

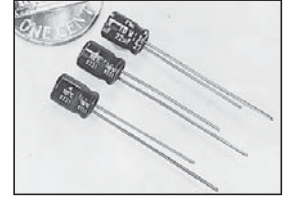
SUPER-MINIATURE, RADIAL LEADS, POLARIZED

### FEATURES

- HIGH PERFORMANCE IN LOW PROFILE (7mm) HEIGHT
- GOOD 100KHz PERFORMANCE CHARACTERISTICS
- WIDE TEMPERATURE -55 TO + 105°C

**RoHS Compliant**  
includes all homogeneous materials

\*See Part Number System for Details



### CHARACTERISTICS

|                                                   |                                   |                                       |      |      |      |      |      |
|---------------------------------------------------|-----------------------------------|---------------------------------------|------|------|------|------|------|
| Rated Voltage Range                               | 6.3 ~ 50VDC                       |                                       |      |      |      |      |      |
| Capacitance Range                                 | 1.0 ~ 330μF                       |                                       |      |      |      |      |      |
| Operating Temperature Range                       | -55°C ~ +105°C                    |                                       |      |      |      |      |      |
| Capacitance Tolerance                             | ±20% (M)                          |                                       |      |      |      |      |      |
| Maximum Leakage Current After 1 minutes           | .01CV or 3μA whichever is greater |                                       |      |      |      |      |      |
| Max. Tan δ at 120Hz/20°C                          | W.V. (Vdc)                        | 6.3                                   | 10   | 16   | 25   | 35   | 50   |
|                                                   | S.V. (Vdc)                        | 8                                     | 13   | 20   | 32   | 44   | 63   |
|                                                   | Tan δ at 120Hz                    | 0.24                                  | 0.21 | 0.18 | 0.14 | 0.12 | 0.10 |
| Low Temperature Stability Impedance Ratio @ 120Hz | Z-40°C/Z+20°C                     | 4                                     | 3    | 2    | 2    | 2    | 2    |
|                                                   | Z-55°C/Z+20°C                     | 6                                     | 5    | 4    | 3    | 3    | 3    |
| Load Life Test 1,000 @ 105°C                      | Δ Capacitance                     | Within ±25% of initial measured value |      |      |      |      |      |
|                                                   | Δ Tan δ                           | Less than 200% of specified value     |      |      |      |      |      |
|                                                   | Δ LC                              | Less than specified value             |      |      |      |      |      |

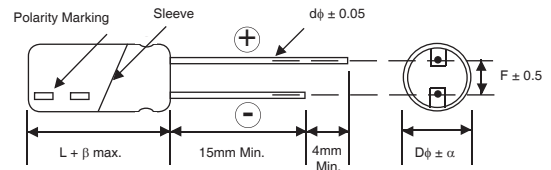
### STANDARD PRODUCT AND CASE SIZE TABLE DφxL (mm)

| Cap. (μF) | Code | Working Voltage (Vdc) |       |       |       |       |       |
|-----------|------|-----------------------|-------|-------|-------|-------|-------|
|           |      | 6.3                   | 10    | 16    | 25    | 35    | 50    |
| 1.0       | 1R0  | -                     | -     | -     | -     | -     | 4x7   |
| 2.2       | 2R2  | -                     | -     | -     | -     | -     | 4x7   |
| 3.3       | 3R3  | -                     | -     | -     | -     | -     | 4x7   |
| 4.7       | 4R7  | -                     | -     | -     | 4x7   | 4x7   | 5x7   |
| 10        | 100  | -                     | -     | 4x7   | 5x7   | 5x7   | 6.3x7 |
| 22        | 220  | 4x7                   | 5x7   | 5x7   | 6.3x7 | 6.3x7 | 6.3x7 |
| 33        | 330  | 5x7                   | 5x7   | 6.3x7 | 6.3x7 | 6.3x7 | 6.3x7 |
| 47        | 470  | 5x7                   | 6.3x7 | 6.3x7 | 6.3x7 | 6.3x7 | 6.3x7 |
| 100       | 101  | 6.3x7                 | 6.3x7 | 6.3x7 | 6.3x7 | 6.3x7 | -     |
| 220       | 221  | 6.3x7                 | 6.3x7 | 6.3x7 | -     | -     | -     |
| 330       | 331  | 6.3x7                 | -     | -     | -     | -     | -     |

### LEAD SPACING & DIAMETER (mm)

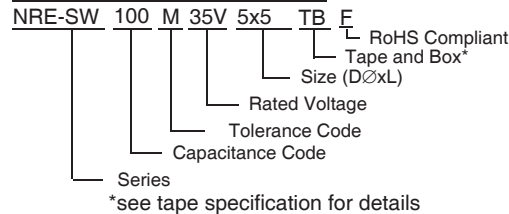
|                  |      |      |      |
|------------------|------|------|------|
| Case Dia. (Dφ)   | 4    | 5    | 6.3  |
| Lead Dia. (dφ)   | 0.45 | 0.45 | 0.45 |
| Lead Spacing (F) | 1.5  | 2.0  | 2.5  |
| Dim. α           | 0.5  |      |      |
| Dim. β           | 1.0  |      |      |

### DIMENSIONS (mm)



Drawing is representative of parts as supplied in bulk or straight lead format, please see taping specification for details on taped format packaging.

### PART NUMBER SYSTEM



### PRECAUTIONS

Please review the notes on correct use, safety and precautions found on pages T10 & T11 of NIC's Electrolytic Capacitor catalog.  
Also found at [www.niccomp.com/precautions](http://www.niccomp.com/precautions)  
If in doubt or uncertainty, please review your specific application - process details with NIC's technical support personnel: [tpmg@niccomp.com](mailto:tpmg@niccomp.com)



### STANDARD VALUES, SPECIFICATIONS AND CASE SIZES (mm)

| Part Number          | Cap. (μF) | W.V. (Vdc) | Dissipation Factor +20°C/120Hz | Ripple Current Rating (mA) +105°C/100KHz | Max. ESR (Ω) +20°C/100KHz | Load Life Hours @+105°C |
|----------------------|-----------|------------|--------------------------------|------------------------------------------|---------------------------|-------------------------|
| NRE-SW220M6.3V4x7F   | 22        | 6.3        | 0.24                           | 50                                       | 4.2                       | 1,000                   |
| NRE-SW330M6.3V5x7F   | 33        |            | 0.24                           | 85                                       | 2.0                       | 1,000                   |
| NRE-SW470M6.3V5x7F   | 47        |            | 0.24                           | 85                                       | 2.0                       | 1,000                   |
| NRE-SW101M6.3V6.3x7F | 100       |            | 0.24                           | 120                                      | 1.2                       | 1,000                   |
| NRE-SW221M6.3V6.3x7F | 220       |            | 0.24                           | 120                                      | 1.2                       | 1,000                   |
| NRE-SW331M6.3V6.3x7F | 330       |            | 0.24                           | 120                                      | 1.2                       | 1,000                   |
| NRE-SW220M10V5x7F    | 22        | 10         | 0.21                           | 85                                       | 4.2                       | 1,000                   |
| NRE-SW330M10V5x7F    | 33        |            | 0.21                           | 85                                       | 2.0                       | 1,000                   |
| NRE-SW470M10V6.3x7F  | 47        |            | 0.21                           | 120                                      | 1.2                       | 1,000                   |
| NRE-SW101M10V6.3x7F  | 100       |            | 0.21                           | 120                                      | 1.2                       | 1,000                   |
| NRE-SW221M10V6.3x7F  | 220       |            | 0.21                           | 120                                      | 1.2                       | 1,000                   |
| NRE-SW100M16V4x7F    | 10        | 16         | 0.18                           | 50                                       | 4.2                       | 1,000                   |
| NRE-SW220M16V5x7F    | 22        |            | 0.18                           | 85                                       | 2.0                       | 1,000                   |
| NRE-SW330M16V6.3x7F  | 33        |            | 0.18                           | 120                                      | 1.2                       | 1,000                   |
| NRE-SW470M16V6.3x7F  | 47        |            | 0.18                           | 120                                      | 1.2                       | 1,000                   |
| NRE-SW101M16V6.3x7F  | 100       |            | 0.18                           | 120                                      | 1.2                       | 1,000                   |
| NRE-SW221M16V6.3x7F  | 220       |            | 0.18                           | 120                                      | 1.2                       | 1,000                   |
| NRE-SW4R7M25V4x7F    | 4.7       | 25         | 0.14                           | 50                                       | 4.2                       | 1,000                   |
| NRE-SW100M25V5x7F    | 10        |            | 0.14                           | 85                                       | 2.0                       | 1,000                   |
| NRE-SW220M25V6.3x7F  | 22        |            | 0.14                           | 120                                      | 1.2                       | 1,000                   |
| NRE-SW330M25V6.3x7F  | 33        |            | 0.14                           | 120                                      | 1.2                       | 1,000                   |
| NRE-SW470M25V6.3x7F  | 47        |            | 0.14                           | 120                                      | 1.2                       | 1,000                   |
| NRE-SW101M25V6.3x7F  | 100       |            | 0.14                           | 120                                      | 1.5                       | 1,000                   |
| NRE-SW4R7M35V4x7F    | 4.7       | 35         | 0.12                           | 40                                       | 6.0                       | 1,000                   |
| NRE-SW100M35V5x7F    | 10        |            | 0.12                           | 70                                       | 3.1                       | 1,000                   |
| NRE-SW220M35V6.3x7F  | 22        |            | 0.12                           | 100                                      | 1.6                       | 1,000                   |
| NRE-SW330M35V6.3x7F  | 33        |            | 0.12                           | 100                                      | 1.6                       | 1,000                   |
| NRE-SW470M35V6.3x7F  | 47        |            | 0.12                           | 100                                      | 1.6                       | 1,000                   |
| NRE-SW101M35V6.3x7F  | 100       |            | 0.12                           | 100                                      | 1.6                       | 1,000                   |
| NRE-SW1R0M50V4x7F    | 1.0       | 50         | 0.10                           | 30                                       | 10.0                      | 1,000                   |
| NRE-SW2R2M50V4x7F    | 2.2       |            | 0.10                           | 35                                       | 7.8                       | 1,000                   |
| NRE-SW3R3M50V4x7F    | 3.3       |            | 0.10                           | 40                                       | 6.2                       | 1,000                   |
| NRE-SW4R7M50V5x7F    | 4.7       |            | 0.10                           | 70                                       | 3.1                       | 1,000                   |
| NRE-SW100M50V6.3x7F  | 10        |            | 0.10                           | 100                                      | 1.6                       | 1,000                   |
| NRE-SW220M50V6.3x7F  | 22        |            | 0.10                           | 100                                      | 1.6                       | 1,000                   |
| NRE-SW330M50V6.3x7F  | 33        |            | 0.10                           | 100                                      | 1.6                       | 1,000                   |
| NRE-SW470M50V6.3x7F  | 47        |            | 0.10                           | 100                                      | 1.6                       | 1,000                   |

### RIPPLE CURRENT CORRECTION FACTORS

| Frequency (Hz) | 120  | 1K   | 10K  | ≤100K |
|----------------|------|------|------|-------|
| 4x7            | 0.50 | 0.70 | 0.93 | 1.00  |
| 5x7            | 0.60 | 0.80 | 0.93 | 1.00  |
| 6.3x7          | 0.70 | 0.85 | 0.93 | 1.00  |