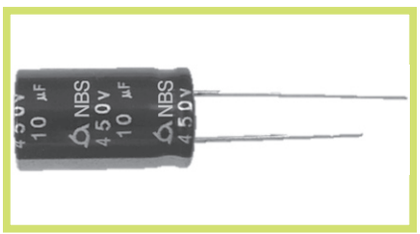
NBS Series

• 105℃ 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.**

NBR → NBS

High Ripple

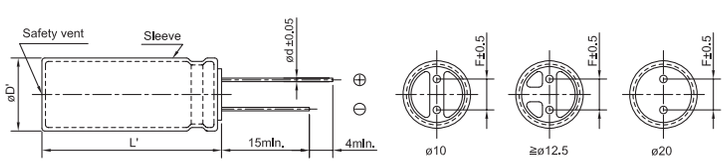


SPECIFICATIONS

Item	Characteristics
Rated Voltage Range	160 ~ 500 V_{DC}
Operating Temperature Range	-40 ~ +105℃
Capacitance Tolerance	±20% (M) (at 20℃, 120Hz)
Leakage Current	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 Where, I : Max. Leakage current(μA) C : Nominal capacitance(μF) V : Rated voltage(V_{DC}) (at 20℃)
Dissipation Factor(Tanδ)	Rated Voltage(V_{DC}): 160 ~ 250 / 350 ~ 500 Tanδ(Max.): 0.20 / 0.24 (at 20℃, 120Hz)
Temperature Characteristics (Max. Impedance ratio)	Rated Voltage(V_{DC}): 160 ~ 500 Z(-25℃)/Z(+20℃): 3 Z(-40℃)/Z(+20℃): 6 (at 120Hz)
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 5,000 hours at 105℃. Capacitance change ≤ ±20 % of the initial value tan δ ≤ 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 tan δ ≤ 200 % of the initial specified value Leakage current ≤ 500% of the initial specified value
Others	Satisfied characteristics KS C IEC 60384-4

DIMENSIONS OF NBS Series

Unit(mm)



Marking : DARK BLUE SLEEVE, SILVER INK

ØD	10	12.5	16	18	20	22
Ød	0.6	0.6	0.8	0.8	0.8	0.8
F	0.5	5.0	7.5	7.5	7.5	10.0
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	ø D×L(mm)	Rated Ripple Current (mArms/105℃, 120Hz)	ø D×L(mm)	Rated Ripple Current (mArms/105℃, 120Hz)	ø D×L(mm)	Rated Ripple Current (mArms/105℃, 120Hz)	ø D×L(mm)	Rated Ripple Current (mArms/105℃, 120Hz)
10					10×12	180	10×12	168
							10×12.5	168
					10×12.5	180	10×16	176
15					10×12	204	10×20	228
					10×12.5	204		
22	10×12	286	10×12	276	10×16	278	12.5×20	343
	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	362
	10×12.5	330						
	10×16	368						
33	10×16	360	10×20	373	12.5×20	391	12.5×20	369
39	10×16	365	10×20	405	12.5×20	429	12.5×25	406
47	10×20	436	10×20	436	12.5×20	494	12.5×30	521
			12.5×20	494				
68	10×20	515	12.5×20	595	12.5×25	665	16×25	699
			12.5×25	665				
82	10×25	575	12.5×25	711	12.5×30	782	18×25	794
	12.5×20	575	16×20	711				
100	12.5×20	650	12.5×30	835	16×25	828	18×31.5	944
			16×25	835				
120	10×33	745	12.5×35	965	16×25	907	18×35.5	1067
	12.5×25	745	16×25	927				
150	16×25	935	16×25	953	18×25	1042	18×35.5	1197
180	16×25	1029	16×31.5	1080	18×31.5	1169	18×40	1336
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	ø D×L(mm)	Rated Ripple Current (mArms/105℃, 120Hz)	ø D×L(mm)	Rated Ripple Current (mArms/105℃, 120Hz)	ø D×L(mm)	Rated Ripple Current (mArms/105℃, 120Hz)	ø D×L(mm)	Rated Ripple Current (mArms/105℃, 120Hz)
6.8							10×16	125
8.2	10×12	152	10×16	130	10×16	130	10×20	158
	10×12.5	152						
10	10×16	168	10×20	160	10×20	160	12.5×20	185
22	12.5×20	343	12.5×20	260	12.5×25	285	12.5×30	290
27	12.5×20	362	12.5×20	288	12.5×25	325	12.5×40	368
33	12.5×25	397	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	406	12.5×35	428	12.5×35	428	12.5×50	470
	12.5×30	437	16×25	450	16×25	450	16×31.5	460
47	12.5×35	533	12.5×40	520	12.5×40	520	16×35.5	525
	16×25	554	16×25	520	16×25	520	18×31.5	525
68	12.5×40	635	18×25	620	18×25	620	16×45	700
	18×25	725			18×31.5	660	18×35.5	685
82	18×31.5	889	18×25	678	16×40	730	16×50	760
			18×31.5	730	18×31.5	730	18×40	745
100	18×31.5	944	16×45	860	16×45	855	18×45	900
	18×35.5	1,010	18×35.5	860	18×35.5	855	20×40	900
							22×35	900
120	18×35.5	1,067	16×50	950	16×50	950	18×50	1050
	18×40	1,159	18×40	950	18×40	950		
150	18×40	1,296	16×50	1,150				
			18×45	1,150				
180	18×45	1,372						
	20×40	1,372						

RATED RIPPLE CURRENT MULTIPLIERS

Frequency Multipliers

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