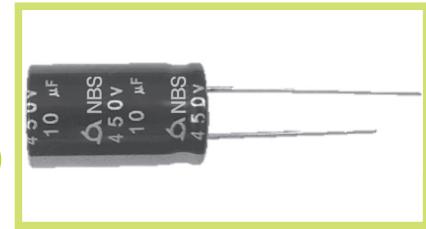


NBS Series

- 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.

• 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°C											
Capacitance Tolerance	±20% (M) (at 20°C, 120Hz)											
Leakage Current	<table><tr><td>CV \ 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>	CV \ 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		
	CV \ 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										
Where, I : Max. Leakage current(μA) C : Nominal capacitance(μF) V : Rated voltage(V _{DC}) (at 20°C)												
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>	Rated Voltage(V _{DC})	160 ~ 250	350 ~ 500	Tanδ(Max.)	0.20	0.24	(at 20°C, 120Hz)				
	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°C)/Z(+20°C)</td><td>3</td></tr><tr><td>Z(-40°C)/Z(+20°C)</td><td>6</td></tr></table>	Rated Voltage(V _{DC})	160 ~ 500	Z(-25°C)/Z(+20°C)	3	Z(-40°C)/Z(+20°C)	6	(at 120Hz)				
	Rated Voltage(V _{DC})	160 ~ 500										
	Z(-25°C)/Z(+20°C)	3										
Z(-40°C)/Z(+20°C)	6											
Load Life	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.											
	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°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.											
	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)

CHREX

Technical drawing of a capacitor component. The side view shows a cylindrical body with a 'Safety vent' at the top and a 'Sleeve' at the bottom. The length is labeled 'L' and the diameter is labeled 'øD'. The sleeve has a length of '15min.' and a diameter of 'ød ±0.05'. The end view shows a circular face with a diameter of 'ø10' and a thickness of 'F ±0.5'. The side view also shows a diameter of 'ø20' and a thickness of 'F ±0.5'.

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	1,0
F	5,0	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



MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS

RATINGS OF NBS Series

V _{DC}		160		200		250		350	
μF	Items	ø D×L(mm)	Rated Ripple Current (mA _{rms} /105°C, 120Hz)	ø D×L(mm)	Rated Ripple Current (mA _{rms} /105°C, 120Hz)	ø D×L(mm)	Rated Ripple Current (mA _{rms} /105°C, 120Hz)	ø D×L(mm)	Rated Ripple Current (mA _{rms} /105°C, 120Hz)
10						10×12	180	10×12	168
						10×12.5	180	10×12.5	168
15						10×12	204	10×16	176
						10×12.5	204	10×20	228
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						

V _{DC}		400		420		450		500	
μF	Items	ø D×L(mm)	Rated Ripple Current (mA _{rms} /105°C, 120Hz)	ø D×L(mm)	Rated Ripple Current (mA _{rms} /105°C, 120Hz)	ø D×L(mm)	Rated Ripple Current (mA _{rms} /105°C, 120Hz)	ø D×L(mm)	Rated Ripple Current (mA _{rms} /105°C, 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
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				
180		18×45	1,372	18×45	1,150				

RATED RIPPLE CURRENT MULTIPLIERS

Frequency Multipliers

Cap.(μF)	Freq.(Hz)	120	1k	10k	50k	100k
6.8~82		1.00	1.75	2.25	2.35	2.50
		1.00	1.67	2.05	2.15	2.25