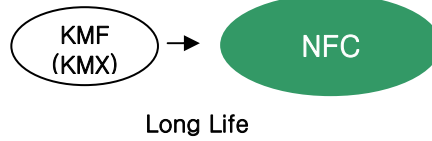


NFC Series

● 105°C 2,000~5,000Hrs assured.

- Non-solvent proof
- High ripple and long life
- For SMPS , IP-Board , Adaptor
- RoHS compliant.
- Halogen-free capacitors are also available.



SPECCIFICATIONS

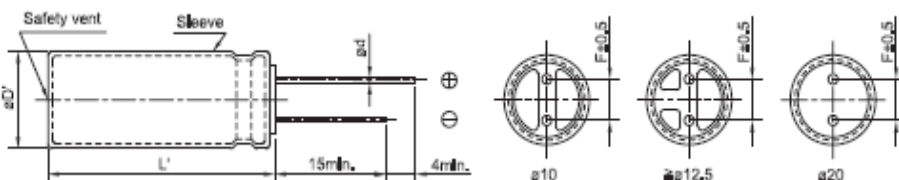
Item	Characteristics														
Rated Voltage Range	160 ~ 400 V _{DC}	450 ~ 500 V _{DC}													
Operating Temperature Range	-40 ~ +105 °C	-25 ~ +105 °C													
Capacitance Tolerance	±20% (M) (at 20 °C, 120Hz)														
Leakage Current	<table border="1"> <tr> <th>Time</th> <th>After 1 minute</th> <th>After 5 minute</th> </tr> <tr> <td>C-V</td> <td></td> <td></td> </tr> <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> </table>		Time	After 1 minute	After 5 minute	C-V			≤ 1000	I = 0.1CV + 40	I = 0.03CV + 15	> 1000	I = 0.04CV + 100	I = 0.02CV + 25	
	Time	After 1 minute	After 5 minute												
	C-V														
≤ 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 °C)															
Dissipation Factor (tan δ)	<table border="1"> <tr> <th>Rated Voltage(V_{DC})</th> <th>160 ~ 250</th> <th>350 ~ 500</th> </tr> <tr> <td>Tanδ(Max.)</td> <td>0.20</td> <td>0.24</td> </tr> </table>		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													
(at 20 °C, 120Hz)															
Temperature Characteristics (Capacitance change ratio)	<table border="1"> <tr> <th>Rated Voltage(V_{DC})</th> <th>160 ~ 250</th> <th>350 ~ 400</th> <th>450 ~ 500</th> </tr> <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> </table>			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	-												
(at 120Hz)															
Load Life	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 for 5,000 hours at 105 °C. (Where , 2,000 hours for 6.3Φ)														
	Capacitance change	≤ ±20 % of the initial value													
tan δ	≤ 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 °C after exposing them for 1,000 hours at 105 °C without voltage applied. The rated volage 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													
tan δ	≤ 200 % of the initial specified value														
Leakage current	≤ 500 % of the initial specified value														
Others	Satisfied characteristics KS C IEC 60384-4														

* Please refer each approval sheet for detail specification.

DIMENSIONS OF NFC Series

Unit (mm)

Marking : DARK BROWN SLEEVE , SILVER INK



φD	6.3	8	10	12.5	16	18	20	22
φd	0.5	0.6	0.6	0.6	0.8	0.8	0.8	0.8
F	2.5	3.5	5.0	5.0	7.5	7.5	7.5	10.0
φD'	φD + 0.5max.							
L'	L + 1.5max.				L + 2.0max.			

※ φ8x50L , L' ≤ L + 2.0



RATINGS OF NFC Series

V _{DC}		160		200	
Items μF	ØD × L(mm)	Rated ripple current (mArms/105 °C, 120Hz)		ØD × L(mm)	Rated ripple current (mArms/105 °C, 120Hz)
		3.3			
10				8 × 11.5	75
22	8 × 20		135	8 × 20	135
	10 × 20		192	10 × 20	192
33	10 × 20		236	12.5 × 20	262
47	12.5 × 20		312	12.5 × 20	312
68	10 × 20		320	12.5 × 25	409
	12.5 × 25		409	8 × 50	320
82	8 × 50		360	16 × 20	462
100	16 × 25		548	16 × 25	548
150	16 × 25		701	16 × 25	701
220	16 × 31.5		876	18 × 31.5	906
330	18 × 31.5		1,110		

V _{DC}		250		350	
Items μF	ØD × L(mm)	Rated ripple current (mArms/105 °C, 120Hz)		ØD × L(mm)	Rated ripple current (mArms/105 °C, 120Hz)
		6.8	8 × 11.5		
10	8 × 20		95	8 × 20	90
	10 × 20		130	10 × 20	126
22	10 × 20		193	12.5 × 20	207
	12.5 × 20		214		
33	12.5 × 25		285	8 × 50	245
		16 × 20		284	
47	8 × 50		250	16 × 25	364
	12.5 × 25		340		
68	16 × 25		452	16 × 31.5	472
100	16 × 31.5		591	18 × 31.5	591
150	18 × 31.5		748	18 × 40	760
220	18 × 40		936	22 × 45	970
330	20 × 40		1,196		

V _{DC}		400		420	
Items μF	ØD × L(mm)	Rated ripple current (mArms/105 °C, 120Hz)		ØD × L(mm)	Rated ripple current (mArms/105 °C, 120Hz)
		1	6.3 × 11		
3.3	8 × 11.5		42		
6.8	8 × 15		66		
8.2	8 × 20		80		
10	10 × 16		85		
22	12.5 × 25		225		
27	8 × 50		240		
33	16 × 20		284		
47	16 × 25		364		
68	16 × 31.5		472	18 × 31.5	500
82	18 × 31.5		536	18 × 31.5	560
100	18 × 35.5		611	18 × 35.5	720
120	18 × 40		680	18 × 40	740
150	18 × 40		760	18 × 45	753
180	12.5 × 50		800		
220	22 × 45		996		



RATINGS OF NFC Series

V_{DC}		450		500	
μF	Items	$\varnothing D \times L(mm)$	Rated ripple current (mA _{rms} /105°C, 120Hz)	$\varnothing D \times L(mm)$	Rated ripple current (mA _{rms} /105°C, 120Hz)
	1		6.3 × 11	12	
1.5		8 × 11.5	23		
2.2		8 × 15	38		
3.3		8 × 15	42		
4.7		8 × 20	62		
6.8		10 × 20	100	10 × 20	100
8.2		10 × 25	121		
10		12.5 × 20	135	12.5 × 20	135
15				12.5 × 25	182
22		8 × 50	230	12.5 × 30	210
27		16 × 25	267	10 × 50	253
33		16 × 31.5	319	18 × 25	308
				16 × 31.5	319
39				12.5 × 50	358
40				12.5 × 50	360
47		10 × 50	334	18 × 31.5	393
		18 × 25	368		
56				12.5 × 60	440
60				12.5 × 60	455
68		12.5 × 42.5	476	18 × 35.5	489
		18 × 31.5	500		
82		12.5 × 50	473	18 × 40	544
		18 × 31.5	560		
100		12.5 × 60	569	18 × 45	620
		18 × 35.5	720	20 × 40	618
120		18 × 40	740	22 × 45	702
150		18 × 45	753	22 × 50	827
		20 × 40	757		
180		22 × 50	910		

RATED RIPPLE CURRENT MULTIPLIERS

Frequency Multipliers

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