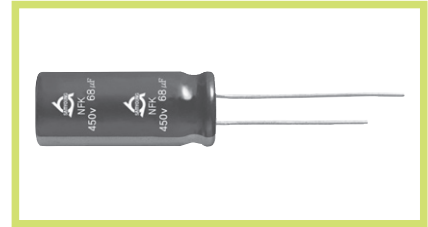
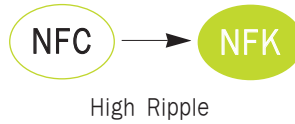


NFK Series

• 105°C 5,000Hrs assured.

- Non-solvent proof.
- High Ripple, Long Life.
- For SMPS, IP-Board, Adaptor.
- RoHS compliant.
- Halogen-free capacitors are also available.



SPECIFICATIONS

Item	Characteristics													
Rated Voltage Range	160 ~ 400 V _{DC}	420 ~ 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 \ Time</th> <th>After 1 minute</th> <th>After 5 minutes</th> </tr> </thead> <tbody> <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> </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						
Rated Voltage(V _{DC})	160~250	350~500												
Tanδ(Max.)	0.20	0.24												
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>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 _{DC})	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 _{DC})	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 5,000 hours at 105°C.</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 NFK 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	0.8
F	3.5	5.0	5.0	7.5	7.5	7.5	7.5	10.0
øD'	øD + 0.5 max.							
L'	L + 1.5 max.		L + 2.0 max.					

※ ø10 x 12L, L' ≤ L + 1.5

RATINGS OF NFK Series

V _{dc}	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			10×12	162
			10×12.5	162
25			8×20	160
27	10×12	240		
	10×12.5	240		
33	10×20	250	10×20	250
47	12.5×20	340	12.5×20	340
68	12.5×20	400	12.5×25	436
	12.5×25	436		
100	12.5×30	550	12.5×30	550
150	16×25	736	16×25	736
220	16×31.5	912	18×31.5	985
330	18×31.5	1,200		

V _{dc}	250		350	
Items μF	∅ D×L(mm)	Rated Ripple Current (mArms/105°C,120Hz)	∅ D×L(mm)	Rated Ripple Current (mArms/105°C,120Hz)
6.8	10×12	86		
	10×12.5	86		
10	8×15	95	8×20	120
	10×12.5	105	10×16	125
			10×20	130
15	10×12	128		
	10×12.5	128		
22	10×16	165	12.5×20	225
33	12.5×20	250	12.5×20	249
			12.5×25	260
			12.5×30	380
47	12.5×20	320	12.5×40	516
	12.5×25	375		
68	10×40	465	16×25	510
	12.5×30	463	18×25	620
82	12.5×35	515		
100	10×50	585	18×31.5	743
	16×25	591		
150	18×25	721	18×35.5	942
180	12.5×50	860	18×40	1,048
	18×31.5	813		
220	18×31.5	925		

V _{dc}	400		420	
Items μF	∅ D×L(mm)	Rated Ripple Current (mArms/105°C,120Hz)	∅ D×L(mm)	Rated Ripple Current (mArms/105°C,120Hz)
4.7				
6.8	8×15	90		
	8×20	105		
8.2	10×12	98		
	10×12.5	98		
10	10×16	125		
15	10×20	150		
	12.5×16	140		
22	10×25	200	10×20	135
27	12.5×20	250	12.5×20	215
33	12.5×25	295	16×20	340
	16×20	305		
47	10×45	352	16×25	368
	12.5×35	375	18×20	375
	16×25	436		
68	12.5×40	475	18×25	500
	18×25	472		
82	18×31.5	700	18×31.5	660
100	18×35.5	795	18×35.5	750
120	18×40	912	18×40	830
150	18×40	1,020	18×45	950
180	20×40	1,080		
220	22×45	1,200		

RATINGS OF NFK Series

V _{DC}	450		500	
Items μF	∅ D×L(mm)	Rated Ripple Current (mArms/105°C,120Hz)	∅ D×L(mm)	Rated Ripple Current (mArms/105°C,120Hz)
4.7	8×20	79		
6.8	10×16	100		
8.2	10×16	122		
10	10×20	135		
15	10×25	185		
22	10×33	215	12.5×30	220
27	12.5×25	260	10×50	305
33	12.5×30	335	12.5×45	365
	16×20	340		
39	10×45	353	12.5×50	425
47	10×50	400	18×31.5	468
	12.5×40	405		
	16×25	368		
60			12.5×60	515
68	18×25	500	16×45	585
			18×35.5	585
82	12.5×50	670	16×50	653
			18×35.5	640
			18×40	653
100	12.5×60	750	18×45	750
	16×45	750	20×40	800
	18×35.5	750		
120	16×50	800	18×50	850
	18×40	800	22×45	900
150	18×45	920	22×50	980
	20×40	930		
180	22×50	1,100		

RATED RIPPLE CURRENT MULTIPLIERS

Frequency Multipliers

Freq.(Hz)	120	1k	10k	50k	100k
Factor	1.00	1.25	1.50	1.75	2.00