

Surface Mount Aluminum Electrolytic Capacitors NACZF Series

FEATURES

- CYLINDRICAL LEADLESS TYPE FOR SURFACE MOUNTING
- HIGH CAPACITANCE VALUES (UP TO 6800 μ F)
- LOW IMPEDANCE/HIGH RIPPLE CURRENT AT 100KHz
- 12.5mm x 17mm ~ 18mm x 22mm CASE SIZES
- WIDE TERMINATION STYLE FOR HIGH VIBRATION APPLICATIONS
- LONG LIFE (5000 HOURS AT +105°C)
- DESIGNED FOR REFLOW SOLDERING

RoHS Compliant
includes all homogeneous materials

*See Part Number System for Details



CHARACTERISTICS

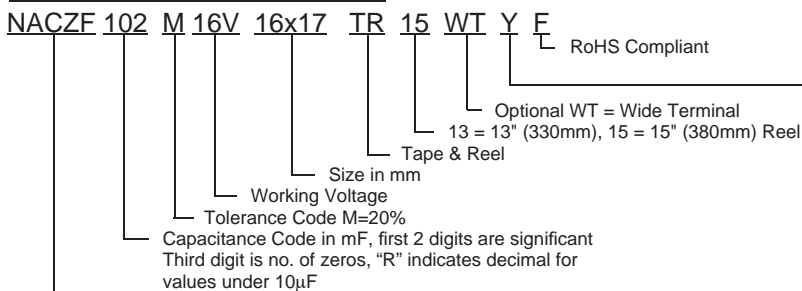
| | | | | | | | | | |
|---|-----------------------|--|-------|-------|-------|-------|-------|-------|--------|
| Rated Voltage Range | | 6.3 ~ 100Vdc | | | | | | | |
| Rated Capacitance Range | | 47 ~ 6,800 μ F | | | | | | | |
| Operating Temperature Range | | -40°C ~ +105°C | | | | | | | |
| Capacitance Tolerance | | ±20% (M) | | | | | | | |
| Max. Leakage Current After 2 Minutes | | 0.01CV or 3 μ A whichever is greater | | | | | | | |
| Working Voltage | | 6.3Vdc | 10Vdc | 16Vdc | 25Vdc | 35Vdc | 50Vdc | 63Vdc | 100Vdc |
| Surge Voltage | | 8.0Vdc | 13Vdc | 20Vdc | 32Vdc | 44Vdc | 63Vdc | 79Vdc | 125Vdc |
| Max. Tan δ at 120Hz & 20°C | C \leq 1000 μ F | - | 0.19 | 0.16 | 0.14 | 0.12 | 0.10 | 0.08 | 0.07 |
| | C = 2200 μ F | 0.24 | 0.21 | 0.18 | 0.16 | 0.14 | - | - | - |
| | C = 3300 μ F | 0.26 | 0.23 | 0.20 | 0.18 | - | - | - | - |
| | C = 4700 μ F | 0.28 | 0.25 | - | - | - | - | - | - |
| Low Temperature Stability (Impedance Ratio @ 120Hz) | Z-25°C/Z+20°C | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| | Z-40°C/Z+20°C | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| High Temperature Load Life 5,000 Hours at +105°C Rated WVDC | Capacitance Change | Within ±20% of initial measured value | | | | | | | |
| | Tan δ | Less than 200% of specified value | | | | | | | |
| | Leakage Current | Less than the specified maximum value | | | | | | | |
| Resistance to Soldering Heat Within the Recommended Reflow Conditions | Capacitance Change | Within ±10% of initial measured value | | | | | | | |
| | Tan δ | Less than the specified maximum value | | | | | | | |
| | Leakage Current | Less than the specified maximum value | | | | | | | |

STANDARD PRODUCT AND CASE SIZE TABLE D ϕ xL (mm)

| Cap (μ F) | Code | Working Voltage (Vdc) | | | | | | | |
|----------------|------|-----------------------|-----------|---------|-----------|-----------|-----------|-----------|-----------|
| | | 6.3 | 10 | 16 | 25 | 35 | 50 | 63 | 100 |
| 47 | 470 | - | - | - | - | - | - | - | 12.5 x 17 |
| 68 | 680 | - | - | - | - | - | - | 12.5 x 17 | 12.5 x 17 |
| 100 | 101 | - | - | - | - | - | - | 12.5 x 17 | 16 x 17 |
| 220 | 221 | - | - | - | - | - | 12.5 x 17 | 16 x 17 | 18 x 17 |
| 330 | 331 | - | - | - | - | 12.5 x 17 | 16 x 17 | 18 x 17 | 18 x 22 |
| 470 | 471 | - | - | - | 12.5 x 17 | 16 x 17 | 18 x 17 | 18 x 22 | - |
| 1000 | 102 | - | 12.5 x 17 | 16 x 17 | 18 x 17 | 18 x 17 | 18 x 22 | - | - |
| 2200 | 222 | 16 x 17 | 16 x 17 | 18 x 17 | 18 x 22 | 18 x 22 | - | - | - |
| 3300 | 332 | 18 x 17 | 18 x 17 | 18 x 22 | 18 x 22 | - | - | - | - |
| 4700 | 472 | 18 x 22 | 18 x 22 | - | - | - | - | - | - |
| 6800 | 682 | 18 x 22 | 18 x 22 | - | - | - | - | - | - |

Shading denotes parts available with "Y" option (for Automotive Equipment)

PART NUMBER SYSTEM



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

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
If in doubt or uncertainty, please review your specific application - process details with NIC's technical support personnel: tpmg@niccomp.com



Surface Mount Aluminum Electrolytic Capacitors NACZF Series

STANDARD VALUES, CASE SIZES AND SPECIFICATIONS

| NIC Part Number* | Cap. (μF) | W.V. (Vdc) | Dissipation Factor (Tan δ) | Max. Ripple Current (mA) +105°C, 100KHz | Max. Impedance (Ω) +20°C, 100KHz | Load Life Hours @ +105°C |
|-----------------------------|-----------|------------|----------------------------|---|----------------------------------|--------------------------|
| NACZF222M6.3V16X17TR15T2F | 2200 | 6.3 | 0.24 | 1690 | 0.043 | 5,000 |
| NACZF332M6.3V18X17TR13T2F | 3300 | | 0.26 | 2000 | 0.038 | 5,000 |
| NACZF472M6.3V18X22TR13T2F | 4700 | | 0.28 | 2205 | 0.029 | 5,000 |
| NACZF682M6.3V18X22TR13T2F | 6800 | | 0.32 | 2490 | 0.028 | 5,000 |
| NACZF102M10V12.5X17TR13T2F | 1000 | 10 | 0.19 | 1205 | 0.065 | 5,000 |
| NACZF222M10V16X17TR15T2F | 2200 | | 0.21 | 1690 | 0.043 | 5,000 |
| NACZF332M10V18X17TR13T2F | 3300 | | 0.23 | 2000 | 0.038 | 5,000 |
| NACZF472M10V18X22TR13T2F | 4700 | | 0.25 | 2490 | 0.028 | 5,000 |
| NACZF682M10V18X22TR13T2F | 6800 | 16 | 0.29 | 2490 | 0.028 | 5,000 |
| NACZF102M16V16X17TR15T2F | 1000 | | 0.16 | 1690 | 0.043 | 5,000 |
| NACZF222M16V18X17TR13T2F | 2200 | | 0.18 | 2000 | 0.038 | 5,000 |
| NACZF332M16V18X22TR13T2F | 3300 | | 0.20 | 2490 | 0.028 | 5,000 |
| NACZF471M25V12.5X17TR13T2F | 470 | 25 | 0.14 | 1205 | 0.065 | 5,000 |
| NACZF102M25V18X17TR13T2F | 1000 | | 0.14 | 2000 | 0.038 | 5,000 |
| NACZF222M25V18X22TR13T2F | 2200 | | 0.16 | 2490 | 0.028 | 5,000 |
| NACZF332M25V18X22TR13T2F | 3300 | | 0.18 | 2490 | 0.028 | 5,000 |
| NACZF331M35V12.5X17TR13T2F | 330 | 35 | 0.12 | 1205 | 0.065 | 5,000 |
| NACZF471M35V16X17TR15T2F | 470 | | 0.12 | 1690 | 0.043 | 5,000 |
| NACZF102M35V18X17TR13T2F | 1000 | | 0.12 | 2000 | 0.038 | 5,000 |
| NACZF222M35V18X22TR13T2F | 2200 | | 0.14 | 2490 | 0.028 | 5,000 |
| NACZF221M50V12.5X17TR13T2F | 220 | 50 | 0.10 | 1150 | 0.110 | 5,000 |
| NACZF331M50V16X17TR15T2F | 330 | | 0.10 | 1610 | 0.080 | 5,000 |
| NACZF471M50V18X17TR13T2F | 470 | | 0.10 | 1900 | 0.068 | 5,000 |
| NACZF102M50V18X22TR13T2F | 1000 | | 0.10 | 2420 | 0.042 | 5,000 |
| NACZF680M63V12.5X17TR13T2F | 68 | 63 | 0.08 | 1020 | 0.150 | 5,000 |
| NACZF101M63V12.5X17TR13T2F | 100 | | 0.08 | 1020 | 0.150 | 5,000 |
| NACZF221M63V16X17TR15T2F | 220 | | 0.08 | 1410 | 0.090 | 5,000 |
| NACZF331M63V18X17TR13T2F | 330 | | 0.08 | 1690 | 0.086 | 5,000 |
| NACZF471M63V18X22TR13T2F | 470 | | 0.08 | 2290 | 0.055 | 5,000 |
| NACZF470M100V12.5X17TR13T2F | 47 | 100 | 0.07 | 511 | 0.300 | 5,000 |
| NACZF680M100V12.5X17TR13T2F | 68 | | 0.07 | 511 | 0.300 | 5,000 |
| NACZF101M100V16X17TR15T2F | 100 | | 0.07 | 793 | 0.180 | 5,000 |
| NACZF221M100V18X17TR13T2F | 220 | | 0.07 | 917 | 0.155 | 5,000 |
| NACZF331M100V18X22TR13T2F | 330 | | 0.07 | 1230 | 0.083 | 5,000 |

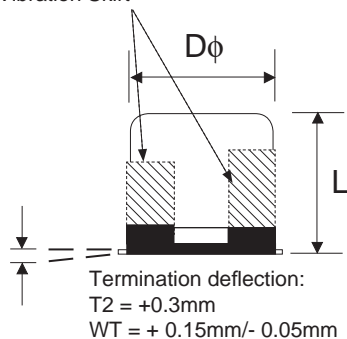
Available for Automotive Equipment, see part numbering system

*See part numbering system for how to denote WT termination style

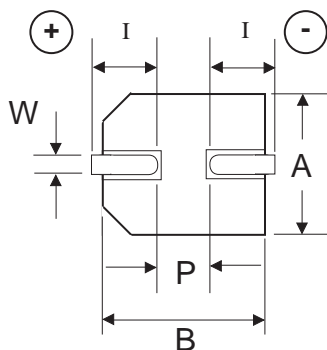
DIMENSIONS (mm)

| Case Size | Dφ ±0.5 | L max. | A ±0.2 | B ±0.2 | I typical | W | P typical | R | S | T |
|-------------|---------|--------|----------|----------|-----------|-----------|-----------|-----|------|-----|
| 12.5 x 17T2 | 12.5 | 17.0 | 13.5 | 13.5 | 4.7 | 0.6 ~ 1.2 | 4.4 | - | - | - |
| 12.5 x 17WT | 12.5 | 17.3 | 13.5 | 13.5 | 4.7 | 0.9 ~ 1.5 | 4.4 | 2.2 | 7.1 | 2.4 |
| 16 x 17T2 | 16.0 | 17.0 | 16.7±0.6 | 16.7±0.6 | 5.2 | 0.9 ~ 2.1 | 6.8 | - | - | - |
| 16 x 17WT | 16.0 | 17.5 | 17.0 | 17.0 | 5.5 | 1.2 ~ 2.1 | 6.8 | 3.0 | 9.0 | 1.9 |
| 16 x 22T2 | 16.0 | 22.0 | 17.0 | 17.0 | 5.5 | 0.9 ~ 1.5 | 6.7 | - | - | - |
| 16 x 22WT | 16.0 | 22.3 | 17.0 | 17.0 | 5.5 | 1.2 ~ 1.6 | 6.7 | 3.0 | 9.0 | 1.9 |
| 18 x 17T2 | 18.0 | 17.0 | 19.0 | 19.0 | 6.7 | 0.9 ~ 1.5 | 6.7 | - | - | - |
| 18 x 17WT | 18.0 | 17.3 | 19.0 | 19.0 | 6.7 | 1.2 ~ 1.6 | 6.7 | 3.0 | 11.0 | 1.9 |
| 18 x 22T2 | 18.0 | 22.0 | 19.0 | 19.0 | 6.7 | 0.9 ~ 1.5 | 6.7 | - | - | - |
| 18 x 22WT | 18.0 | 22.3 | 19.0 | 19.0 | 6.7 | 1.2 ~ 1.6 | 6.7 | 3.0 | 11.0 | 1.9 |

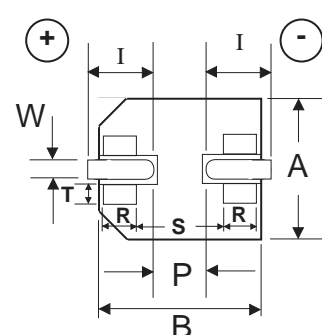
Anti-Vibration Skirt



T2 STYLE



WT STYLE



Surface Mount Aluminum Electrolytic Capacitors NACZF Series

CARRIER TAPE

| Case Size | A ±0.5 | B ±0.2 | C ±0.3 | D ±0.1 | P ±0.1 | T ±0.2 |
|-------------|--------|--------|--------|--------|---------------|--------|
| 12.5 x 17T2 | 14.0 | 14.0 | 32.0 | 14.2 | 24.0 | 17.5 |
| 12.5 x 17WT | 14.0 | 14.0 | 32.0 | 14.2 | 24.0 | 17.5 |
| 16 x 17T2 | 17.5 | 17.5 | 44.0 | 20.2 | 28.0 | 17.5 |
| 16 x 17WT | 17.5 | 17.5 | 44.0 | 20.2 | 28.0 | 17.5 |
| 16 x 22T2 | 17.5 | 17.5 | 44.0 | 20.2 | 28.0 | 22.5 |
| 16 x 22WT | 17.5 | 17.5 | 44.0 | 20.2 | 28.0 | 22.5 |
| 18 x 17T2 | 19.5 | 19.5 | 44.0 | 20.2 | 32.0 | 17.5 |
| 18 x 17WT | 19.5 | 19.5 | 44.0 | 20.2 | 32.0 <td 17.5 | |
| 18 x 22T2 | 19.5 | 19.5 | 44.0 | 20.2 | 32.0 | 22.5 |
| 18 x 22WT | 19.5 | 19.5 | 44.0 | 20.2 | 32.0 | 22.5 |

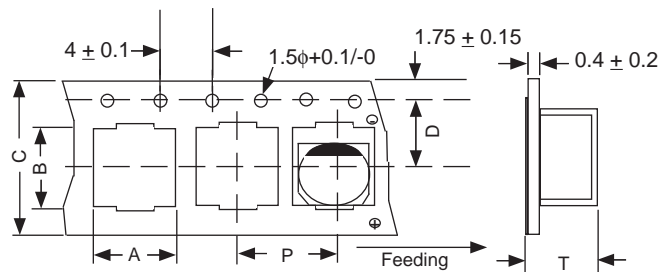
TR13 330mm (13") REEL TR15 380mm (15") REEL

| Case Size | W ±1.0 | Quantity Per Reel | |
|-----------|--------|-------------------|----------|
| | | 13" Reel | 15" Reel |
| 12.5 x 17 | 34.0 | 150 pcs | N/A |
| 16 x 17 | 46.0 | N/A | 200 pcs |
| 16 x 22 | 46.0 | 75 pcs | N/A |
| 18 x 17 | 46.0 | 125 pcs | N/A |
| 18 x 22 | 46.0 | 75 pcs | N/A |

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

