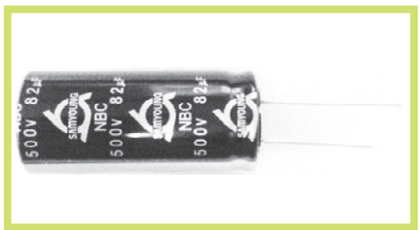
NBC Series

• 105℃ 5,000~12,000Hrs 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.

NFR → NBC

High Ripple, Low Temp.

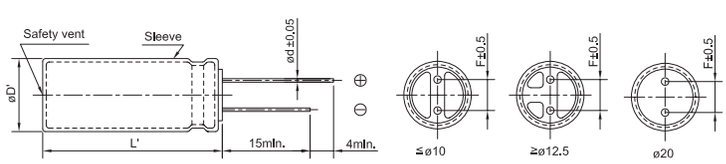


SPECIFICATIONS

Item	Characteristics
Rated Voltage Range	160~500 V_{DC}
Operating Temperature Range	-40~+105℃
Capacitance Tolerance	±20%(M) (at 20℃, 120Hz)
Leakage Current	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 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 specifcations shall be satisfied when the capacitors are restored to 20℃ after the rated voltage with the rated ripple current is applied (the peak volrage shall not exceed the rated voltage) for 12,000 hours at 105℃. (where 5,000 hours for ø6.3, 8,000 hours for ø8, 10,000 hours for ø10) 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 volage 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 NBC Series

Unit(mm)



Marking : DARK BLUE SLEEVE, SILVER INK

øD	6.3	8	10	12.5	16	18	20	22
ød	0.5	0.6	0.6	0.6	0.8	0.8	0.8	0.8
F	2.5	3.5	5.0	5.0	7.5	7.5	7.5	10.0
øD'	øD+0.5 max.							
L'	L+1.5max.	L+2.0 max.						

※ ø10 x 12L, L'≦ L+1.5

RATINGS OF NBC Series

WVDC	160		200		250		350	
Items / μF	ØD×L(mm)	Rated Ripple Current (mArms/105℃, 120Hz)	ØD×L(mm)	Rated Ripple Current (mArms/105℃, 120Hz)	ØD×L(mm)	Rated Ripple Current (mArms/105℃, 120Hz)	ØD×L(mm)	Rated Ripple Current (mArms/105℃, 120Hz)
4.7			8×11.5	77	8×15	80	8×11.5	93
6.8	8×11.5	90	8×15	103	8×20	106	8×15	101
					10×12	119		
					10×12.5	119		
10	8×15	121	8×11.5	113	10×12	160	10×12	153
							10×12.5	153
			8×20	140	10×12.5	160	10×16	158
15	8×15	148	8×15	148	10×12	174	10×20	197
					10×12.5	174		
22	10×12	221	10×12	221	10×16	230	12.5×20	297
	10×12.5	221	10×12.5	221				
	10×16	243	10×16	243				
27	10×12	240	10×16	264	10×20	270	12.5×20	314
	10×12.5	240						
	10×16	264						
33	10×16	270	10×20	308	12.5×20	323	12.5×20	319
39	10×16	292	10×20	336	12.5×20	354	12.5×25	352
47	10×20	369	10×20	369	12.5×20	440	12.5×30	451
			12.5×20	440				
68	10×20	400	12.5×20	492	12.5×25	594	16×25	605
			12.5×25	594				
82	10×25	455	12.5×25	616	12.5×30	660	18×25	688
	12.5×20	495	16×20	616				
100	12.5×20	561	12.5×30	700	16×25	717	18×31.5	817
			16×25	717				
120	10×33	638	12.5×35	815	16×25	785	18×35.5	924
	12.5×25	638	16×25	785				
150	16×25	825	16×25	836	18×25	902	18×35.5	1,036
180	16×25	891	16×31.5	935	18×31.5	1,012	18×40	1,155
220	16×31.5	968	18×31.5	1,100	18×31.5	1,100		
	18×25	968						
270	16×35.5	1,100	18×35.5	1,265				
330	16×40	1,256	18×40	1,375				
	18×31.5	1,231						
470	18×40	1,541						

WVDC	400		420		450		500	
Items / μF	ØD×L(mm)	Rated Ripple Current (mArms/105℃, 120Hz)	ØD×L(mm)	Rated Ripple Current (mArms/105℃, 120Hz)	ØD×L(mm)	Rated Ripple Current (mArms/105℃, 120Hz)	ØD×L(mm)	Rated Ripple Current (mArms/105℃, 120Hz)
1	6.3×11	22	6.3×11	17	6.3×11	17		
1.5	6.3×15	32	6.3×15	24	6.3×15	24		
	8×11.5	34	8×11.5	26	8×11.5	26		
2.2	8×11.5	41	8×11.5	30	8×15	33		
3.3	8×11.5	50	8×11.5	37	8×11.5	37	10×12	63
							10×12.5	63
4.7	8×11.5	60	8×11.5	44	10×12	76	10×12	75
					10×12.5	76	10×12.5	75
6.8	8×15	94	8×20	105	8×20	105	10×16	110
8.2	8×20	119	10×16	113	10×16	113	10×20	141
	10×12	132						
	10×12.5	132						
10	10×16	145	10×20	135	10×20	135	12.5×20	165
22	12.5×20	297	12.5×20	225	12.5×25	250	12.5×30	260
27	12.5×20	314	12.5×20	254	12.5×25	265	12.5×40	329
33	12.5×25	343	12.5×30	340	12.5×30	340	12.5×45	370
			16×20	345	16×20	345	16×25	350
39	12.5×25	352	12.5×35	380	12.5×35	380	12.5×50	420
	12.5×30	378	16×25	400	16×25	400	16×31.5	413
47	12.5×35	462	12.5×40	450	12.5×40	450	16×35.5	462
	16×25	480	16×25	450	16×25	450	18×31.5	468
68	12.5×40	550	18×25	520	18×25	560	16×45	630
	18×25	627	18×31.5	580	18×31.5	590	18×35.5	600
82	18×25	700	18×25	600	16×40	650	16×50	685
	18×31.5	770	18×31.5	650	18×31.5	650	18×40	670
100	18×31.5	817	16×45	770	16×45	770	18×45	800
	18×35.5	875	18×35.5	770	18×35.5	770	20×40	800
							22×35	800
120	18×35.5	924	16×50	850	16×50	850	18×50	920
	18×40	1,003	18×40	850	18×40	850		
150	18×40	1,122	18×45	1,000				
			20×40	1,000				
180	18×45	1,188						
	20×40	1,188						

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