
39	10×16	365	10×20	405	12.5×20	429	12.5×25	399
47	10×20	436	10×20	436	12.5×20	494	12.5×30	511
			12.5×20	494				
68	10×20	515	12.5×20	595	12.5×25	665	16×25	685
			12.5×25	665				
82	10×25	575	12.5×25	711	12.5×30	782	18×25	779
	12.5×20	575	16×20	711				
100	12.5×20	650	12.5×30	835	16×25	828	18×31.5	926
			16×25	835				
120	10×33	745	12.5×35	965	16×25	907	18×35.5	1047
	12.5×25	745	16×25	927				
150	16×25	935	16×25	953	18×25	1042	18×35.5	1174
180	16×25	1029	16×31.5	1080	18×31.5	1169	18×40	1309
220	16×31.5	1118	18×31.5	1310	18×31.5	1271		
	18×25	1118						
270	16×35.5	1271	18×35.5	1461				
330	16×40	1451	18×40	1588				
	18×31.5	1422						
470	18×40	1780						

Vdc	400		420		450		500	
Items μF	∅ D×L(mm)	Rated Ripple Current (mArms/105°C, 120Hz)	∅ D×L(mm)	Rated Ripple Current (mArms/105°C, 120Hz)	∅ D×L(mm)	Rated Ripple Current (mArms/105°C, 120Hz)	∅ D×L(mm)	Rated Ripple Current (mArms/105°C, 120Hz)
6.8							10×16	125
8.2	10×12	148	10×16	130	10×16	130	10×20	158
	10×12.5	148						
10	10×16	165	10×20	160	10×20	160	12.5×20	185
22	12.5×20	335	12.5×20	260	12.5×25	285	12.5×30	290
27	12.5×20	350	12.5×20	288	12.5×25	325	12.5×40	368
33	12.5×25	386	12.5×30	385	12.5×30	385	12.5×45	415
			16×20	390	16×20	390	16×25	395
39	12.5×25	390	12.5×35	428	12.5×35	428	12.5×50	470
	12.5×30	420	16×25	450	16×25	450	16×31.5	460
47	12.5×35	510	12.5×40	520	12.5×40	520	16×35.5	525
	16×25	530	16×25	520	16×25	520	18×31.5	525
68	12.5×40	615	18×25	620	18×25	620	16×45	700
	18×25	700			18×31.5	660	18×35.5	685
82	18×31.5	850	18×25	678	16×40	730	16×50	760
			18×31.5	730	18×31.5	730	18×40	745
100	18×31.5	900	16×45	860	16×45	855	18×45	900
	18×35.5	970	18×35.5	860	18×35.5	855	20×40	900
120	18×35.5	1,050	16×50	950	16×50	950	18×50	1050
	18×40	1,120	18×40	950	18×40	950		
150	18×40	1,250	16×50	1,150				
			18×45	1,150				
180	18×45	1,315						
	20×40	1,315						

RATED RIPPLE CURRENT MULTIPLIERS

Frequency Multipliers

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