NFK Series

• 105℃ 5,000Hrs assured.

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

NFC → NFK

High Ripple

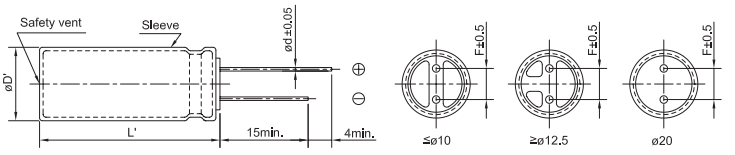


SPECIFICATIONS

Item	Characteristics	
Rated Voltage Range	160 ~ 400 V_{DC}	420 ~ 500 V_{DC}
Operating Temperature Range	-40 ~ +105℃	-25 ~ +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}): 160~250 / 350~400 / 420~500 Z(-25℃)/Z(+20℃): 3 / 5 / 6 Z(-40℃)/Z(+20℃): 6 / 6 / — (at 120Hz)	
Load Life	The following specifications shall be satisfied when the capacitors are restored to 20℃ 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℃. 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 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. 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 NFK Series

Unit(mm)



Marking : DARK BROWN SLEEVE, SILVER INK

ØD	8	10	12.5	16	18	20	22	25.4
Ød	0.6	0.6	0.6	0.8	0.8	0.8	1.0	1.0
F	3.5	5.0	5.0	7.5	7.5	7.5	10.0	10.0
ØD'	ØD+0.5 max.							
L'	L+1.5max.	L+2.0max.						

※ Ø10 x 12L, L'≦ L+1.5

RATINGS OF NFK Series

Vdc	Capacitance (μF)	ØD×L(㎜)	Rated Ripple Current (mArms/105℃, 120Hz)
160	27	10 × 12	240
		10 × 12.5	240
	33	10 × 20	250
	47	12.5 × 20	340
	68	12.5 × 20	400
		12.5 × 25	436
	100	12.5 × 30	550
	150	16 × 25	736
	220	16 × 31.5	912
	330	18 × 31.5	1200
		22 × 25	1190
	390	22 × 30	1370
	470	25.4 × 30	1610
	560	22 × 35	1740
		22 × 40	1820
	680	22 × 45	2090
		25.4 × 35	2050
	820	22 × 50	2390
		25.4 × 40	2350
	1000	25.4 × 50	2810
200	22	10 × 12	162
		10 × 12.5	162
	25	8 × 20	160
	33	10 × 20	250
	47	12.5 × 20	340
	68	12.5 × 25	436
	100	12.5 × 30	550
	150	16 × 25	736
	220	18 × 31.5	985
		22 × 25	990
	330	22 × 30	1290
	390	22 × 35	1480
		25.4 × 30	1510
	470	22 × 40	1710
		25.4 × 35	1740
	560	22 × 45	1940
		22 × 50	2020
		25.4 × 40	1990
	820	25.4 × 50	2610

RATED RIPPLE CURRENT MULTIPLIERS

Frequency Multipliers

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

Vdc	Capacitance (μF)	ØD×L(㎜)	Rated Ripple Current (mArms/105℃, 120Hz)
250	6.8	10 × 12	86
		10 × 12.5	86
	10	8 × 15	95
		10 × 12.5	105
	15	10 × 12	128
		10 × 12.5	128
	22	10 × 16	165
	33	12.5 × 20	250
	47	12.5 × 20	320
		12.5 × 25	375
	68	10 × 40	465
		12.5 × 30	463
	82	12.5 × 35	515
	100	10 × 50	585
		16 × 25	591
	150	18 × 25	721
	180	12.5 × 50	860
		18 × 31.5	813
		22 × 25	820
	220	18 × 31.5	925
		22 × 30	960
	270	22 × 35	1130
		25.4 × 30	1140
	330	22 × 40	1300
		25.4 × 35	1330
	390	22 × 45	1480
		25.4 × 40	1510
	470	22 × 50	1690
	560	25.4 × 50	1960
350	10	8 × 20	120
		10 × 16	125
		10 × 20	130
	22	12.5 × 20	225
	33	12.5 × 20	249
		12.5 × 25	260
	47	12.5 × 30	380
	68	12.5 × 40	516
		16 × 25	510
	82	18 × 25	620
	100	18 × 31.5	743
		22 × 25	720
	120	22 × 30	840
	150	18 × 35.5	942
		25.4 × 30	1010
	180	18 × 40	1048
		22 × 35	1090
	200	22 × 40	1200
		25.4 × 35	1230
	220	22 × 45	1320
	270	22 × 50	1510
		25.4 × 40	1490
	330	25.4 × 50	1780

RATINGS OF NFK Series

Vdc	Capacitance (μF)	ØD×L(㎜)	Rated Ripple Current (mArms/105℃, 120Hz)
400	6.8	8 × 15	90
	8.2	8 × 20	105
		10 × 12	98
		10 × 12.5	98
	10	10 × 16	125
	15	10 × 20	150
		12.5 × 16	140
	22	10 × 25	200
	27	12.5 × 20	250
	33	12.5 × 25	295
		16 × 20	305
	47	10 × 45	352
		12.5 × 35	375
		16 × 25	436
	68	12.5 × 40	475
		18 × 25	472
	82	18 × 31.5	700
		22 × 25	590
	100	18 × 35.5	795
	120	18 × 40	912
		22 × 30	760
	150	18 × 40	1020
		22 × 35	900
		25.4 × 30	920
	180	20 × 40	1080
		22 × 40	1040
		25.4 × 35	1060
	200	22 × 45	1140
	220	22 × 45	1200
		22 × 50	1240
		25.4 × 40	1220
	270	25.4 × 50	1470
	330	25.4 × 50	1520
420	22	10 × 20	135
	27	12.5 × 20	215
	33	16 × 20	340
	47	16 × 25	368
		18 × 20	375
	68	18 × 25	500
	82	18 × 31.5	660
		22 × 25	580
	100	18 × 35.5	750
		22 × 30	690
	120	18 × 40	830
		22 × 35	800
		25.4 × 30	810
	150	18 × 45	950
		22 × 40	940
		25.4 × 35	980
	180	22 × 45	1080
	200	25.4 × 40	1150
	220	22 × 50	1230
	270	25.4 × 50	1450

Vdc	Capacitance (μF)	ØD×L(㎜)	Rated Ripple Current (mArms/105℃, 120Hz)
450	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
	27	12.5 × 25	260
	33	12.5 × 30	335
		16 × 20	340
	39	10 × 45	353
	47	10 × 50	400
		12.5 × 40	405
		16 × 25	368
	68	18 × 25	500
		22 × 25	530
	82	12.5 × 50	670
		18 × 31.5	650
	100	12.5 × 60	750
		16 × 45	750
		18 × 35.5	750
		22 × 30	680
	120	16 × 50	800
		18 × 40	800
		22 × 35	790
		25.4 × 30	800
	150	18 × 45	920
		20 × 40	930
		22 × 40	950
		25.4 × 35	980
	180	22 × 45	1070
		22 × 50	1100
		25.4 × 40	1080
	200	22 × 50	1150
	220	25.4 × 50	1290
500	22	12.5 × 30	220
	27	10 × 50	305
	33	12.5 × 45	365
	39	12.5 × 50	425
	47	18 × 31.5	468
	56	22 × 25	470
	60	12.5 × 60	515
	68	16 × 45	585
		18 × 35.5	585
		22 × 30	550
	82	16 × 50	653
		18 × 35.5	640
		18 × 40	653
		25.4 × 30	640
	100	18 × 45	750
		20 × 40	800
		22 × 35	700
		22 × 40	730
	120	18 × 50	850
		22 × 45	900
		25.4 × 35	820
		25.4 × 40	860
	150	22 × 50	980
	180	25.4 × 50	1140

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