

# Surface Mount Aluminum Electrolytic Capacitors NACZ Series

## FEATURES

- CYLINDRICAL V-CHIP CONSTRUCTION FOR SURFACE MOUNTING
- VERY LOW IMPEDANCE & HIGH RIPPLE CURRENT AT 100KHz
- SUITABLE FOR DC-DC CONVERTER, DC-AC INVERTER, ETC.
- NEW EXPANDED CV RANGE, UP TO 6800 $\mu$ F
- NEW HIGH TEMPERATURE REFLOW "M1" VERSION
- DESIGNED FOR AUTOMATIC MOUNTING AND REFLOW SOLDERING

**RoHS  
Compliant**  
includes all homogeneous materials

\*See Part Number System for Details



## CHARACTERISTICS

|                                                |                                           |
|------------------------------------------------|-------------------------------------------|
| Rated Voltage Rating                           | 6.3 ~ 50Vdc                               |
| Rated Capacitance Range                        | 4.7 ~ 6800 $\mu$ F                        |
| Operating Temp. Range                          | -55 ~ +105°C                              |
| Capacitance Tolerance                          | $\pm$ 20% (M)                             |
| Max. Leakage Current<br>After 2 Minutes @ 20°C | 0.01CV Or 3 $\mu$ A, whichever is greater |

**LOW IMPEDANCE  
AT HIGH FREQUENCY**  
INDUSTRY STANDARD  
STYLE FOR SWITCHERS  
AND CONVERTERS

**LOW ESR COMPONENT**  
LIQUID ELECTROLYTE  
For Performance Data  
see [www.LowESR.com](http://www.LowESR.com)

|                                                                                   |                              |                                                     |      |      |      |      |      |
|-----------------------------------------------------------------------------------|------------------------------|-----------------------------------------------------|------|------|------|------|------|
| Tan $\delta$ @ 120Hz/20°C                                                         | W.V. (Vdc)                   | 6.3                                                 | 10   | 16   | 25   | 35   | 50   |
|                                                                                   | S.V. (Vdc)                   | 8.0                                                 | 13   | 20   | 32   | 44   | 63   |
|                                                                                   | $\phi$ 4 ~ $\phi$ 6.3mm Dia. | 0.24                                                | 0.20 | 0.16 | 0.14 | 0.12 | 0.10 |
|                                                                                   | $\phi$ 8 ~ $\phi$ 16mm Dia.  | C $\leq$ 1000 $\mu$ F                               | 0.28 | 0.24 | 0.20 | 0.16 | 0.14 |
|                                                                                   |                              | C = 1500 $\mu$ F                                    | 0.29 | 0.25 | 0.21 | -    | 0.14 |
|                                                                                   |                              | C = 2200 $\mu$ F                                    | 0.30 | 0.26 | -    | 0.18 | -    |
|                                                                                   |                              | C = 3300 $\mu$ F                                    | 0.32 | -    | 0.24 | -    | -    |
|                                                                                   |                              | C = 4700 $\mu$ F                                    | 0.34 | 0.30 | -    | -    | -    |
|                                                                                   |                              | C = 6800 $\mu$ F                                    | 0.38 | -    | -    | -    | -    |
| Low Temperature<br>Stability<br>Impedance Ratio @ 120Hz                           | W.V. (Vdc)                   | 6.3                                                 | 10   | 16   | 25   | 35   | 50   |
|                                                                                   | Z-40°C/Z+20°C                | 3                                                   | 2    | 2    | 2    | 2    | 2    |
|                                                                                   | Z-55°C/Z+20°C                | 5                                                   | 4    | 4    | 3    | 3    | 3    |
| Load Life Test @ 105°C<br>4 ~ 6mm Dia. 1,000 hours<br>8 ~ 12.5mm Dia. 2,000 hours | Capacitance Change           | Within $\pm$ 25% of initial measured value          |      |      |      |      |      |
|                                                                                   | Tan $\delta$                 | Less than $\pm$ 200% of the specified maximum value |      |      |      |      |      |
|                                                                                   | Leakage Current              | Less than the specified maximum value               |      |      |      |      |      |

## STANDARD PRODUCT AND CASE SIZE TABLE D $\phi$ x L (mm)

| Cap ( $\mu$ F) | Code | Working Voltage (Vdc) |         |          |          |          |          |
|----------------|------|-----------------------|---------|----------|----------|----------|----------|
|                |      | 6.3                   | 10      | 16       | 25       | 35       | 50       |
| 4.7            | 4R7  | -                     | -       | -        | -        | 4x6.3    | 4x6.3    |
| 10             | 100  | -                     | -       | -        | 4x6.3*   | 5x6.3*   | 6.3x6.3* |
| 15             | 150  | -                     | -       | 4x6.3    | -        | 5x6.3*   | -        |
| 22             | 220  | -                     | 4x6.3   | 5x6.3*   | 5x6.3    | 5x6.3*   | 6.3x6.3* |
| 27             | 270  | 4x6.3*                | -       | -        | -        | -        | -        |
| 33             | 330  | -                     | 5x6.3   | -        | 6.3x6.3  | 6.3x6.3* | 6.3x8*   |
| 47             | 470  | 5x6.3                 | -       | 6.3x6.3  | 6.3x6.3  | 6.3x6.3* | 6.3x8*   |
| 56             | 560  | 5x6.3*                | -       | -        | 6.3x6.3  | -        | -        |
| 68             | 680  | -                     | 6.3x6.3 | 6.3x6.3* | 6.3x6.3  | 6.3x8*   | 8x10.5*  |
| 100            | 101  | 6.3x6.3*              | -       | 6.3x6.3* | 6.3x8*   | 8x10.5   | 8x10.5*  |
| 120            | 121  | -                     | 6.3x6.3 | -        | -        | -        | -        |
| 150            | 151  | 6.3x6.3               | 6.3x6.3 | 6.3x8*   | 8x10.5*  | 8x10.5*  | 10x10.5* |
|                |      |                       |         |          |          | 10x8     |          |
| 220            | 221  | 6.3x6.3               | 6.3x8   | 6.3x8*   | 8x10.5*  | 8x10.5   | 10x10.5  |
|                |      |                       |         |          | 10x8     |          |          |
| 330            | 331  | 6.3x8*                | 8x10.5  | 8x10.5*  | 8x10.5   | 10x10.5  | 12.5x14  |
|                |      |                       |         | 10x8     |          |          |          |
| 390            | 391  | -                     | -       | -        | -        | -        | 12.5x14  |
| 470            | 471  | 8x10.5                | 8x10.5  | 8x10.5   | 10x10.5* | 12.5x14  | 16x17    |
|                |      |                       | 10x8    |          |          |          |          |
| 680            | 681  | 8x10.5                | -       | 10x10.5  | -        | 12.5x14  | -        |
|                |      | 10x8*                 |         |          |          |          |          |
| 1000           | 102  | 8x10.5*               | 10x10.5 | -        | 12.5x14  | -        | 16x17    |
| 1500           | 152  | 10x10.5*              | -       | 12.5x14  | -        | 16x17    | -        |
| 2200           | 222  | -                     | 12.5x14 | -        | 16x17    | -        | -        |
| 3300           | 332  | 12.5x14               | -       | 16x17    | -        | -        | -        |
| 4700           | 472  | -                     | 16x17   | -        | -        | -        | -        |
| 6800           | 682  | 16x17                 | -       | -        | -        | -        | -        |

Denotes New Value



# Surface Mount Aluminum Electrolytic Capacitors NACZ Series

## STANDARD VALUES, CASE SIZES AND SPECIFICATIONS

| NIC Part Number*         | Cap.<br>( $\mu$ F) | W.V.<br>(Vdc) | Dissipaton Factor<br>(Tan $\delta$ ) | Max. Ripple Current (mA)<br>+105°C, 100KHz | Max. Impedance ( $\Omega$ )<br>+20°C, 100KHz | Load Life Hours<br>@ +105°C |       |
|--------------------------|--------------------|---------------|--------------------------------------|--------------------------------------------|----------------------------------------------|-----------------------------|-------|
| NACZ270M6.3V4X6.3TR13F   | 27                 | 6.3           | 0.24                                 | 80                                         | 1.80                                         | 1,000                       |       |
| NACZ470M6.3V5X6.3TR13F   | 47                 |               | 0.24                                 | 150                                        | 0.76                                         | 1,000                       |       |
| NACZ560M6.3V5X6.3TR13F   | 56                 |               | 0.24                                 | 150                                        | 0.76                                         | 1,000                       |       |
| NACZ101M6.3V6.3X6.3TR13F | 100                |               | 0.24                                 | 230                                        | 0.44                                         | 1,000                       |       |
| NACZ151M6.3V6.3X6.3TR13F | 150                |               | 0.24                                 | 230                                        | 0.44                                         | 1,000                       |       |
| NACZ221M6.3V6.3X6.3TR13F | 220                |               | 0.24                                 | 230                                        | 0.44                                         | 1,000                       |       |
| NACZ331M6.3V6.3X8TR13F   | 330                |               | 0.24                                 | 280                                        | 0.34                                         | 1,000                       |       |
| NACZ471M6.3V8X10.5TR13F  | 470                |               | 0.28                                 | 450                                        | 0.17                                         | 2,000                       |       |
| NACZ681M6.3V8X10.5TR13F  | 680                |               | 0.28                                 | 450                                        | 0.17                                         | 2,000                       |       |
| NACZ681M6.3V10X8TR13F    |                    |               |                                      |                                            |                                              |                             |       |
| NACZ102M6.3V8X10.5TR13F  | 1000               |               | 0.28                                 | 450                                        | 0.17                                         | 2,000                       |       |
| NACZ152M6.3V10X10.5TR13F | 1500               |               | 0.29                                 | 670                                        | 0.09                                         | 2,000                       |       |
| NACZ332M6.3V12.5X14TR15F | 3300               |               | 0.32                                 | 900                                        | 0.066                                        | 2,000                       |       |
| NACZ682M6.3V16X17TR15F   | 6800               |               | 0.38                                 | 1250                                       | 0.052                                        | 2,000                       |       |
| NACZ220M10V4X6.3TR13F    | 22                 | 10            | 0.20                                 | 80                                         | 1.80                                         | 1,000                       |       |
| NACZ330M10V5X6.3TR13F    | 33                 |               | 0.20                                 | 150                                        | 0.76                                         | 1,000                       |       |
| NACZ680M10V6.3X6.3TR13F  | 68                 |               | 0.20                                 | 230                                        | 0.44                                         | 1,000                       |       |
| NACZ121M10V6.3X6.3TR13F  | 120                |               | 0.20                                 | 230                                        | 0.44                                         | 1,000                       |       |
| NACZ151M10V6.3X6.3TR13F  | 150                |               | 0.20                                 | 230                                        | 0.44                                         | 1,000                       |       |
| NACZ221M10V6.3X8TR13F    | 220                |               | 0.20                                 | 280                                        | 0.34                                         | 1,000                       |       |
| NACZ331M10V8X10.5TR13F   | 330                |               | 0.24                                 | 450                                        | 0.17                                         | 2,000                       |       |
| NACZ471M10V8X10.5TR13F   | 470                |               | 0.24                                 | 450                                        | 0.17                                         | 2,000                       |       |
| NACZ471M10V10X8TR13F     |                    |               |                                      |                                            |                                              |                             |       |
| NACZ102M10V10X10.5TR13F  | 1000               |               | 0.24                                 | 670                                        | 0.09                                         | 2,000                       |       |
| NACZ222M10V12.5X14TR15F  | 2200               |               | 0.26                                 | 900                                        | 0.066                                        | 2,000                       |       |
| NACZ472M10V16X17TR15F    | 4700               |               | 0.30                                 | 1250                                       | 0.052                                        | 2,000                       |       |
| NACZ150M16V4X6.3TR13F    | 15                 |               | 16                                   | 0.16                                       | 80                                           | 1.80                        | 1,000 |
| NACZ220M16V5X6.3TR13F    | 22                 |               |                                      | 0.16                                       | 150                                          | 0.76                        | 1,000 |
| NACZ470M16V6.3X6.3TR13F  | 47                 | 0.16          |                                      | 230                                        | 0.44                                         | 1,000                       |       |
| NACZ680M16V6.3X6.3TR13F  | 68                 | 0.16          |                                      | 230                                        | 0.44                                         | 1,000                       |       |
| NACZ101M16V6.3X6.3TR13F  | 100                | 0.16          |                                      | 230                                        | 0.44                                         | 1,000                       |       |
| NACZ151M16V6.3X8TR13F    | 150                | 0.16          |                                      | 280                                        | 0.34                                         | 1,000                       |       |
| NACZ221M16V6.3X8TR13F    | 220                | 0.16          |                                      | 280                                        | 0.34                                         | 1,000                       |       |
| NACZ331M16V8X10.5TR13F   | 330                | 0.20          |                                      | 450                                        | 0.17                                         | 2,000                       |       |
| NACZ331M16V10X8TR13F     |                    |               |                                      |                                            |                                              |                             |       |
| NACZ471M16V8X10.5TR13F   | 470                | 0.20          |                                      | 450                                        | 0.17                                         | 2,000                       |       |
| NACZ681M16V10X10.5TR13F  | 680                | 0.20          |                                      | 670                                        | 0.09                                         | 2,000                       |       |
| NACZ152M16V12.5X14TR15F  | 1500               | 0.21          |                                      | 900                                        | 0.066                                        | 2,000                       |       |
| NACZ332M16V16X17TR15F    | 3300               | 0.24          |                                      | 1250                                       | 0.052                                        | 2,000                       |       |
| NACZ100M25V4X6.3TR13F    | 10                 | 25            |                                      | 0.14                                       | 80                                           | 1.80                        | 1,000 |
| NACZ220M25V5X6.3TR13F    | 22                 |               | 0.14                                 | 150                                        | 0.76                                         | 1,000                       |       |
| NACZ330M25V6.3X6.3TR13F  | 33                 |               | 0.14                                 | 230                                        | 0.44                                         | 1,000                       |       |
| NACZ470M25V6.3X6.3TR13F  | 47                 |               | 0.14                                 | 230                                        | 0.44                                         | 1,000                       |       |
| NACZ560M25V6.3X6.3TR13F  | 56                 |               | 0.14                                 | 230                                        | 0.44                                         | 1,000                       |       |
| NACZ680M25V6.3X6.3TR13F  | 68                 |               | 0.14                                 | 230                                        | 0.44                                         | 1,000                       |       |
| NACZ101M25V6.3X8TR13F    | 100                |               | 0.14                                 | 280                                        | 0.34                                         | 1,000                       |       |
| NACZ151M25V8X10.5TR13F   | 150                |               | 0.16                                 | 450                                        | 0.17                                         | 2,000                       |       |
| NACZ221M25V8X10.5TR13F   | 220                |               | 0.16                                 | 450                                        | 0.17                                         | 2,000                       |       |
| NACZ221M25V10X8TR13F     |                    |               |                                      |                                            |                                              |                             |       |
| NACZ331M25V8X10.5TR13F   | 330                |               | 0.16                                 | 450                                        | 0.17                                         | 2,000                       |       |
| NACZ471M25V10X10.5TR13F  | 470                |               | 0.16                                 | 670                                        | 0.09                                         | 2,000                       |       |
| NACZ102M25V12.5X14TR15F  | 1000               |               | 0.16                                 | 900                                        | 0.066                                        | 2,000                       |       |
| NACZ222M25V16X17TR15F    | 2200               |               | 0.18                                 | 1250                                       | 0.052                                        | 2,000                       |       |
| NACZ47R7M35V4X6.3TR13F   | 4.7                | 35            | 0.12                                 | 80                                         | 1.80                                         | 1,000                       |       |
| NACZ100M35V5X6.3TR13F    | 10                 |               | 0.12                                 | 150                                        | 0.76                                         | 1,000                       |       |
| NACZ150M35V5X6.3TR13F    | 15                 |               | 0.12                                 | 150                                        | 0.76                                         | 1,000                       |       |
| NACZ220M35V5X6.3TR13F    | 22                 |               | 0.12                                 | 150                                        | 0.76                                         | 1,000                       |       |
| NACZ330M35V6.3X6.3TR13F  | 33                 |               | 0.12                                 | 230                                        | 0.44                                         | 1,000                       |       |
| NACZ470M35V6.3X6.3TR13F  | 47                 |               | 0.12                                 | 230                                        | 0.44                                         | 1,000                       |       |

\*For Automotive Equipment and high temperature reflow version see part number system



NIC COMPONENTS CORP. [www.niccomp.com](http://www.niccomp.com) | [www.lowESR.com](http://www.lowESR.com) | [www.RFpassives.com](http://www.RFpassives.com) | [www.SMTmagnetics.com](http://www.SMTmagnetics.com)

SPECIFICATIONS ARE SUBJECT TO CHANGE

# Surface Mount Aluminum Electrolytic Capacitors NACZ Series

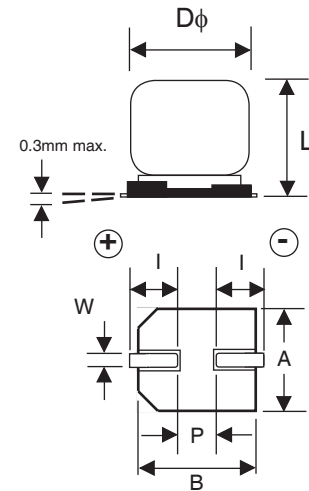
## STANDARD VALUES, CASE SIZES AND SPECIFICATIONS

| NIC Part Number*        | Cap.<br>(μF) | W.V.<br>(Vdc) | Dissipaton Factor<br>(Tan δ) | Max. Ripple Current (mA)<br>+105°C, 100KHz | Max. Impedance (Ω)<br>+20°C, 100KHz | Load Life Hours<br>@ +105°C |
|-------------------------|--------------|---------------|------------------------------|--------------------------------------------|-------------------------------------|-----------------------------|
| NACZ680M35V6.3X8TR13F   | 68           | 35            | 0.12                         | 280                                        | 0.34                                | 1,000                       |
| NACZ101M35V8X10.5TR13F  | 100          |               | 0.14                         | 450                                        | 0.17                                | 2,000                       |
| NACZ151M35V8X10.5TR13F  | 150          |               | 0.14                         | 450                                        | 0.17                                | 2,000                       |
| NACZ151M35V10X8TR13F    |              |               |                              |                                            |                                     |                             |
| NACZ221M35V8X10.5TR13F  |              |               |                              |                                            |                                     |                             |
| NACZ331M35V10X10.5TR13F | 330          |               | 0.14                         | 670                                        | 0.09                                | 2,000                       |
| NACZ471M35V12.5X14TR15F | 470          |               | 0.14                         | 900                                        | 0.066                               | 2,000                       |
| NACZ681M35V12.5X14TR15F | 680          |               | 0.14                         | 900                                        | 0.066                               | 2,000                       |
| NACZ152M35V16X17TR15F   | 1500         |               | 0.14                         | 1250                                       | 0.052                               | 2,000                       |
| NACZ4R7M50V4X6.3TR13F   | 4.7          | 50            | 0.10                         | 60                                         | 2.90                                | 1,000                       |
| NACZ100M50V6.3X6.3TR13F | 10           |               | 0.10                         | 165                                        | 0.88                                | 1,000                       |
| NACZ220M50V6.3X6.3TR13F | 22           |               | 0.10                         | 165                                        | 0.88                                | 1,000                       |
| NACZ330M50V6.3X8TR13F   | 33           |               | 0.10                         | 195                                        | 0.75                                | 1,000                       |
| NACZ470M50V6.3X8TR13F   | 47           |               | 0.10                         | 195                                        | 0.75                                | 1,000                       |
| NACZ680M50V8X10.5TR13F  | 68           |               | 0.14                         | 300                                        | 0.40                                | 2,000                       |
| NACZ101M50V8X10.5TR13F  | 100          |               | 0.14                         | 300                                        | 0.40                                | 2,000                       |
| NACZ151M50V10X10.5TR13F | 150          |               | 0.14                         | 450                                        | 0.22                                | 2,000                       |
| NACZ221M50V10X10.5TR13F | 220          |               | 0.14                         | 450                                        | 0.22                                | 2,000                       |
| NACZ331M50V12.5X14TR15F | 330          |               | 0.14                         | 620                                        | 0.14                                | 2,000                       |
| NACZ391M50V12.5X14TR15F | 390          |               | 0.14                         | 620                                        | 0.14                                | 2,000                       |
| NACZ471M50V16X17TR15F   | 470          |               | 0.14                         | 790                                        | 0.078                               | 2,000                       |
| NACZ102M50V16X17TR15F   | 1000         |               | 0.14                         | 790                                        | 0.078                               | 2,000                       |

\*For Automotive Equipment and high temperature reflow version see part number system

## DIMENSIONS (mm)

| Case Size | φD±0.5 | L max. | A±0.2 | B±0.2 | I±0.3 | W       | P±0.3 |
|-----------|--------|--------|-------|-------|-------|---------|-------|
| 4x6.3     | 4.0    | 6.3    | 4.3   | 4.3   | 1.8   | 0.5~0.8 | 1.0   |
| 5x6.3     | 5.0    | 6.3    | 5.3   | 5.3   | 2.2   | 0.5~0.8 | 1.4   |
| 6.3x6.3   | 6.3    | 6.3    | 6.6   | 6.6   | 2.5   | 0.5~0.8 | 2.2   |
| 6.3X8     | 6.3    | 8.0    | 6.6   | 6.6   | 2.5   | 0.5~0.8 | 2.2   |
| 8X10.5    | 8.0    | 10.5   | 8.3   | 8.3   | 2.9   | 0.7~1.0 | 3.2   |
| 10X8      | 10.0   | 8.0    | 10.3  | 10.3  | 3.2   | 1.1~1.4 | 4.6   |
| 10X10.5   | 10.0   | 10.5   | 10.3  | 10.3  | 3.2   | 1.1~1.4 | 4.6   |
| 12.5x14   | 12.5   | 14.0   | 12.8  | 12.8  | 4.5   | 1.1~1.4 | 4.6   |
| 16x17     | 16.0   | 17.0   | 16.3  | 16.3  | 5.0   | 1.8~2.1 | 7.0   |



## PART NUMBER SYSTEM

NACZ 101 M 16V 6.3x6.3 TR 13 M1 Y F

RoHS Compliant

Denotes high temp. reflow version

13 = 13" (330mm) Reel, 15 = 15" (380mm) Reel

Tape & Reel

Size in mm

Working Voltage

Tolerance Code M=20%

Capacitance Code in μF, first 2 digits are significant

Third digit is no. of zeros, "R" indicates decimal for values under 10μF

Series

Optional: Suitable for automotive equipment, sourced to special production and inspection at TS-16949 certified production site

| Case Diameter | Termination Material |
|---------------|----------------------|
| 4 ~ 12.5mm φ  | 97% Sn, 3% Bi        |
| 16mm          | 100% Sn              |



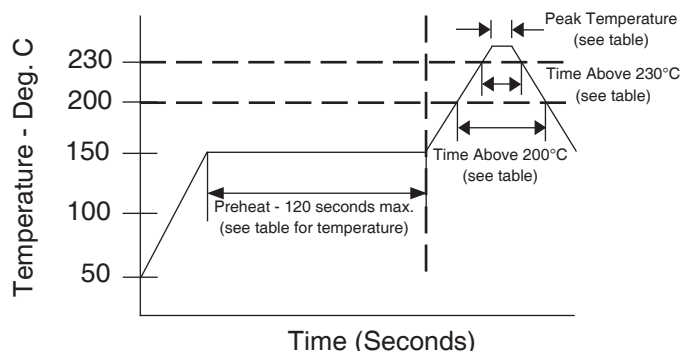
### PEAK REFLOW SOLDERING TEMPERATURES AND DURATIONS (STANDARD VERSION)

| Case Size | Preheat:<br>150°C ~ 180°C | Max. Soldering<br>Temperature | Max. Exposure Time at Max.<br>Soldering Temperature | Max. Exposure Time<br>Above +200°C | Multiple Reflow<br>Exposure |
|-----------|---------------------------|-------------------------------|-----------------------------------------------------|------------------------------------|-----------------------------|
| 4x6.3     | 120 seconds max.          | +250°C                        | 5 seconds                                           | 70 seconds                         | 2 times max.                |
| 5x6.3     | 120 seconds max.          | +250°C                        | 5 seconds                                           | 70 seconds                         | 2 times max.                |
| 6.3x6.3   | 120 seconds max.          | +250°C                        | 5 seconds                                           | 70 seconds                         | 2 times max.                |
| 6.3x8     | 120 seconds max.          | +250°C                        | 5 seconds                                           | 70 seconds                         | 2 times max.                |
| 8x10.5    | 120 seconds max.          | +245°C                        | 5 seconds                                           | 60 seconds                         | 2 times max.                |
| 10x8      | 120 seconds max.          | +240°C                        | 5 seconds                                           | 50 seconds                         | 2 times max.                |
| 10x10.5   | 120 seconds max.          | +240°C                        | 5 seconds                                           | 50 seconds                         | 2 times max.                |
| 12.5x14   | 120 seconds max.          | +240°C                        | 5 seconds                                           | 50 seconds                         | 2 times max.                |
| 16x17     | 120 seconds max.          | +230°C                        | 5 seconds                                           | 30 seconds                         | 2 times max.                |

### PEAK REFLOW SOLDERING TEMPERATURES AND DURATIONS (M1 VERSION)

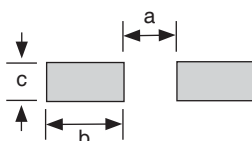
| Case Size | Preheat:<br>150°C ~ 180°C | Max. Soldering<br>Temperature | Max. Exposure Time at Max.<br>Soldering Temperature | Max. Exposure Time<br>Above +200°C | Max. Exposure Time<br>Above +230°C | Multiple Reflow<br>Exposure |
|-----------|---------------------------|-------------------------------|-----------------------------------------------------|------------------------------------|------------------------------------|-----------------------------|
| 4x6.3     | 120 seconds max.          | +255°C                        | 5 seconds                                           | 60 seconds                         | 30 seconds                         | 2 times max.                |
| 5x6.3     | 120 seconds max.          | +255°C                        | 5 seconds                                           | 60 seconds                         | 30 seconds                         | 2 times max.                |
| 6.3x6.3   | 120 seconds max.          | +255°C                        | 5 seconds                                           | 60 seconds                         | 30 seconds                         | 2 times max.                |
| 6.3x8     | 120 seconds max.          | +255°C                        | 5 seconds                                           | 60 seconds                         | 30 seconds                         | 2 times max.                |
| 8x10.5    | 120 seconds max.          | +250°C                        | 5 seconds                                           | 60 seconds                         | 30 seconds                         | 2 times max.                |
| 10x8      | 120 seconds max.          | +250°C                        | 5 seconds                                           | 60 seconds                         | 30 seconds                         | 2 times max.                |
| 10x10.5   | 120 seconds max.          | +250°C                        | 5 seconds                                           | 60 seconds                         | 20 seconds                         | 2 times max.                |

### RECOMMENDED REFLOW SOLDERING PROFILE



### RECOMMENDED LAND PATTERN DIMENSIONS (mm)

| Case Size | a   | b   | c   |
|-----------|-----|-----|-----|
| 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 |



### 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)

Review & Compare Reflow Soldering Heat Limits  
 V-chip SMT Aluminum Electrolytic Capacitors  
[www.niccomp.com/RSL](http://www.niccomp.com/RSL)



### CARRIER TAPE

| Case Size | A $\pm 0.5$ | B $\pm 0.2$ | C $\pm 0.3$ | D $\pm 0.1$ | P $\pm 0.1$ | T $\pm 0.2$ |
|-----------|-------------|-------------|-------------|-------------|-------------|-------------|
| 4 x 6.3   | 4.7         | 4.7         | 12.0        | 5.5         | 8.0         | 6.6         |
| 5 x 6.3   | 5.7         | 5.7         | 12.0        | 5.5         | 12.0        | 6.6         |
| 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 10.5  | 8.7         | 8.7         | 24.0        | 7.5         | 12.0        | 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

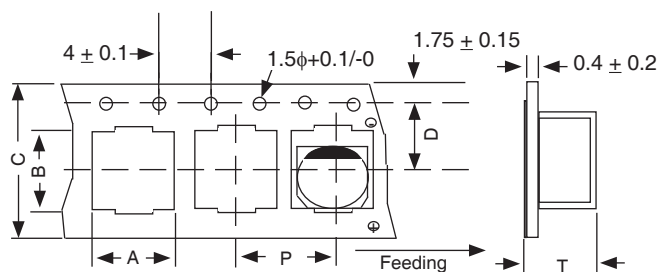
### TR15 380mm (15") REEL

| Case Size | W $\pm 1.0$ | Quantity Per Reel |           |
|-----------|-------------|-------------------|-----------|
|           |             | 13" Reel          | 15" Reel  |
| 4 x 6.3   | 14.0        | 1,200 pcs         | 2,000 pcs |
| 5 x 6.3   | 14.0        | 800 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 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        | 200 pcs           | 250 pcs   |
| 16 x 17   | 46.0        | 125 pcs           | 150 pcs   |

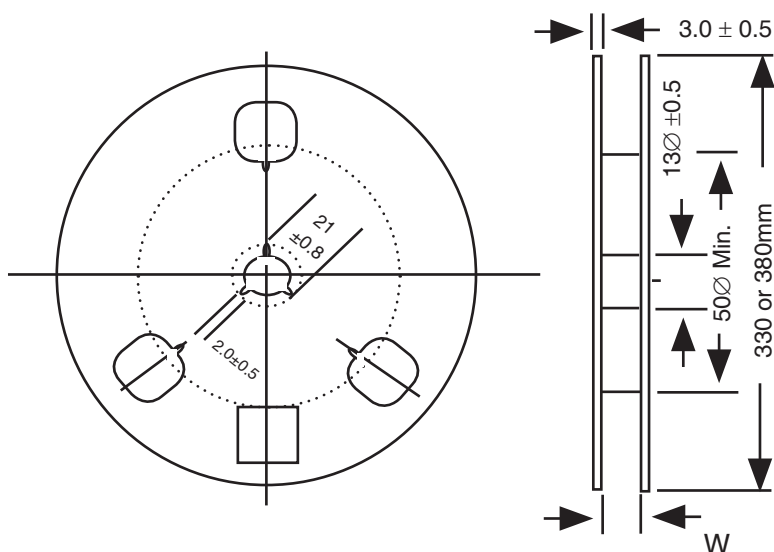
### TAPING SPECIFICATIONS (mm)

- 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





Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



#### Как с нами связаться

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