

## NFC Series

• 105°C 2,000~5,000Hrs 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 <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 \ 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>&gt; 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<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 5,000 hours at 105°C. (where, 2,000 hours for Ø6.3)</p> <p>Capacitance change ≤ ±20% of the initial value<br/>                     Tanδ ≤ 200% of the initial specified value<br/>                     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<br/>                     Tanδ ≤ 200% of the initial specified value<br/>                     Leakage current ≤ 500% of the initial specified value</p> |                           |                                 |                |                 |            |                   |                 |        |                  |                   |   |   |   |
| Others   | Satisfied characteristics KS C IEC 60384-4   |                           |                                 |                |                 |            |                   |                 |        |                  |                   |   |   |   |

## DIMENSIONS OF NFC Series

Unit(mm)

Marking : DARK BROWN SLEEVE, SILVER INK

|     | 6.3           | 8   | 10           | 12.5 | 16  | 18  | 20  | 22   |
|-----|---------------|-----|--------------|------|-----|-----|-----|------|
| øD  | 6.3           | 8   | 10           | 12.5 | 16  | 18  | 20  | 22   |
| ød  | 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 |
| øD' | øD + 0.5 max. |     |              |      |     |     |     |      |
| L'  | L + 1.5 max.  |     | L + 2.0 max. |      |     |     |     |      |

※ Ø8 x 50L, L' ≤ L+2.0

## RATINGS OF NFC Series

| V <sub>dc</sub> | 160       |   | 200       |   |
|-----------------|-----------|---|-----------|---|
| Items<br>μF     | ∅ D×L(mm) | Rated Ripple Current<br>(mArms/105°C,120Hz) | ∅ D×L(mm) | Rated Ripple Current<br>(mArms/105°C,120Hz) |
| 3.3             |           |   | 6.3×11    | 36  |
| 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     | 380   | 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 <sub>dc</sub> | 250       |   | 350       |   |
|-----------------|-----------|---|-----------|---|
| Items<br>μF     | ∅ D×L(mm) | Rated Ripple Current<br>(mArms/105°C,120Hz) | ∅ D×L(mm) | Rated Ripple Current<br>(mArms/105°C,120Hz) |
| 6.8             | 8×11.5    | 70  | 8×15      | 65  |
| 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             | 18×35.5   | 936   | 22×45     | 970   |
| 330             | 20×40     | 1,196                                       |           |   |

| V <sub>dc</sub> | 400       |   | 420       |   |
|-----------------|-----------|---|-----------|---|
| Items<br>μF     | ∅ D×L(mm) | Rated Ripple Current<br>(mArms/105°C,120Hz) | ∅ D×L(mm) | Rated Ripple Current<br>(mArms/105°C,120Hz) |
| 1               | 6.3×11    | 19  |           |   |
| 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             | 20×40     | 855   |           |   |
| 220             | 22×45     | 996   |           |   |

**RATINGS OF NFC Series**

| V <sub>dc</sub><br>μF | 450                   |  | 500          |  |
|-----------------------|-----------------------|--|--------------|--|
|                       | Items<br>∅ D × L (mm) | Rated Ripple Current<br>(mArms/105°C, 120Hz) | ∅ D × L (mm) | Rated Ripple Current<br>(mArms/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      | 594  |
|                       | 18 × 31.5             | 594  |              |  |
| 100                   | 12.5 × 60             | 630  | 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 |

## X-ON Electronics

Largest Supplier of Electrical and Electronic Components

*Click to view similar products for [Aluminium Electrolytic Capacitors - Radial Leaded](#) category:*

*Click to view products by [SamYoung](#) manufacturer:*

Other Similar products are found below :

[LXY50VB4.7M-5X11](#) [RFO-100V471MJ7P#](#) [ECE-A1EGE220](#) [B41041A2687M8](#) [B41041A7226M8](#) [B41044A7157M6](#)  
[EKXG201EC3101ML20S](#) [EKZM160ETD471MHB5D](#) [NCD681K10KVY5PF](#) [NEV1000M25EF-BULK](#) [NEV100M35DC](#) [NEV100M63DE](#)  
[NEV220M25DD-BULK](#) [NEV.33M100AA](#) [NEV4700M50HB](#) [NEV.47M100AA](#) [NEVH1.0M250AB](#) [NEVH3.3M250BB](#) [NEVH3.3M450CC](#)  
[KM4700/16](#) [KME50VB100M-8X11.5](#) [SG220M1CSA-0407](#) [ES5107M016AE1DA](#) [ESMG160ETD102MJ16S](#) [ESX472M16B](#)  
[SZ010M1500A5S-1015](#) [227RZS050M](#) [476CKH100MSA](#) [477RZS050M](#) [UVX1V101KPA1FA](#) [UVX1V222MHA1CA](#) [KME25VB100M-](#)  
[6.3X11](#) [VTL100S10](#) [VTL470S10](#) [VTL470S16A](#) [511D336M250EK5D](#) [052687X](#) [ECE-A1CF471](#) [EKMA500ELL4R7ME07D](#) [NRE-](#)  
[S560M16V6.3X7TBSTF](#) [RGA221M1CTA-0611G](#) [ERZA630VHN182UP54N](#) [UPL1A331MPH](#) [SK035M0100AZS-0611](#) [NEV1000M6.3DE](#)  
[NEV100M16CB](#) [NEV100M50DD-BULK](#) [NEV2200M16FF](#) [NEV220M50EE](#) [NEV2.2M50AA](#)