

## NFA Series

• 105°C 7,000~10,000Hrs assured.

- Non-solvent proof.
- High Ripple, Long Life.
- For ballasts stabilizer.
- RoHS compliant.
- Halogen-free capacitors are also available.



## SPECIFICATIONS

Item	Characteristics													
Rated Voltage Range	160~400 V <sub>DC</sub>	420~500 V <sub>DC</sub>												
Operating Temperature Range	-40~+105°C	-25~+105°C												
Capacitance Tolerance	±20%(M) (at 20°C, 120Hz)													
Leakage Current	<table border="1"> <thead> <tr> <th>C · V</th> <th>Time</th> <th>After 1 minute</th> <th>After 5 minutes</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>&gt; 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<sub>DC</sub>) (at 20°C)</p>		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
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											
Dissipation Factor(Tanδ)	<table border="1"> <thead> <tr> <th>Rated Voltage(V<sub>DC</sub>)</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 <sub>DC</sub> )	160~250	350~500	Tanδ(Max.)	0.20	0.24						
Rated Voltage(V <sub>DC</sub> )	160~250	350~500												
Tanδ(Max.)	0.20	0.24												
Temperature Characteristics (Max. Impedance ratio)	<table border="1"> <thead> <tr> <th>Rated Voltage(V<sub>DC</sub>)</th> <th>160~250</th> <th>350~400</th> <th>420~500</th> </tr> </thead> <tbody> <tr> <td>Z(-25°C)/Z(20°C)</td> <td>3</td> <td>5</td> <td>6</td> </tr> <tr> <td>Z(-40°C)/Z(20°C)</td> <td>6</td> <td>6</td> <td>-</td> </tr> </tbody> </table> <p>(at 120Hz)</p>		Rated Voltage(V <sub>DC</sub> )	160~250	350~400	420~500	Z(-25°C)/Z(20°C)	3	5	6	Z(-40°C)/Z(20°C)	6	6	-
Rated Voltage(V <sub>DC</sub> )	160~250	350~400	420~500											
Z(-25°C)/Z(20°C)	3	5	6											
Z(-40°C)/Z(20°C)	6	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 10,000 hours at 105°C. (where, 7,000 hours for ø8, 8,000 hours for ø10)</p> <p>Capacitance change ≤ ±20% of the initial value                      Tanδ ≤ 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                      Tanδ ≤ 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 NFA Series

Unit(mm)

Marking : DARK BROWN SLEEVE, SILVER INK

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

## RATINGS OF NFA Series

V <sub>DC</sub>	160		200	
Items μF	∅ D × L (mm)	Rated Ripple Current (mArms/105°C, 120Hz)	∅ D × L (mm)	Rated Ripple Current (mArms/105°C, 120Hz)
22	10 × 20	192	10 × 20	192
33	10 × 20	236	10 × 20	236
47	12.5 × 20	312	12.5 × 20	262
68	12.5 × 25	409	12.5 × 20	312
			10 × 33	409
			12.5 × 25	409
100	16 × 25	548	16 × 25	548
150	16 × 31.5	724	16 × 31.5	701
220	16 × 31.5	876	18 × 31.5	906
330	16 × 35.5	1,110		

V <sub>DC</sub>	250		350	
Items μF	∅ D × L (mm)	Rated Ripple Current (mArms/105°C, 120Hz)	∅ D × L (mm)	Rated Ripple Current (mArms/105°C, 120Hz)
10	10 × 20	130	10 × 20	126
22	12.5 × 20	214	12.5 × 20	207
33	12.5 × 25	285	16 × 20	284
47	12.5 × 25	340	16 × 25	364
56	10 × 33	350		
68	16 × 25	452	16 × 31.5	472
100	16 × 31.5	591	18 × 31.5	591
150	18 × 25	700	18 × 40	760
220	18 × 31.5	850	22 × 45	970
330	20 × 40	1,196		

V <sub>DC</sub>	400		420	
Items μF	∅ D × L (mm)	Rated Ripple Current (mArms/105°C, 120Hz)	∅ D × L (mm)	Rated Ripple Current (mArms/105°C, 120Hz)
2.2	8 × 11.5	27	8 × 11.5	25
3.3	8 × 11.5	33	8 × 11.5	31
4.7	8 × 11.5	39	8 × 11.5	37
6.8	8 × 15	63	8 × 20	76
8.2	8 × 20	75	10 × 16	87
10	10 × 20	126	10 × 20	116
15	10 × 20	154	10 × 25	155
22	12.5 × 25	225	12.5 × 20	191
33	16 × 20	284	16 × 20	262
47	16 × 25	364	16 × 25	335
68	16 × 31.5	472	18 × 25	435
82	18 × 31.5	536	16 × 31.5	507
100	18 × 35.5	611	18 × 31.5	580
120	18 × 40	680	18 × 40	659
150	18 × 40	760	18 × 45	757
180	20 × 40	855		
220	22 × 45	996		

**RATINGS OF NFA Series**

V <sub>DC</sub>	450		500	
Items μF	∅ D × L (mm)	Rated Ripple Current (mArms/105°C,120Hz)	∅ D × L (mm)	Rated Ripple Current (mArms/105°C,120Hz)
2.2	8 × 15	44		
3.3	10 × 16	63	10 × 12.5	52
4.7	10 × 16	74	10 × 12.5	62
6.8	10 × 20	96	10 × 16	83
8.2	10 × 20	106	10 × 20	98
10	10 × 20	108	12.5 × 20	120
	12.5 × 20	114		
22	16 × 25	241	16 × 25	228
33	12.5 × 30	315	18 × 25	260
	16 × 31.5	319		
47	18 × 25	368	18 × 31.5	393
56	16 × 31.5	410		
68	18 × 25	435	16 × 45	625
	18 × 31.5	473	18 × 35.5	550
82	18 × 35.5	537		
100	18 × 40	602		
120	18 × 40	659		
150	20 × 40	757		
180	22 × 45	892		
220				

**RATED RIPPLE CURRENT MULTIPLIERS**

Frequency Multipliers

Freq.(Hz)	120	1k	10k	50k	100k
Factor	1.00	1.25	1.50	1.60	1.75