

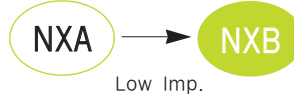


# MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS

## NXB Series

• 105°C 2,000~5,000Hrs assured.

- Non-solvent proof.
- Very Low Impedance.
- For SMPS, IP-Board, Adaptor, Noise Filter, Charger.
- RoHS compliant.
- Halogen-free capacitors are also available.



### SPECIFICATIONS

Item	Characteristics																				
Rated Voltage Range	6.3 ~ 120 V <sub>DC</sub>																				
Operating Temperature Range	-40 ~ +105°C																				
Capacitance Tolerance	±20%(M) (at 20°C, 120Hz)																				
Leakage Current	I = 0.01CV(μA) or 3μA, whichever is greater. Where, I:Max. Leakage current(μA), C:Nominal capacitance(μF), V:Rated voltage(V <sub>DC</sub> ) (at 20°C, 2 minutes)																				
Dissipation Factor(Tan δ)	<table border="1"> <tr> <td>Rated voltage(V<sub>DC</sub>)</td> <td>6.3</td> <td>10</td> <td>16</td> <td>25</td> <td>35</td> <td>50</td> <td>63</td> <td>100</td> <td>120</td> </tr> <tr> <td>Tan δ(Max)</td> <td>0.22</td> <td>0.19</td> <td>0.16</td> <td>0.14</td> <td>0.12</td> <td>0.10</td> <td>0.09</td> <td>0.08</td> <td>0.08</td> </tr> </table> <p>When the capacitance exceeds 1,000μF, 0.02 shall be added every 1,000μF increase. (at 20°C, 120Hz)</p>	Rated voltage(V <sub>DC</sub> )	6.3	10	16	25	35	50	63	100	120	Tan δ(Max)	0.22	0.19	0.16	0.14	0.12	0.10	0.09	0.08	0.08
Rated voltage(V <sub>DC</sub> )	6.3	10	16	25	35	50	63	100	120												
Tan δ(Max)	0.22	0.19	0.16	0.14	0.12	0.10	0.09	0.08	0.08												
Temperature Characteristics (Max. Impedance ratio)	<table border="1"> <tr> <td>Z(-25°C)/Z(20°C)</td> <td>2</td> </tr> <tr> <td>Z(-40°C)/Z(20°C)</td> <td>3</td> </tr> </table> <p>(at 120Hz)</p>	Z(-25°C)/Z(20°C)	2	Z(-40°C)/Z(20°C)	3																
Z(-25°C)/Z(20°C)	2																				
Z(-40°C)/Z(20°C)	3																				
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) at 105°C for the specified period of time.</p> <table border="1"> <tr> <td>∅ D</td> <td>Life Time</td> </tr> <tr> <td>∅ 5, 6.3</td> <td>2,000 hours</td> </tr> <tr> <td>∅ 8</td> <td>3,000 hours</td> </tr> <tr> <td>∅ 10</td> <td>4,000 hours</td> </tr> <tr> <td>∅ 12.5 ~</td> <td>5,000 hours</td> </tr> </table> <p>Capacitance change ≤ ±25% of the initial value Tan δ ≤ 200% of the initial specified value Leakage current ≤ The initial specified value</p>	∅ D	Life Time	∅ 5, 6.3	2,000 hours	∅ 8	3,000 hours	∅ 10	4,000 hours	∅ 12.5 ~	5,000 hours										
∅ D	Life Time																				
∅ 5, 6.3	2,000 hours																				
∅ 8	3,000 hours																				
∅ 10	4,000 hours																				
∅ 12.5 ~	5,000 hours																				
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 ≤ ±25% of the initial value Tan δ ≤ 200% of the initial specified value Leakage current ≤ The initial specified value</p>																				
Others	Satisfied characteristics KS C IEC 60384-4																				

### DIMENSIONS OF NXB Series

Unit(mm)

Marking : DARK BROWN SLEEVE, SILVER INK

∅D	5	6.3	8	10	12.5	16	18
∅d	0.5	0.5	0.6	0.6	0.6	0.8	0.8
F	2.0	2.5	3.5	5.0	5.0	7.5	7.5
∅D'	∅D + 0.5 max.						
L'	L + 1.5 max.			L + 2.0 max.			

※ ∅10 x 12L, L' ≤ L + 1.5

## MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS

### RATINGS OF NXB Series

V <sub>DC</sub> ∅D×L(mm)	6.3				10				16			
	μF	IMP.		Ripple	μF	IMP.		Ripple	μF	IMP.		Ripple
		20°C	-10°C			20°C	-10°C			20°C	-10°C	
5 × 11	220	0.30	1.0	250	150	0.30	1.00	250	100	0.30	1.0	250
6.3 × 11	470	0.13	0.41	405	330	0.13	0.41	405	100	0.15	0.41	385
									220	0.13	0.36	405
6.3 × 15	560	0.10	0.32	646	470	0.10	0.32	646	330	0.10	0.32	646
8 × 11.5	820	0.072	0.22	760	330	0.094	0.28	600	470	0.072	0.22	760
					680	0.072	0.22	760				
8 × 15	1,200	0.060	0.18	818	1,000	0.060	0.18	818	680	0.060	0.18	818
8 × 20	1,500	0.050	0.16	1,260	1,200	0.050	0.16	1,260	1,000	0.050	0.16	1,260
10 × 12	1,200	0.053	0.16	1,360	820	0.053	0.16	1,360	680	0.053	0.16	1,360
					1000	0.053	0.16	1,360				
10 × 12.5	1,200	0.053	0.16	1,360	820	0.053	0.16	1,360	680	0.053	0.16	1,360
					1000	0.053	0.16	1,360				
10 × 16	1,800	0.038	0.12	1,430	1,000	0.038	0.12	1,430	1,000	0.038	0.12	1,430
					1,500	0.038	0.12	1,430				
10 × 20	2,200	0.023	0.069	1,820	1,500	0.023	0.069	1,820	1,500	0.023	0.069	1,820
10 × 25	3,300	0.022	0.066	2,150	2,200	0.022	0.066	2,150	1,800	0.022	0.066	2,150
12.5 × 16	1,800	0.031	0.078	1,452	1,500	0.031	0.078	1,452	1,000	0.031	0.078	1,452
12.5 × 20	3,900	0.021	0.053	2,360	3,300	0.021	0.053	2,360	2,200	0.021	0.053	2,360
12.5 × 25	4,700	0.020	0.050	2,770	3,900	0.020	0.050	2,770	2,700	0.020	0.050	2,770
12.5 × 30	5,600	0.018	0.046	3,290	4,700	0.018	0.046	3,290	3,300	0.018	0.046	3,290
12.5 × 35	6,800	0.017	0.044	3,400	5,600	0.017	0.044	3,400	3,900	0.017	0.044	3,400
16 × 15	2,700	0.040	0.101	1,375	1,800	0.040	0.101	1,375	1,200	0.040	0.101	1,375
16 × 20	5,600	0.021	0.053	3,140	4,700	0.021	0.053	3,140	3,300	0.021	0.053	3,140
16 × 25	6,800	0.019	0.051	3,460	5,600	0.019	0.051	3,460	4,700	0.019	0.051	3,460
16 × 31.5	8,200	0.013	0.035	3,680	6,800	0.013	0.035	3,680	5,600	0.013	0.035	3,680
18 × 20	5,600	0.020	0.052	3,265	4,700	0.020	0.052	3,265	3,300	0.020	0.052	3,265
18 × 25	8,200	0.018	0.049	3,611	5,600	0.018	0.049	3,611	3,900	0.018	0.049	3,611

V <sub>DC</sub> ∅D×L(mm)	25				35				50							
	μF	IMP.		Ripple	μF	IMP.		Ripple	μF	IMP.		Ripple				
		20°C	-10°C			20°C	-10°C			20°C	-10°C					
5 × 11	68	0.30	1.0	250	47	0.30	1.0	250	1	2.50	8.68	53				
									2.2	2.50	8.68	56				
									4.7	1.50	5.21	82				
									10	1.0	3.47	250				
									22	0.30	1.04	250				
									27	0.30	1.04	250				
6.3 × 11	150	0.13	0.41	405	100	0.13	0.41	405	47	0.14	0.50	350				
									56	0.14	0.50	385				
6.3 × 15	220	0.10	0.32	646	150	0.10	0.32	646	100	0.10	0.32	646				
8 × 11.5	220	0.072	0.22	760	150	0.072	0.22	760	100	0.072	0.21	724				
8 × 15	390	0.060	0.18	818	270	0.060	0.18	818	120	0.060	0.24	818				
8 × 20	560	0.050	0.16	1,260	390	0.050	0.16	1,260	180	0.050	0.18	1,260				
10 × 12	330	0.053	0.16	1,360	220	0.053	0.16	1,360	150	0.061	0.18	979				
													470	0.053	0.16	1,360
10 × 12.5	330	0.053	0.16	1,360	220	0.053	0.16	1,360	150	0.061	0.18	979				
													470	0.053	0.16	1,360
10 × 16	470	0.038	0.12	1,430	470	0.038	0.12	1,430	220	0.042	0.12	1,370				
													680	0.038	0.12	1,430
10 × 20	680	0.023	0.069	1,820	560	0.023	0.069	1,820	330	0.030	0.090	1,580				
													820	0.023	0.069	2,000
													1,000	0.025	0.075	1,900
10 × 25	1,000	0.022	0.066	2,150	680	0.022	0.066	2,150	470	0.028	0.085	1,870				
12.5 × 16	680	0.031	0.078	1,452	470	0.031	0.078	1,452	270	0.042	0.078	1,071				
12.5 × 20	1,500	0.021	0.053	2,360	1,000	0.021	0.053	2,360	470	0.027	0.068	2,050				
12.5 × 25	1,800	0.020	0.050	2,770	1,000	0.020	0.050	2,770	560	0.023	0.059	2,410				
													2,200	0.020	0.050	2,770
12.5 × 30	2,200	0.018	0.046	3,290	1,500	0.018	0.046	3,290	680	0.021	0.052	2,860				
12.5 × 35	2,700	0.017	0.044	3,400	1,800	0.017	0.044	3,400	820	0.019	0.051	2,960				
16 × 15	820	0.040	0.101	1,375	560	0.040	0.101	1,375	390	0.046	0.114	1,196				
16 × 20	2,200	0.021	0.053	3,140	1,500	0.021	0.053	3,140	820	0.023	0.059	2,730				
													1,800	0.019	0.051	3,460
16 × 25	3,300	0.019	0.051	3,460	2,200	0.019	0.051	3,460	1,000	0.021	0.056	3,010				
													2,200	0.019	0.051	3,460
16 × 31.5	3,300	0.013	0.035	3,680	2,200	0.013	0.035	3,680	1,500	0.014	0.037	3,201				
18 × 20	2,200	0.020	0.052	3,265	1,500	0.020	0.052	3,265	1,000	0.022	0.059	2,850				
18 × 25	2,700	0.018	0.049	3,611	1,800	0.018	0.049	3,611	1,200	0.020	0.053	3,140				

NXB Series



## MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS

### RATINGS OF NXB Series

∅D×L(mm)	V <sub>DC</sub>			
	μF	63		Ripple
		IMP.		
		20°C	-10°C	
5 × 11	10	0.45	1.8	165
6.3 × 11	33	0.30	1.2	265
6.3 × 15	47	0.25	1.0	420
8 × 11.5	47	0.20	0.80	500
	68	0.20	0.80	500
10 × 12	68	0.16	0.64	600
10 × 12.5	68	0.16	0.64	600
10 × 16	100	0.10	0.40	945
10 × 20	150	0.080	0.32	1,100
10 × 25	220	0.070	0.28	1,300
12.5 × 20	330	0.040	0.16	1,495
16 × 20	470	0.035	0.14	1,990
16 × 25	680	0.030	0.12	2,780
16 × 31.5	1,000	0.020	0.080	2,835

∅D×L(mm)	V <sub>DC</sub> 100				V <sub>DC</sub> 120			
	μF	IMP.		Ripple	μF	IMP.		Ripple
		20°C	-10°C			20°C	-10°C	
5 × 11	3.3	2.0	8.0	125				
5 × 11	4.7	2.0	8.0	125				
6.3 × 11	10	0.50	2.0	205				
6.3 × 15	22	0.40	1.6	300				
8 × 11.5	22	0.30	1.2	355	22	0.30	1.2	472
	33	0.25	1.0	450	33	0.25	1.0	599
10 × 12.5	33	0.25	1.0	450	33	0.25	1.0	599
10 × 16	47	0.20	0.80	580	47	0.20	0.80	771
12.5 × 20	100	0.10	0.40	1,045	100	0.10	0.40	1,400
12.5 × 25	150	0.070	0.28	1,195	120	0.070	0.28	1,589
16 × 25	220	0.060	0.24	1,600	220	0.060	0.24	2,128
	330	0.040	0.16	1,750	270	0.040	0.16	2,328
16 × 31.5	470	0.040	0.16	1,750				
	820	0.030	0.12	2,060	560	0.036	0.144	2,740

Rated Ripple Current (mA rms/105°C, 100kHz)  
 Impedance (Ω max./100kHz)  
 Nominal Capacitance (μF)

### RIPPLE CURRENT MULTIPLIERS

Frequency Multipliers

Cap. (μF)	Freq. (Hz)	120	1k	10k	50k	100k
1 ~ 180		0.40	0.75	0.90	0.95	1.00
220 ~ 560		0.50	0.85	0.94	0.96	1.00
680 ~ 1,800		0.60	0.87	0.95	0.97	1.00
2,200 ~ 3,900		0.75	0.90	0.95	0.97	1.00
4,700 ~ 8,200		0.85	0.95	0.98	0.99	1.00

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