

Surface Mount Aluminum Electrolytic Capacitors NACEN Series

FEATURES

- CYLINDRICAL V-CHIP CONSTRUCTION FOR SURFACE MOUNTING
- NON-POLARIZED, 2000 HOURS AT 85°C
- 5.5mm HEIGHT
- DESIGNED FOR REFLOW SOLDERING

**RoHS
Compliant**
includes all homogeneous materials



*See Part Number System for Details

CHARACTERISTICS

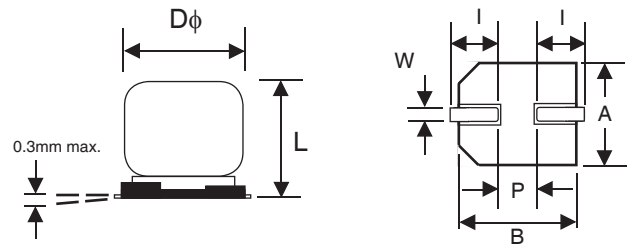
| | | | | | | | |
|--|---------------------------|--|------|------|------|------|------|
| Rated Voltage Rating | 6.3 ~ 50Vdc | | | | | | |
| Rated Capacitance Range | 1.0 ~ 47 μ F | | | | | | |
| Operating Temperature Range | -40° ~ +85°C | | | | | | |
| Capacitance Tolerance | \pm 20%(M) | | | | | | |
| Max. Leakage Current After 1 Minutes at 20°C | 0.03CV +6 μ A maximum | | | | | | |
| Max. Tan δ @ 120Hz/20°C | W.V. (Vdc) | 6.3 | 10 | 16 | 25 | 35 | 50 |
| | Tan δ @ 120Hz/20°C | 0.24 | 0.20 | 0.17 | 0.17 | 0.15 | 0.15 |
| Low Temperature Stability (Impedance Ratio @ 120Hz) | W.V. (Vdc) | 6.3 | 10 | 16 | 25 | 35 | 50 |
| | Z-40°C/Z +20°C | 4 | 3 | 2 | 2 | 2 | 2 |
| | Z-40°C/Z +20°C | 8 | 8 | 4 | 4 | 3 | 3 |
| Load Life Test at Rated W.V. 85°C 2,000 Hours (Reverse polarity every 500 hours) | Capacitance Change | Within \pm 25% of initial measured value | | | | | |
| | Tan δ | Less than 200% of specified value | | | | | |
| | Leakage Current | Less than specified value | | | | | |

STANDARD PRODUCT AND CASE SIZE TABLE DXL (mm)

| Cap. (μ F) | Code | Working Voltage (Vdc) | | | | | | |
|-----------------|------|-----------------------|---------|---------|---------|---------|---------|----------------|
| | | 6.3 | 10 | 16 | 25 | 35 | 50 | |
| 1.0 | 1R0 | - | - | - | - | - | - | 4x5.5 |
| 2.2 | 2R2 | - | - | - | - | - | - | 4x5.5 5x5.5 |
| 3.3 | 3R3 | - | - | - | 4x5.5 | 5x5.5 | 5x5.5 | 5x5.5 |
| 4.7 | 4R7 | - | - | 4x5.5 | 5x5.5* | 5x5.5 | 6.3x5.5 | 6.3x5.5 |
| 10 | 100 | - | 4x5.5 | 5x5.5 | 6.3x5.5 | 6.3x5.5 | 6.3x5.5 | 6.3x5.5 |
| 22 | 220 | 5x5.5 | 6.3x5.5 | 6.3x5.5 | - | - | - | - |
| 33 | 330 | 6.3x5.5 | 6.3x5.5 | 6.3x5.5 | - | - | - | - |
| 47 | 470 | 6.3x5.5 | - | - | - | - | - | - |

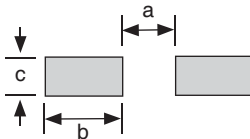
DIMENSIONS (mm)

| Case Size | D ϕ \pm 0.5 | L max. | A/B \pm 0.2 | I \pm 0.2 | W | P \pm 0.2 |
|-----------|--------------------|--------|---------------|-------------|-----------|-------------|
| 4x5.5 | 4.0 | 5.5 | 4.3 | 1.8 | 0.5 ~ 0.8 | 1.0 |
| 5x5.5 | 5.0 | 5.5 | 5.3 | 2.1 | 0.5 ~ 0.8 | 1.4 |
| 6.3x5.5 | 6.3 | 5.5 | 6.6 | 2.5 | 0.5 ~ 0.8 | 2.2 |



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 |



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

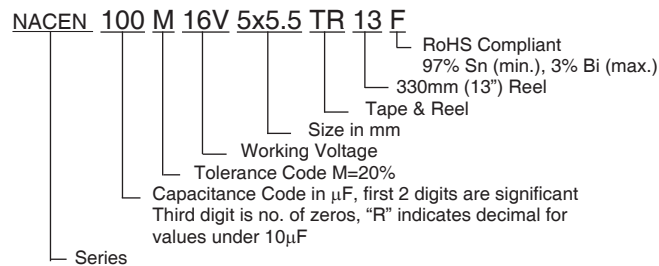


Surface Mount Aluminum Electrolytic Capacitors NACEN Series

STANDARD VALUES, CASE SIZES AND SPECIFICATIONS

| NIC Part Number | Cap. (μF) | W.V. (Vdc) | Dissipation Factor (Tan δ) | Max. Ripple Current (mA) +85°C/120Hz | Load Life Hours @ +85°C |
|---------------------------|-----------|------------|----------------------------|--------------------------------------|-------------------------|
| NACEN220M6.3V5X5.5TR13F | 22 | 6.3 | 0.24 | 31 | 2,000 |
| NACEN330M6.3V5X5.5TR13F | 33 | | 0.24 | 39 | 2,000 |
| NACEN470M6.3V6.3X5.5TR13F | 47 | | 0.24 | 47 | 2,000 |
| NACEN100M10V4X5.5TR13F | 10 | 10 | 0.20 | 17 | 2,000 |
| NACEN220M10V6.3X5.5TR13F | 22 | | 0.20 | 35 | 2,000 |
| NACEN330M10V6.3X5.5TR13F | 33 | | 0.20 | 43 | 2,000 |
| NACEN4R7M16V4X5.5TR13F | 4.7 | 16 | 0.17 | 12 | 2,000 |
| NACEN100M16V5X5.5TR13F | 10 | | 0.17 | 25 | 2,000 |
| NACEN220M16V6.3X5.5TR13F | 22 | | 0.17 | 39 | 2,000 |
| NACEN330M16V6.3X5.5TR13F | 33 | | 0.17 | 57 | 2,000 |
| NACEN3R3M25V4X5.5TR13F | 3.3 | 25 | 0.17 | 10 | 2,000 |
| NACEN4R7M25V5X5.5TR13F | 4.7 | | 0.17 | 19 | 2,000 |
| NACEN100M25V6.3X5.5TR13F | 10 | | 0.17 | 28 | 2,000 |
| NACEN2R2M35V4X5.5TR13F | 2.2 | 35 | 0.15 | 8.4 | 2,000 |
| NACEN3R3M35V5X5.5TR13F | 3.3 | | 0.15 | 17 | 2,000 |
| NACEN4R7M35V5X5.5TR13F | 4.7 | | 0.15 | 20 | 2,000 |
| NACEN100M35V6.3X5.5TR13F | 10 | | 0.15 | 30 | 2,000 |
| NACEN1R0M50V4X5.5TR13F | 1.0 | 50 | 0.15 | 10 | 2,000 |
| NACEN2R2M50V5X5.5TR13F | 2.2 | | 0.15 | 15 | 2,000 |
| NACEN3R3M50V5X5.5TR13F | 3.3 | | 0.15 | 18 | 2,000 |
| NACEN4R7M50V6.3X5.5TR13F | 4.7 | | 0.15 | 23 | 2,000 |
| NACEN100M50V6.3X5.5TR13F | 10 | | 0.15 | 23 | 2,000 |

PART NUMBER SYSTEM



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CARRIER TAPE

| Case Size | A ±0.5 | B ±0.2 | C ±0.3 | D ±0.1 | P ±0.1 | T ±0.2 |
|-----------|--------|--------|--------|--------|--------|--------|
| 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 |

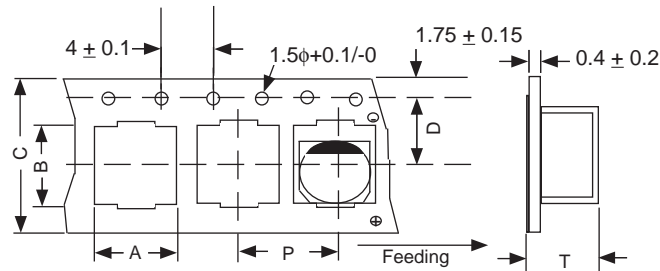
TR13 330mm (13") REEL TR15 380mm (15") REEL

| Case Size | W ±1.0 | Quantity Per Reel | |
|-----------|--------|-------------------|-----------|
| | | 13" Reel | 15" Reel |
| 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 |

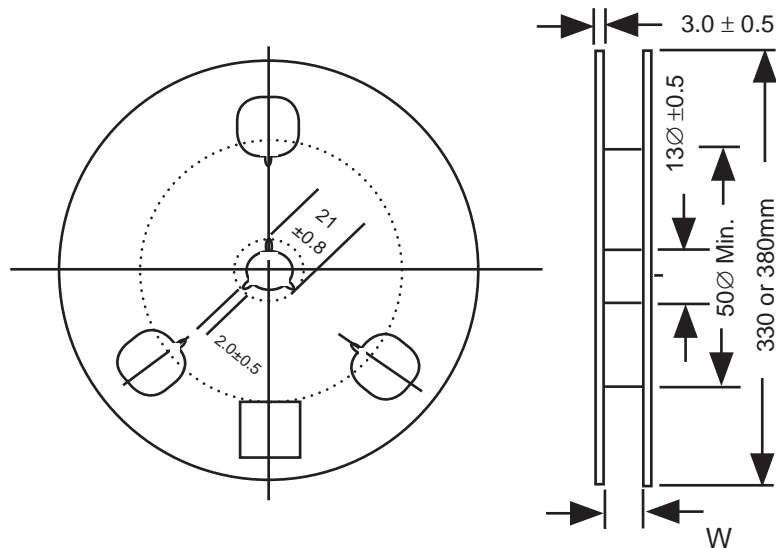
TAPING SPECIFICATIONS (mm)

- 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



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[NMC0603NPO0R6B50TRPF](#) [NMC0603NPO270J100TRPF](#) [NMC1206X5R226K6.3TRPLP2KF](#) [NRE-S100M25V4X7F](#) [NRE-
HS102M25V12.5X16F](#) [NRC-S06F2212TRF](#) [NCD180J1KVNPOJTRF](#) [NRC-S06F1692TRF](#) [NMC-P1206X7R104K100TRPF](#) [NMC-
H1206NPO471K1KVTRPLPF](#) [NML04J9N1TRF](#) [NRSNA4I4J150TR40KF](#) [NCC0805F261HTRF](#) [NRWA470M35V6.3X11TBF](#)
[NACE221M16V6.3X8TR13F](#) [NRSS332M50V18X35.5F](#) [NDTM106K25F1TRF](#) [NCM15X7R103K50F](#) [NCD103M1KVZ5UF](#)
[NRSS682M25V18X35.5F](#) [NEXC224Z5.5V10.5X8.5TRF](#) [NRLRW221M450V30X35SF](#) [NDTM225K50F2TRF](#) [NRSZ471M50V12.5X20F](#)
[NTCL106K35TRDF](#) [NRWA331M25V10X12.5F](#) [NRSY472M25V16X31.5F](#) [NEXS105Z5.5V28.5X14F](#) [NRLR181M400V25X30SF](#)
[NRSZ102M25V12.5X20F](#) [NUVA33T385TRF](#) [NUVA33V405TRF](#) [NRLMW331M250V30X25F](#) [NRLF103M25V35X20F](#)
[NRLMW682M50V30X40F](#) [NDTM106K35F](#) [NRLMW102M200V35X35F](#) [NPIS43LS220MTRF](#) [NDTM476K35F2F](#) [NTC-T475K50TRDF](#)
[NCD222M1KVZ5UKF](#) [NRLR472M63V25X40SF](#) [NTP157M10TRD\(40\)F](#) [NPIM74C3R3MTRF](#) [NPI104C100MTRF](#)
[NRLM102M100V25X25F](#) [NACZ331M35V10X10.5TR13F](#) [NRLM223M50V 35X50F](#) [NAZT221M50V10X10.5LBF](#) [NACK102M10V
10X10.5TR13F](#)