

NFL Series

• 105°C 8,000~12,000Hrs assured.

- Non-solvent proof.
- High Ripple, Long Life.
- For ballasts stabilizer and other long life required applications.
- RoHS compliant.
- Halogen-free capacitors are also available.



SPECIFICATIONS

Item	Characteristics													
Rated Voltage Range	160~400 V _{DC}	450~500 V _{DC}												
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>> 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_{DC}) (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_{DC})</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 _{DC})	160~250	350~500	Tanδ(Max.)	0.20	0.24						
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Temperature Characteristics (Max. Impedance ratio)	<table border="1"> <thead> <tr> <th>Rated Voltage(V_{DC})</th> <th>160~250</th> <th>350~400</th> <th>450~500</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 _{DC})	160~250	350~400	450~500	Z(-25°C)/Z(20°C)	3	5	6	Z(-40°C)/Z(20°C)	6	6	-
Rated Voltage(V _{DC})	160~250	350~400	450~500											
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 12,000 hours at 105°C. (where, 8,000 hours for ø8, 10,000 hours for ø10, ø8x50L)</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 NFL Series

Unit(mm)

Marking : DARK BROWN SLEEVE, SILVER INK

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

※ ø8 x 11.5~20L, L' ≤ L+1.5

RATINGS OF NFL Series

V _{dc}		160		200	
Items μF	ø D × L (mm)	Rated Ripple Current (mArms/105°C, 120Hz)		ø D × L (mm)	Rated Ripple Current (mArms/105°C, 120Hz)
		27			
39	10 × 16		237	10 × 20	256
47	10 × 20		280	12.5 × 20	312
56	10 × 25		335	12.5 × 25	371
68	12.5 × 20		375	12.5 × 25	409
100	10 × 45		562	10 × 50	591
	12.5 × 25		496	16 × 25	550
150	16 × 31.5		724	12.5 × 50	786
				16 × 25	671
220	12.5 × 50		952	18 × 31.5	905
	16 × 31.5		876		
270	16 × 35.5		992	18 × 35.5	1,036
330	16 × 40		1,132	18 × 40	1,164
	18 × 31.5		1,109		
390	18 × 35.5		1,246		
470	18 × 40		1,389		

V _{dc}		250		350	
Items μF	ø D × L (mm)	Rated Ripple Current (mArms/105°C, 120Hz)		ø D × L (mm)	Rated Ripple Current (mArms/105°C, 120Hz)
		10	10 × 16		
22	10 × 20		192	12.5 × 20	213
33	10 × 25		257	8 × 50	245
				12.5 × 25	285
39	10 × 30		290	10 × 40	340
47	8 × 50		250	10 × 50	405
	12.5 × 20		312	16 × 25	375
68	10 × 40		450	16 × 31.5	503
	12.5 × 30		441	18 × 25	488
82	10 × 50		536	12.5 × 45	571
100	10 × 50		585	18 × 31.5	610
	16 × 25		548		
150	18 × 25		748		
180	12.5 × 50		800		
220	18 × 31.5		905		

V _{dc}		400		450	
Items μF	ø D × L (mm)	Rated Ripple Current (mArms/105°C, 120Hz)		ø D × L (mm)	Rated Ripple Current (mArms/105°C, 120Hz)
		3.3	8 × 11.5		
4.7	8 × 15		42	10 × 16	70
6.8	8 × 20		59	10 × 20	90
10	10 × 20		110	12.5 × 20	120
22	12.5 × 20		208	8 × 50	230
				16 × 25	228
27	8 × 50		154		
33	16 × 20		261	16 × 31.5	270
39	10 × 45		340	10 × 50	305
47	16 × 25		335	18 × 31.5	360
68	12.5 × 45		482	12.5 × 50	473
	16 × 31.5		460	18 × 35.5	500
82	12.5 × 50		527	18 × 35.5	549
	18 × 31.5		520		
100	18 × 35.5		630	12.5 × 60	626
				18 × 35.5	660
				18 × 40	670
120	18 × 40		700	20 × 40	720

RATINGS OF NFL Series

Vdc	500	
Items μF	∅ D × L (mm)	Rated Ripple Current (mArms/105°C,120Hz)
10	12.5 × 20	150
22	16 × 25	228
27	10 × 50	253
33	16 × 31.5	270
	18 × 25	260
39	12.5 × 50	358
47	18 × 31.5	360
60	12.5 × 60	467
68	18 × 35.5	500
82	18 × 40	606
100	20 × 40	657

RATED RIPPLE CURRENT MULTIPLIERS

Frequency Multipliers

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