

# Surface Mount Aluminum Electrolytic Capacitors NACE Series

## FEATURES

- CYLINDRICAL V-CHIP CONSTRUCTION
- LOW COST, GENERAL PURPOSE, 2000 HOURS AT 85°C
- NEW EXPANDED CV RANGE (up to 6800µF)
- ANTI-SOLVENT (2 MINUTES)
- DESIGNED FOR AUTOMATIC MOUNTING AND REFLOW SOLDERING



**RoHS  
Compliant**

includes all homogeneous materials

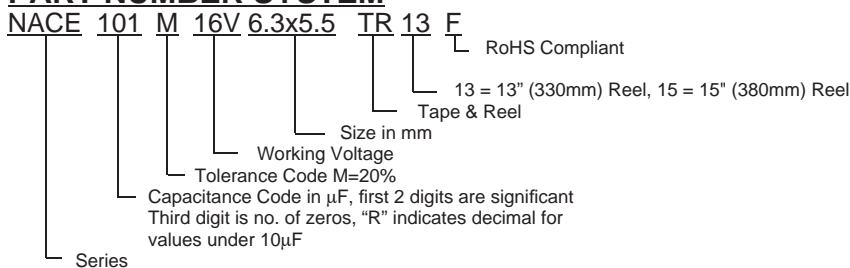
\*See Part Number System for Details

## CHARACTERISTICS

|   |                                    |
|---|------------------------------------|
| Rated Voltage Range                         | 4.0 ~ 100Vdc                       |
| Rate Capacitance Range                      | 0.1 ~ 6,800µF                      |
| Operating Temp. Range                       | -40°C ~ +85°C                      |
| Capacitance Tolerance                       | ±20% (M)                           |
| Max. Leakage Current After 2 Minutes @ 20°C | 0.01CV or 3µA whichever is greater |

|   |                    |  |      |      |      |      |      |      |      |      |      |
|---|--------------------|--|------|------|------|------|------|------|------|------|------|
| Tan δ @ 120Hz/20°C                                | W.V. (Vdc)         | 4.0                                    | 6.3  | 10   | 16   | 25   | 35   | 50   | 63   | 100  |      |
|   | 3mm Dia.           | 0.40                                   | 0.30 | -    | 0.19 | 0.16 | 0.14 | 0.14 | -    | -    |      |
|   | 4 ~ 6.3mm Dia.     | 0.35                                   | 0.26 | 0.20 | 0.16 | 0.14 | 0.12 | 0.10 | 0.10 | 0.10 |      |
|   | 8x6.5mm Dia.       | -                                      | 0.25 | 0.26 | 0.20 | 0.16 | 0.14 | 0.12 | -    | 0.10 |      |
|   | 8mm Dia. ~ up      | C<1000µF                               | 0.40 | 0.30 | 0.24 | 0.20 | 0.16 | 0.14 | 0.12 | 0.12 | 0.10 |
|   |                    | C<1500µF                               | -    | 0.30 | -    | 0.20 | -    | 0.14 | -    | -    | -    |
|   |                    | C<2200µF                               | -    | -    | 0.26 | -    | 0.18 | -    | -    | -    | -    |
| C<3300µF  |                    | -                                      | 0.34 | -    | 0.24 | -    | -    | -    | -    | -    |      |
| C<4700µF  |                    | -                                      | -    | 0.30 | -    | -    | -    | -    | -    | -    |      |
|   | C<6800µF           | -                                      | 0.40 | -    | -    | -    | -    | -    | -    | -    |      |
| Low Temperature Stability Impedance Ratio @ 120Hz | W.V. (Vdc)         | 4.0                                    | 6.3  | 10   | 16   | 25   | 35   | 50   | 63   | 100  |      |
|   | Z-25°C/Z+20°C      | 7                                      | 4    | 3    | 2    | 2    | 2    | 2    | 2    | 2    |      |
|   | Z-40°C/Z+20°C      | 15                                     | 8    | 6    | 4    | 4    | 3    | 3    | 3    | 3    |      |
| Load Life Test 85°C 2,000 Hours                   | Capacitance Change | Within ± 25% of initial measured value |      |      |      |      |      |      |      |      |      |
|   | Tan δ              | Less than 200% of specified max. value |      |      |      |      |      |      |      |      |      |
|   | Leakage Current    | Less than specified max. value         |      |      |      |      |      |      |      |      |      |

## 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)



# Surface Mount Aluminum Electrolytic Capacitors NACE Series

## STANDARD PRODUCTS, SPECIFICATIONS AND CASE SIZE TABLE D $\phi$ xL (mm)

| NIC Part Number          | Cap. ( $\mu$ F) | W.V. (Vdc) | Dissipation Factor (Tan $\delta$ ) | Max. Ripple current (mA) @ +85°C/120Hz | Max. ESR ( $\Omega$ ) @ +20°C/120Hz | Load Life Hours @ +85°C |       |
|--------------------------|-----------------|------------|------------------------------------|--|-------------------------------------|-------------------------|-------|
| NACE220M4V3X5.5TR13F     | 22              | 4          | 0.40                               | 19                                     | 30.1                                | 2,000                   |       |
| NACE330M4V4X5.5TR13F     | 33              |            | 0.35                               | 26                                     | 17.6                                | 2,000                   |       |
| NACE470M4V4X5.5TR13F     | 47              |            | 0.35                               | 34                                     | 12.4                                | 2,000                   |       |
| NACE680M4V5X5.5TR13F     | 68              |            | 0.35                               | 52                                     | 8.54                                | 2,000                   |       |
| NACE101M4V5X5.5TR13F     | 100             |            | 0.35                               | 61                                     | 5.80                                | 2,000                   |       |
| NACE151M4V6.3X5.5TR13F   | 150             |            | 0.35                               | 74                                     | 3.87                                | 2,000                   |       |
| NACE221M4V6.3X5.5TR13F   | 220             |            | 0.35                               | 82                                     | 2.64                                | 2,000                   |       |
| NACE331M4V6.3X6.3TR13F   | 330             |            | 0.35                               | 102                                    | 1.76                                | 2,000                   |       |
| NACE471M4V6.3X8TR13F     | 470             |            | 0.35                               | 150                                    | 1.42                                | 2,000                   |       |
| NACE102M4V10X8TR13F      | 1000            |            | 0.40                               | 330                                    | 0.67                                | 2,000                   |       |
| NACE150M6.3V3X5.5TR13F   | 15              | 6.3        | 0.30                               | 16                                     | 33.1                                | 2,000                   |       |
| NACE220M6.3V3X5.5TR13F   | 22              |            | 0.30                               | 21                                     | 26.5                                | 2,000                   |       |
| NACE220M6.3V4X5.5TR13F   | 22              |            | 0.26                               | 31                                     | 18.1                                | 2,000                   |       |
| NACE330M6.3V5X5.5TR13F   | 33              |            | 0.26                               | 39                                     | 12.6                                | 2,000                   |       |
| NACE470M6.3V5X5.5TR13F   | 47              |            | 0.26                               | 47                                     | 8.47                                | 2,000                   |       |
| NACE680M6.3V6.3X5.5TR13F | 68              |            | 0.26                               | 63                                     | 5.86                                | 2,000                   |       |
| NACE101M6.3V6.3X5.5TR13F | 100             |            | 0.26                               | 71                                     | 3.98                                | 2,000                   |       |
| NACE151M6.3V6.3X5.5TR13F | 150             |            | 0.26                               | 78                                     | 2.66                                | 2,000                   |       |
| NACE221M6.3V6.3X6.3TR13F | 220             |            | 0.26                               | 95                                     | 1.96                                | 2,000                   |       |
| NACE331M6.3V6.3X8TR13F   | 330             |            | 0.26                               | 150                                    | 1.31                                | 2,000                   |       |
| NACE331M6.3V8X6.5TR13F   | 330             |            | 0.25                               | 300                                    | 1.76                                | 2,000                   |       |
| NACE471M6.3V8X10.5TR13F  | 470             |            | 0.30                               | 300                                    | 1.06                                | 2,000                   |       |
| NACE681M6.3V10X8TR13F    | 680             |            | 0.30                               | 300                                    | 0.59                                | 2,000                   |       |
| NACE102M6.3V8X10.5TR13F  | 1000            |            | 0.30                               | 330                                    | 0.50                                | 2,000                   |       |
| NACE152M6.3V10X10.5TR13F | 1500            |            | 0.30                               | 450                                    | 0.35                                | 2,000                   |       |
| NACE332M6.3V12.5X14TR15F | 3300            |            | 0.34                               | 750                                    | 0.17                                | 2,000                   |       |
| NACE682M6.3V16X17TR15F   | 6800            |            | 0.40                               | 1330                                   | 0.10                                | 2,000                   |       |
| NACE220M10V5X5.5TR13F    | 22              |            | 10                                 | 0.20                                   | 35                                  | 15.1                    | 2,000 |
| NACE330M10V5X5.5TR13F    | 33              |            |                                    | 0.20                                   | 43                                  | 10.1                    | 2,000 |
| NACE470M10V6.3X5.5TR13F  | 47              |            |                                    | 0.20                                   | 59                                  | 7.06                    | 2,000 |
| NACE680M10V6.3X5.5TR13F  | 68              | 0.20       |                                    | 66                                     | 4.88                                | 2,000                   |       |
| NACE101M10V6.3X5.5TR13F  | 100             | 0.20       |                                    | 76                                     | 3.32                                | 2,000                   |       |
| NACE151M10V6.3X6.3TR13F  | 150             | 0.20       |                                    | 88                                     | 2.21                                | 2,000                   |       |
| NACE221M10V6.3X8TR13F    | 220             | 0.20       |                                    | 150                                    | 1.51                                | 2,000                   |       |
| NACE221M10V8X6.5TR13F    | 220             | 0.26       |                                    | 250                                    | 1.99                                | 2,000                   |       |
| NACE331M10V8X10.5TR13F   | 330             | 0.24       |                                    | 280                                    | 1.21                                | 2,000                   |       |
| NACE471M10V8X10.5TR13F   | 470             | 0.24       |                                    | 300                                    | 0.85                                | 2,000                   |       |
| NACE471M10V10X8TR13F     | 470             | 0.24       |                                    | 300                                    | 0.85                                | 2,000                   |       |
| NACE102M10V10X10.5TR13F  | 1000            | 0.24       |                                    | 450                                    | 0.40                                | 2,000                   |       |
| NACE222M10V12.5X14TR15F  | 2200            | 0.26       |                                    | 730                                    | 0.24                                | 2,000                   |       |
| NACE472M10V16X17TR15F    | 4700            | 0.30       |                                    | 1200                                   | 0.13                                | 2,000                   |       |
| NACE100M16V3X5.5TR13F    | 10              | 16         |                                    | 0.19                                   | 20                                  | 26.5                    | 2,000 |
| NACE100M16V4X5.5TR13F    | 10              |            |                                    | 0.16                                   | 25                                  | 26.5                    | 2,000 |
| NACE220M16V5X5.5TR13F    | 22              |            |                                    | 0.16                                   | 39                                  | 12.1                    | 2,000 |
| NACE330M16V6.3X5.5TR13F  | 33              |            |                                    | 0.16                                   | 57                                  | 8.04                    | 2,000 |
| NACE470M16V6.3X5.5TR13F  | 47              |            | 0.16                               | 68                                     | 5.65                                | 2,000                   |       |
| NACE680M16V6.3X5.5TR13F  | 68              |            | 0.16                               | 75                                     | 3.91                                | 2,000                   |       |
| NACE101M16V6.3X5.5TR13F  | 100             |            | 0.16                               | 86                                     | 2.66                                | 2,000                   |       |
| NACE101M16V8X6.5TR13F    | 100             |            | 0.20                               | 200                                    | 3.32                                | 2,000                   |       |
| NACE151M16V6.3X8TR13F    | 150             |            | 0.16                               | 135                                    | 1.77                                | 2,000                   |       |
| NACE221M16V6.3X8TR13F    | 220             |            | 0.16                               | 150                                    | 1.21                                | 2,000                   |       |
| NACE331M16V8X10.5TR13F   | 330             |            | 0.20                               | 280                                    | 1.01                                | 2,000                   |       |
| NACE331M16V10X8TR13F     | 330             |            | 0.20                               | 280                                    | 1.01                                | 2,000                   |       |
| NACE471M16V8X10.5TR13F   | 470             |            | 0.20                               | 330                                    | 0.71                                | 2,000                   |       |
| NACE681M16V10X10.5TR13F  | 680             |            | 0.20                               | 450                                    | 0.49                                | 2,000                   |       |
| NACE152M16V12.5X14TR15F  | 1500            |            | 0.20                               | 710                                    | 0.24                                | 2,000                   |       |
| NACE332M16V16X17TR15F    | 3300            |            | 0.24                               | 1200                                   | 0.12                                | 2,000                   |       |

### RIPPLE CURRENT FREQUENCY CORRECTION FACTOR

| Frequency Hz                    | 100<f $\leq$ 1K | 1K<f $\leq$ 10K | 10K< f $\leq$ 100K | f $\geq$ 100K |
|---------------------------------|-----------------|-----------------|--------------------|---------------|
| C $\leq$ 4.7 $\mu$ F            | 1.0             | 1.3             | 1.5                | 2.0           |
| 4.7 $\mu$ F<C $\leq$ 33 $\mu$ F | 1.0             | 1.2             | 1.3                | 1.45          |
| C>33 $\mu$ F                    | 1.0             | 1.1             | 1.2                | 1.3           |



# Surface Mount Aluminum Electrolytic Capacitors NACE Series

## STANDARD PRODUCTS, SPECIFICATIONS AND CASE SIZE TABLE DφxL (mm)

| NIC Part Number         | Cap. (μF) | W.V. (Vdc) | Dissipation Factor (Tan δ) | Max. Ripple current (mA) @ +85°C/120Hz | Max. ESR (Ω) @ +20°C/120Hz | Load Life Hours @ +85°C |
|-------------------------|-----------|------------|----------------------------|--|----------------------------|-------------------------|
| NACE4R7M25V3X5.5TR13F   | 4.7       | 25         | 0.16                       | 12                                     | 56.5                       | 2,000                   |
| NACE4R7M25V4X5.5TR13F   | 4.7       |            | 0.14                       | 19                                     | 49.4                       | 2,000                   |
| NACE100M25V5X5.5TR13F   | 10        |            | 0.14                       | 28                                     | 23.2                       | 2,000                   |
| NACE220M25V6.3X5.5TR13F | 22        |            | 0.14                       | 52                                     | 10.6                       | 2,000                   |
| NACE330M25V6.3X5.5TR13F | 33        |            | 0.14                       | 63                                     | 7.04                       | 2,000                   |
| NACE470M25V6.3X6.3TR13F | 47        |            | 0.14                       | 68                                     | 4.94                       | 2,000                   |
| NACE680M25V6.3X6.3TR13F | 68        |            | 0.14                       | 80                                     | 3.41                       | 2,000                   |
| NACE101M25V6.3X8TR13F   | 100       |            | 0.14                       | 91                                     | 2.32                       | 2,000                   |
| NACE101M25V8X6.5TR13F   | 100       |            | 0.16                       | 130                                    | 2.65                       | 2,000                   |
| NACE151M25V8X10.5TR13F  | 150       |            | 0.16                       | 200                                    | 1.77                       | 2,000                   |
| NACE221M25V8X10.5TR13F  | 220       |            | 0.16                       | 250                                    | 1.21                       | 2,000                   |
| NACE221M25V10X8TR13F    | 220       |            | 0.16                       | 250                                    | 1.21                       | 2,000                   |
| NACE331M25V8X10.5TR13F  | 330       |            | 0.16                       | 310                                    | 0.80                       | 2,000                   |
| NACE471M25V10X10.5TR13F | 470       |            | 0.16                       | 430                                    | 0.56                       | 2,000                   |
| NACE102M25V12.5X14TR15F | 1000      |            | 0.16                       | 660                                    | 0.27                       | 2,000                   |
| NACE222M25V16X17TR15F   | 2200      |            | 0.18                       | 1150                                   | 0.14                       | 2,000                   |
| NACE2R2M35V3X5.5TR13F   | 2.2       |            | 35                         | 0.14                                   | 8.0                        | 90.4                    |
| NACE3R3M35V3X5.5TR13F   | 3.3       | 0.14       |                            | 10                                     | 60.3                       | 2,000                   |
| NACE4R7M35V4X5.5TR13F   | 4.7       | 0.12       |                            | 20                                     | 42.3                       | 2,000                   |
| NACE100M35V5X5.5TR13F   | 10        | 0.12       |                            | 30                                     | 19.9                       | 2,000                   |
| NACE220M35V6.3X5.5TR13F | 22        | 0.12       |                            | 54                                     | 9.05                       | 2,000                   |
| NACE330M35V6.3X6.3TR13F | 33        | 0.12       |                            | 60                                     | 6.04                       | 2,000                   |
| NACE330M35V8X6.5TR13F   | 33        | 0.14       |                            | 130                                    | 7.04                       | 2,000                   |
| NACE470M35V6.3X6.3TR13F | 47        | 0.12       |                            | 70                                     | 4.24                       | 2,000                   |
| NACE470M35V8X6.5TR13F   | 47        | 0.14       |                            | 165                                    | 4.95                       | 2,000                   |
| NACE680M35V6.3X8TR13F   | 68        | 0.12       |                            | 110                                    | 2.93                       | 2,000                   |
| NACE101M35V6.3X8TR13F   | 100       | 0.12       |                            | 130                                    | 1.99                       | 2,000                   |
| NACE151M35V8X10.5TR13F  | 150       | 0.14       |                            | 220                                    | 1.33                       | 2,000                   |
| NACE151M35V10X8TR13F    | 150       | 0.14       |                            | 220                                    | 1.33                       | 2,000                   |
| NACE221M35V8X10.5TR13F  | 220       | 0.14       |                            | 270                                    | 1.06                       | 2,000                   |
| NACE331M35V10X10.5TR13F | 330       | 0.14       |                            | 340                                    | 0.71                       | 2,000                   |
| NACE471M35V12.5X14TR15F | 470       | 0.14       |                            | 590                                    | 0.49                       | 2,000                   |
| NACE681M35V12.5X14TR15F | 680       | 0.14       |                            | 610                                    | 0.34                       | 2,000                   |
| NACE152M35V16X17TR15F   | 1500      | 0.14       | 1060                       | 0.17                                   | 2,000                      |                         |
| NACER10M50V3X5.5TR13F   | 0.1       | 50         | 0.14                       | 1.0                                    | 1660                       | 2,000                   |
| NACER10M50V4X5.5TR13F   | 0.1       |            | 0.10                       | 1.0                                    | 1660                       | 2,000                   |
| NACER22M50V3X5.5TR13F   | 0.22      |            | 0.14                       | 2.3                                    | 1660                       | 2,000                   |
| NACER22M50V4X5.5TR13F   | 0.22      |            | 0.10                       | 2.3                                    | 754                        | 2,000                   |
| NACER33M50V3X5.5TR13F   | 0.33      |            | 0.14                       | 3.5                                    | 503                        | 2,000                   |
| NACER33M50V4X5.5TR13F   | 0.33      |            | 0.10                       | 3.5                                    | 503                        | 2,000                   |
| NACER47M50V3X5.5TR13F   | 0.47      |            | 0.14                       | 4.0                                    | 353                        | 2,000                   |
| NACER47M50V4X5.5TR13F   | 0.47      |            | 0.10                       | 5.5                                    | 353                        | 2,000                   |
| NACE1R0M50V3X5.5TR13F   | 1.0       |            | 0.14                       | 8.0                                    | 166                        | 2,000                   |
| NACE1R0M50V4X5.5TR13F   | 1.0       |            | 0.10                       | 10                                     | 166                        | 2,000                   |
| NACE2R2M50V4X5.5TR13F   | 2.2       |            | 0.10                       | 15                                     | 75.4                       | 2,000                   |
| NACE3R3M50V4X5.5TR13F   | 3.3       |            | 0.10                       | 15                                     | 50.3                       | 2,000                   |
| NACE4R7M50V5X5.5TR13F   | 4.7       |            | 0.10                       | 23                                     | 35.3                       | 2,000                   |
| NACE100M50V6.3X5.5TR13F | 10        |            | 0.10                       | 34                                     | 16.6                       | 2,000                   |
| NACE220M50V6.3X6.3TR13F | 22        |            | 0.10                       | 58                                     | 7.54                       | 2,000                   |
| NACE220M50V8X6.5TR13F   | 22        |            | 0.12                       | 120                                    | 9.05                       | 2,000                   |
| NACE330M50V6.3X8TR13F   | 33        |            | 0.10                       | 65                                     | 5.03                       | 2,000                   |
| NACE330M50V8X6.5TR13F   | 33        | 0.12       | 85                         | 6.04                                   | 2,000                      |                         |
| NACE470M50V6.3X8TR13F   | 47        | 0.10       | 90                         | 3.53                                   | 2,000                      |                         |
| NACE680M50V8X10.5TR13F  | 68        | 0.12       | 120                        | 2.44                                   | 2,000                      |                         |
| NACE820M50V10X8TR13F    | 82        | 0.12       | 200                        | 2.44                                   | 2,000                      |                         |
| NACE101M50V8X10.5TR13F  | 100       | 0.12       | 200                        | 1.99                                   | 2,000                      |                         |
| NACE221M50V10X10.5TR13F | 220       | 0.12       | 320                        | 0.91                                   | 2,000                      |                         |
| NACE331M50V12.5X14TR15F | 330       | 0.12       | 520                        | 0.60                                   | 2,000                      |                         |
| NACE471M50V16X17TR15F   | 470       | 0.12       | 925                        | 0.43                                   | 2,000                      |                         |
| NACE102M50V16X17TR15F   | 1000      | 0.12       | 940                        | 0.20                                   | 2,000                      |                         |



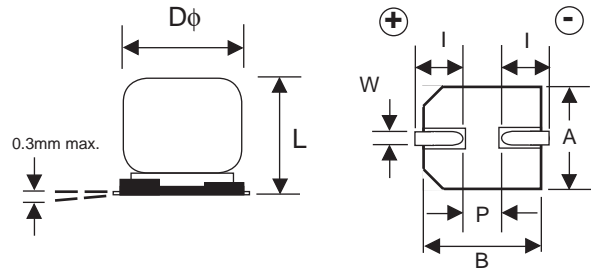
# Surface Mount Aluminum Electrolytic Capacitors NACE Series

## STANDARD PRODUCTS, SPECIFICATIONS AND CASE SIZE TABLE DφxL (mm)

| NIC Part Number          | Cap. (μF) | W.V. (Vdc) | Dissipation Factor (Tan δ) | Max. Ripple current (mA) @ +85°C/120Hz | Max. ESR (Ω) @ +20°C/120Hz | Load Life Hours @ +85°C |
|--------------------------|-----------|------------|----------------------------|--|----------------------------|-------------------------|
| NACER10M63V4X5.5TR13F    | 0.1       | 63         | 0.10                       | 1.0                                    | 1660                       | 2,000                   |
| NACER22M63V4X5.5TR13F    | 0.22      |            | 0.10                       | 2.3                                    | 754                        | 2,000                   |
| NACER33M63V4X5.5TR13F    | 0.33      |            | 0.10                       | 3.5                                    | 503                        | 2,000                   |
| NACER47M63V4X5.5TR13F    | 0.47      |            | 0.10                       | 5.0                                    | 353                        | 2,000                   |
| NACE1R0M63V4X5.5TR13F    | 1.0       |            | 0.10                       | 10                                     | 166                        | 2,000                   |
| NACE2R2M63V4X5.5TR13F    | 2.2       |            | 0.10                       | 15                                     | 75.4                       | 2,000                   |
| NACE3R3M63V5X5.5TR13F    | 3.3       |            | 0.10                       | 15                                     | 50.3                       | 2,000                   |
| NACE4R7M63V5X5.5TR13F    | 4.7       |            | 0.10                       | 23                                     | 35.3                       | 2,000                   |
| NACE100M63V6.3X5.5TR13F  | 10        |            | 0.10                       | 34                                     | 16.6                       | 2,000                   |
| NACE220M63V6.3X8TR13F    | 22        |            | 0.10                       | 70                                     | 7.54                       | 2,000                   |
| NACE330M63V8X10.5TR13F   | 33        |            | 0.12                       | 160                                    | 6.04                       | 2,000                   |
| NACE470M63V8X10.5TR13F   | 47        |            | 0.12                       | 170                                    | 4.24                       | 2,000                   |
| NACE680M63V8X10.5TR13F   | 68        |            | 0.12                       | 180                                    | 2.44                       | 2,000                   |
| NACE101M63V10X10.5TR13F  | 100       |            | 0.12                       | 280                                    | 1.99                       | 2,000                   |
| NACE221M63V12.5X14TR15F  | 220       |            | 0.12                       | 410                                    | 0.91                       | 2,000                   |
| NACE471M63V16X17TR15F    | 470       |            | 0.12                       | 700                                    | 0.43                       | 2,000                   |
| NACE1R0M100V4X6.3TR13F   | 1.0       | 100        | 0.10                       | 10                                     | 166                        | 2,000                   |
| NACE2R2M100V6.3X6.3TR13F | 2.2       |            | 0.10                       | 20                                     | 75.4                       | 2,000                   |
| NACE3R3M100V6.3X6.3TR13F | 3.3       |            | 0.10                       | 28                                     | 50.3                       | 2,000                   |
| NACE3R3M100V8X6.5TR13F   | 3.3       |            | 0.10                       | 50                                     | 90.4                       | 2,000                   |
| NACE4R7M100V6.3X6.3TR13F | 4.7       |            | 0.10                       | 35                                     | 35.3                       | 2,000                   |
| NACE100M100V6.3X8TR13F   | 10        |            | 0.10                       | 50                                     | 16.6                       | 2,000                   |
| NACE220M100V8X10.5TR13F  | 22        |            | 0.10                       | 120                                    | 7.54                       | 2,000                   |
| NACE330M100V10X10.5TR13F | 33        |            | 0.10                       | 190                                    | 5.03                       | 2,000                   |
| NACE470M100V12.5X14TR15F | 47        |            | 0.10                       | 330                                    | 3.53                       | 2,000                   |
| NACE680M100V12.5X14TR15F | 68        |            | 0.10                       | 350                                    | 2.44                       | 2,000                   |
| NACE101M100V16X17TR15F   | 100       |            | 0.10                       | 550                                    | 1.66                       | 2,000                   |
| NACE151M100V16X17TR15F   | 150       |            | 0.10                       | 560                                    | 1.11                       | 2,000                   |

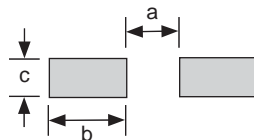
### DIMENSIONS (mm)

| Case Size | Dφ ±0.5 | L max. | A ±0.2 | B ±0.2 | I ±0.2 | W          | P ±0.2 |
|-----------|---------|--------|--------|--------|--------|------------|--------|
| 3 x 5.5   | 3.0     | 5.5    | 3.3    | 3.3    | 1.5    | 0.45 ~ 0.8 | 0.6    |
| 4 x 5.5   | 4.0     | 5.5    | 4.3    | 4.3    | 1.8    | 0.5 ~ 0.8  | 1.0    |
| 5 x 5.5   | 5.0     | 5.5    | 5.3    | 5.3    | 2.1    | 0.5 ~ 0.8  | 1.4    |
| 6.3 x 5.5 | 6.3     | 5.5    | 6.6    | 6.6    | 2.5    | 0.5 ~ 0.8  | 2.2    |
| 6.3 x 6.3 | 6.3     | 6.3    | 6.6    | 6.6    | 2.5    | 0.5 ~ 0.8  | 2.2    |
| 6.3 x 8   | 6.3     | 8.0    | 6.6    | 6.6    | 2.5    | 0.5 ~ 0.8  | 2.2    |
| 8 x 6.5   | 8.0     | 6.5    | 8.3    | 8.3    | 3.4    | 0.5 ~ 0.8  | 2.2    |
| 8 X 10.5  | 8.0     | 10.5   | 8.3    | 8.3    | 2.9    | 0.7 ~ 1.0  | 3.2    |
| 10 x 8    | 10.0    | 8.0    | 10.3   | 10.3   | 3.2    | 0.7 ~ 1.4  | 4.6    |
| 10 x 10.5 | 10.0    | 10.5   | 10.3   | 10.3   | 3.2    | 0.7 ~ 1.4  | 4.6    |
| 12.5 x 14 | 12.5    | 14.0   | 12.8   | 12.8   | 4.5    | 0.6 ~ 1.4  | 4.6    |
| 16 x 17   | 16.0    | 17.5   | 17.0   | 17.0   | 5.5    | 0.9 ~ 1.5  | 6.7    |



### RECOMMENDED LAND PATTERN DIMENSIONS (mm)

| Case Size | a   | b   | c   |
|-----------|-----|-----|-----|
| 3 φ       | 0.8 | 2.2 | 1.7 |
| 4 φ       | 1.0 | 2.6 | 1.8 |
| 5 φ       | 1.4 | 3.0 | 1.8 |
| 6.3 φ     | 2.1 | 3.5 | 1.8 |
| 8 φ       | 2.8 | 4.1 | 2.1 |
| 10 φ      | 4.3 | 4.4 | 2.5 |
| 12.5 φ    | 4.3 | 5.8 | 2.5 |
| 16 φ      | 6.6 | 6.5 | 5.0 |



# Surface Mount Aluminum Electrolytic Capacitors NACE Series

## CARRIER TAPE

| Case Size | A ±0.5 | B ±0.2 | C ±0.3 | D ±0.1 | P ±0.1 | T ±0.2 |
|-----------|--------|--------|--------|--------|--------|--------|
| 3 x 5.5   | 3.7    | 3.7    | 12.0   | 5.5    | 8.0    | 5.8    |
| 4 x 5.5   | 4.7    | 4.7    | 12.0   | 5.5    | 8.0    | 5.8    |
| 5 x 5.5   | 5.7    | 5.7    | 12.0   | 5.5    | 12.0   | 5.8    |
| 6.3 x 5.5 | 7.0    | 7.0    | 16.0   | 7.5    | 12.0   | 5.8    |
| 6.3 x 6.3 | 7.0    | 7.0    | 16.0   | 7.5    | 12.0   | 6.6    |
| 6.3 x 8   | 7.0    | 7.0    | 16.0   | 7.5    | 12.0   | 8.3    |
| 8 x 6.5   | 8.7    | 8.7    | 16.0   | 7.5    | 12.0   | 6.8    |
| 8 X 10.5  | 8.7    | 8.7    | 24.0   | 11.5   | 16.0   | 11.1   |
| 10 x 8    | 10.7   | 10.7   | 24.0   | 11.5   | 16.0   | 8.3    |
| 10 x 10.5 | 10.7   | 10.7   | 24.0   | 11.5   | 16.0   | 11.2   |
| 12.5 x 14 | 13.2   | 13.2   | 32.0   | 14.2   | 24.0   | 14.2   |
| 16 x 17   | 17.5   | 17.5   | 44.0   | 20.2   | 28.0   | 17.5   |

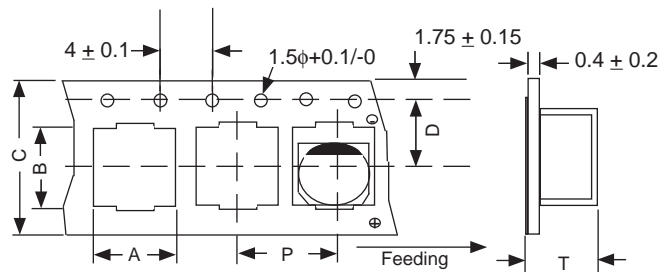
## TR13 330mm (13") REEL TR15 380mm (15") REEL

| Case Size | W ±1.0 | Quantity Per Reel |           |
|-----------|--------|-------------------|-----------|
|           |        | 13" Reel          | 15" Reel  |
| 3 x 5.5   | 14.0   | 1,500 pcs         | 2,000 pcs |
| 4 x 5.5   | 14.0   | 1,500 pcs         | 2,000 pcs |
| 5 x 5.5   | 14.0   | 1,000 pcs         | 1,000 pcs |
| 6.3 x 5.5 | 18.0   | 1,000 pcs         | 1,000 pcs |
| 6.3 x 6.3 | 18.0   | 800 pcs           | 1,000 pcs |
| 6.3 x 8   | 18.0   | 500 pcs           | 900 pcs   |
| 8 x 6.5   | 18.0   | 800 pcs           | 1,000 pcs |
| 8 X 10.5  | 26.0   | 300 pcs           | 500 pcs   |
| 10 x 8    | 26.0   | 400 pcs           | 500 pcs   |
| 10 x 10.5 | 26.0   | 300 pcs           | 500 pcs   |
| 12.5 x 14 | 34.0   | N/A               | 250 pcs   |
| 16 x 17   | 46.0   | N/A               | 200 pcs   |

## TAPING SPECIFICATIONS (mm)

- Both Leader and Trailer tape: Minimum 40mm (1.57") empty carrier tape pockets.
- Leader tape: Approximately 20cm of cover tape at leader.
- Connection: Maximum 3 connections (slices) per reel.

## CARRIER



## REEL

