

Non-Polar Aluminum Electrolytic Capacitors

NSRN Series

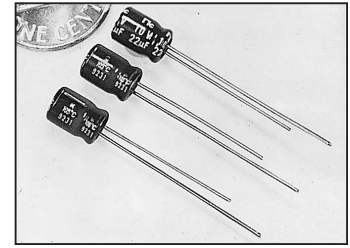
LOW PROFILE, SUB-MINIATURE, RADIAL LEADS,
NON-POLAR ALUMINUM ELECTROLYTIC

FEATURES

- BI-POLAR
- 5mm HEIGHT / LOW PROFILE

CHARACTERISTICS

| | | | | | | | |
|--|--------------------|--|------|------|------|------|------|
| Rated Voltage Range | 6.3 ~ 50Vdc | | | | | | |
| Capacitance Range | 4.7 ~ 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 | | | | | | |
| Surge Voltage & Max. Tan δ @ 120Hz/+20°C | W.V. (Vdc) | 6.3 | 10 | 16 | 25 | 35 | 50 |
| | S.V. (Vdc) | 8 | 13 | 20 | 32 | 44 | 63 |
| | Tan δ | 0.24 | 0.22 | 0.20 | 0.20 | 0.20 | 0.18 |
| Low Temperature Stability (Impedance Ratio @ 120Hz) | Z-25°C/Z+20°C | 4 | 3 | 2 | 2 | 2 | 2 |
| | Z-40°C/Z+20°C | 8 | 6 | 4 | 4 | 3 | 3 |
| Load Life Test at Rated W.V. & +85°C 1,000 Hours (Polarity Shall Be Reversed Every 250 Hours) | Capacitance Change | Within \pm 25% of initial measured value | | | | | |
| | Tan δ | Less than 200% of specified maximum value | | | | | |
| | Leakage Current | Less than specified maximum value | | | | | |



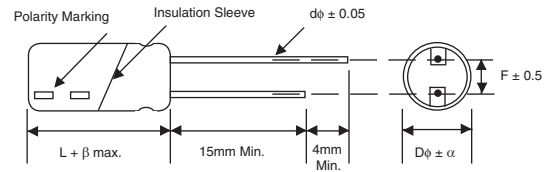
STANDARD PRODUCT AND CASE SIZE TABLE D ϕ x L (mm)

| Cap. (μ F) | Code | Working Voltage (Vdc) | | | | | |
|-----------------|------|-----------------------|-------|-------|-------|-------|-------|
| | | 6.3 | 10 | 16 | 25 | 35 | 50 |
| 4.7 | 4R7 | - | - | - | - | - | 6.3x5 |
| 10 | 100 | - | - | - | 6.3x5 | 6.3x5 | - |
| 22 | 220 | - | 6.3x5 | 6.3x5 | - | - | - |
| 33 | 330 | 6.3x5 | 6.3x5 | 6.3x5 | - | - | - |
| 47 | 470 | 6.3x5 | - | - | - | - | - |

LEAD SPACING AND DIAMETER (mm)

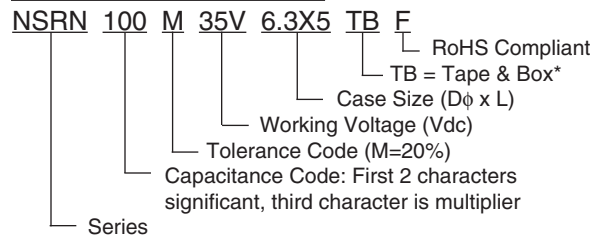
| Case Dia. (D ϕ) | 4 | 5 | 6.3 |
|-----------------------|------|------|------|
| Lead Dia. (d ϕ) | 0.45 | 0.45 | 0.45 |
| Lead Space (F) | 1.5 | 2.0 | 2.5 |

DIMENSIONS (mm)



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

PART NUMBER SYSTEM



*see taping specifications for details

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



STANDARD PRODUCT, SPECIFICATIONS AND CASE SIZES D ϕ x L (mm)

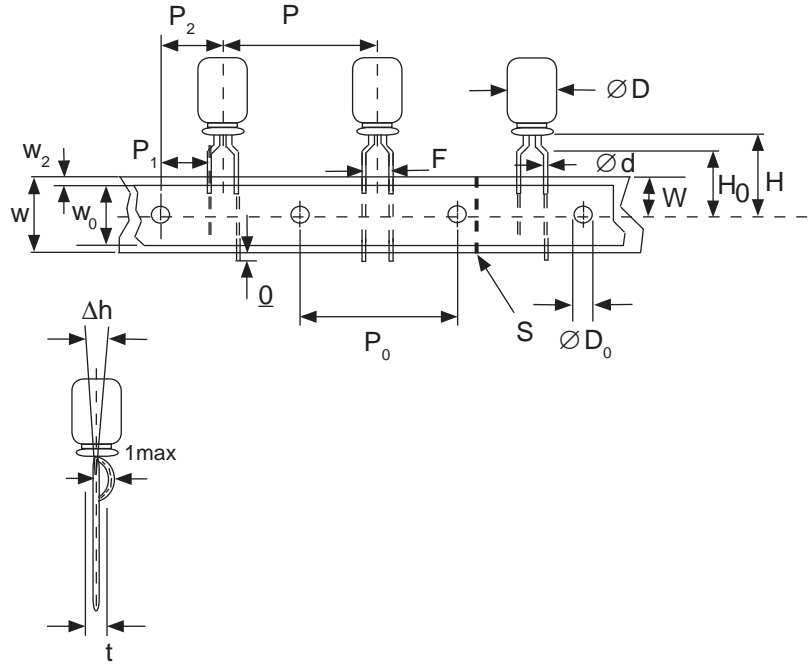
| Part Number | Cap. (μ F) | W.V. (Vdc) | Dissipation Factor +20°C/120Hz | Ripple Current Rating (mA) +85°C/120Hz | Max. ESR (Ω) +20°C/120Hz | Load Life Hours @ +85°C |
|--------------------|-----------------|------------|-----------------------------------|---|--------------------------------------|----------------------------|
| NSRN330M6.3V6.3x5F | 33 | 6.3 | 0.24 | 37 | 12.1 | 1,000 |
| NSRN470M6.3V6.3x5F | 47 | | 0.24 | 45 | 8.47 | 1,000 |
| NSRN330M10V6.3x5F | 33 | 10 | 0.22 | 33 | 15.1 | 1,000 |
| NSRN470M10V6.3x5F | 47 | | 0.22 | 41 | 10.1 | 1,000 |
| NSRN220M16V6.3x5F | 22 | 16 | 0.20 | 37 | 12.8 | 1,000 |
| NSRN330M16V6.3x5F | 33 | | 0.20 | 49 | 8.05 | 1,000 |
| NSRN100M25V6.3x5F | 10 | 25 | 0.20 | 27 | 28.2 | 1,000 |
| NSRN100M35V6.3x5F | 10 | 35 | 0.20 | 29 | 24.9 | 1,000 |
| NSRN4R7M50V6.3x5F | 4.7 | 50 | 0.18 | 20 | 53.0 | 1,000 |

Miniature Aluminum Electrolytic Capacitors Taping Specifications

STANDARD RADIAL TAPING (5mm LEAD SPACING, FORMED LEADS) TB

Taping Dimensions (mm)

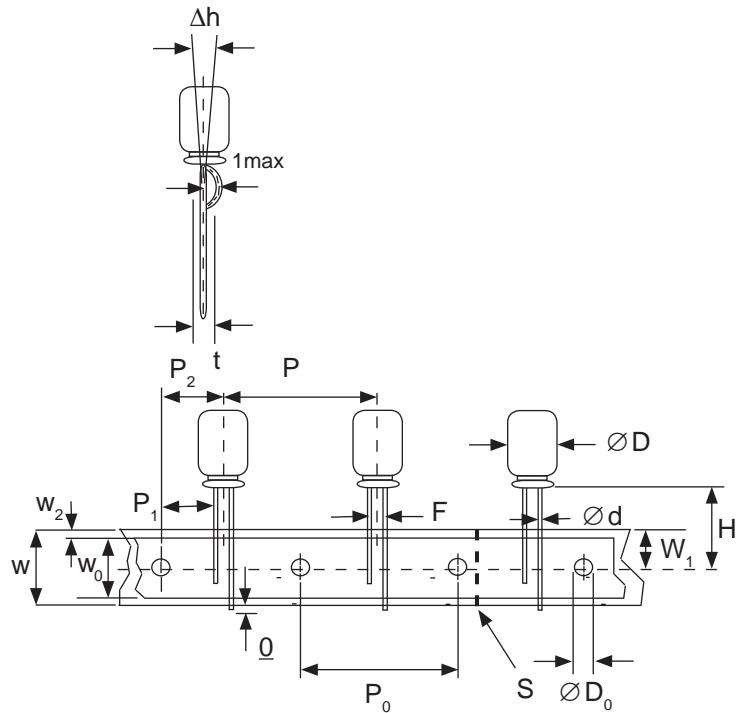
| Case Dia. (D ϕ) | 4 | 5 | 6.3 | 8 |
|-----------------------|------------------------------------|------------|------|------------------------------------|
| Case Size | 4x5 4x7 | 5x5 5x7 | 5x11 | 6.3x5 6.3x7 6.3x11 8x11.5 |
| d ϕ \pm 0.05 | 0.45 | 0.45 | 0.5 | 0.45 |
| H \pm 0.75 | 17.5 | 17.5 | 18.5 | 17.5 |
| F +0.8 ~ -0.2 | 5.0 -0.2 ~ +0.8 | | | |
| P | 12.7 \pm 1.0 | | | |
| P ₀ | 12.7 \pm 0.2 | | | |
| P ₁ | 3.85 \pm 0.5 (at end of tape) | | | |
| P ₂ | 6.35 \pm 1.0 | | | |
| W | 18.0 \pm 0.5 | | | |
| W ₀ | 11.5 min. | | | |
| W ₁ | 9.0 \pm 0.5 | | | |
| W ₂ | 0 ~ 2.5 | | | |
| H ₀ | 16.0 \pm 0.5 | | | |
| l | 1.0 max. | | | |
| D ₀ ϕ | 4.0 \pm 0.2 | | | |
| Δ h | 0 \pm 1.0 (at top of can) | | | |
| t | 0.7 \pm 0.2 (not including lead) | | | |



STANDARD RADIAL TAPING (5mm LEAD SPACING, STRAIGHT LEADS) TB

Taping Dimensions (mm)

| Case Dia. (D ϕ) | 10 | 12.5 |
|-----------------------|------------------------------------|------|
| Case Size | All | All |
| d ϕ \pm 0.05 | 0.6 | 0.6 |
| H \pm 0.75 | 19.0 | 19.0 |
| F +0.8 ~ -0.2 | 5.0 | 5.0 |
| P \pm 1.0 | 25.4* | |
| P ₀ | 12.7 \pm 0.2 | |
| P ₁ | 3.85 | |
| P ₂ | 6.35 \pm 1.0 | |
| W | 18.0 \pm 0.5 | |
| W ₀ | 11.5 min | |
| W ₁ | 9.0 \pm 0.5 | |
| W ₂ | 0 ~ 2.5 | |
| H ₀ | 16.0 \pm 0.5 | |
| l | 1.0 max. | |
| D ₀ ϕ | 4.0 \pm 0.2 | |
| Δ h | 0 \pm 1.0 (at top of can) | |
| t | 0.7 \pm 0.2 (not including lead) | |



*Optional Taping Specifications

10mm diameter available with P dim. = 12.7mm
(P/N Suffix: TB12.7MMP)

12.5mm diameter available with P dim. = 15mm, P₁ = 5.0mm,
P₀ = 15.0mm & P₂ = 7.5mm (P/N Suffix: TB15MMP)

NOTE: ANODE (+) LEAD FEEDS OFF FIRST.
FOR OPTION OF NEGATIVE (-) LEAD FIRST,
SPECIFY "TBN".

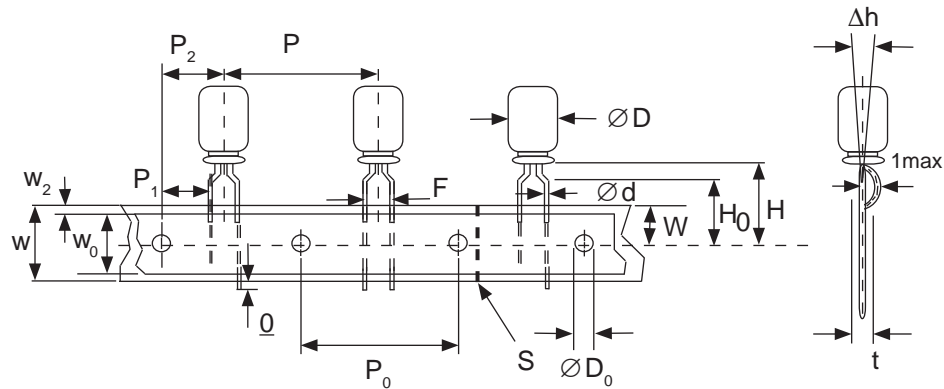


Miniature Aluminum Electrolytic Capacitors Taping Specifications

SPECIAL RADIAL TAPING (2.5mm LEAD SPACING, FORMED LEADS) TBF1

Taping Dimensions (mm)

| Case Dia. (D ϕ) | 4 | | 5 | |
|--------------------------|-----------------|------------|------|--|
| Case Size Dim. | 4x5 4x7 | 5x5 5x7 | 5x11 | |
| d ϕ \pm 0.05 | 0.45 | 0.45 | 0.5 | |
| H \pm 0.75 | 17.5 | 17.5 | 18.5 | |
| H ₀ \pm 0.5 | 16.0 | - | - | |
| F | 2.5 -0.2 ~ +0.8 | | | |
| P | 12.7 \pm 1.0 | | | |
| P ₀ | 12.7 \pm 0.2 | | | |
| P ₁ | 5.1 \pm 0.5 | | | |
| P ₂ | 6.35 \pm 1.0 | | | |
| W | 18.0 \pm 0.5 | | | |
| W ₀ | 11.5 min. | | | |
| W ₁ | 9.0 \pm 0.5 | | | |
| W ₂ | 0 ~ 1.5 | | | |
| l | 1.0 max. | | | |
| D ₀ ϕ | 4.0 \pm 0.2 | | | |
| Δ h | 0 \pm 1.0 | | | |
| t | 0.7 \pm 0.2 | | | |

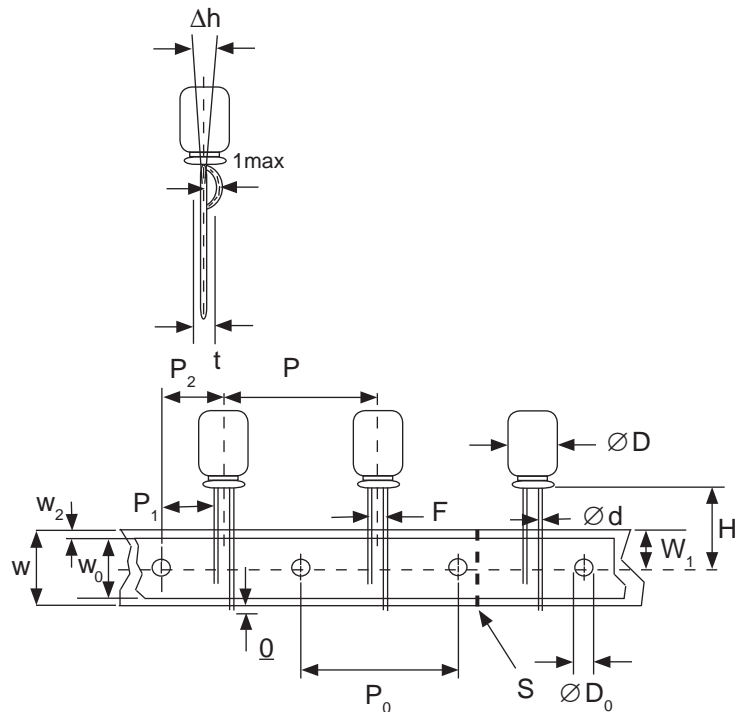


SPECIAL STRAIGHT LEAD TAPING TBST

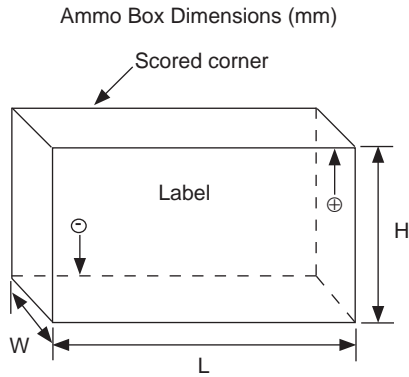
Taping Dimensions (mm)

| Case Dia. (D ϕ) | 4 | | | 5 | | | 6.3 | | 8 | |
|-----------------------|------------------------------------|------------|------|-----|----------------|--------|--------|--|---|--|
| Case Size Dim. | 4x5 4x7 | 5x5 5x7 | 5x11 | | 6.3x5 6.3x7 | 6.3x11 | 8x11.5 | | | |
| d ϕ \pm 0.05 | 0.45 | 0.45 | 0.5 | | 0.45 | 0.5 | 0.6 | | | |
| H \pm 0.75 | 17.5 | 17.5 | 18.5 | | 17.5 | 18.5 | 20.0 | | | |
| F +0.8 ~ -0.2 | 2.0* | 2.0 | 2.0 | | 2.5 | 2.5 | 3.5 | | | |
| P \pm 1.0 | 12.7 \pm 0.2 | | | | | | | | | |
| P ₀ | 12.7 \pm 0.2 | | | | | | | | | |
| P ₁ | 5.1 | 5.1 | 5.1 | 5.1 | 5.1 | 5.1 | 4.6 | | | |
| P ₂ | 6.35 \pm 1.0 | | | | | | | | | |
| W | 18.0 \pm 0.5 | | | | | | | | | |
| W ₀ | 11.5 min. | | | | | | | | | |
| W ₁ | 9.0 \pm 0.5 | | | | | | | | | |
| W ₂ | 0 ~ 2.5 | | | | | | | | | |
| H ₀ | 16.0 \pm 0.5 | | | | | | | | | |
| l | 1.0 max. | | | | | | | | | |
| D ₀ ϕ | 4.0 \pm 0.2 | | | | | | | | | |
| Δ h | 0 \pm 1.0 (at top of can) | | | | | | | | | |
| t | 0.7 \pm 0.2 (not including lead) | | | | | | | | | |

* Parts with 4mm diameter are taped with a slight flare in the lead and a 2.0mm lead-space.



RADIAL TAPED PACKAGING



Ammo Box (Tape & Box) TB, TBF1, TBST

Size of box and component quantity

| Case Dia (D ϕ) or Case Size | Q'ty per Box (pcs) | Dim. L | Dim. H | Dim. W |
|-----------------------------------|--------------------|--------|--------|--------|
| 4x5, 4x7 | 2,000 | 331 | 175 | 43 |
| 5x5, 5x7 | 2,000 | 331 | 220 | 43 |
| 5x11 | 2,000 | 340 | 255 | 55 |
| 6.3x5, 6.3x7 | 2,000 | 331 | 280 | 43 |
| 6.3x11 | 2,000 | 331 | 280 | 48 |
| 8x11.5, 8x12.5 | 1,000 | 335 | 235 | 53 |
| 10x12.5* | 500 | 335 | 190 | 53 |
| 10x16* | 500 | 335 | 300 | 53 |
| 10x20* | 500 | 335 | 300 | 55 |
| 12.x20* | 500 | 335 | 300 | 55 |
| 12.5x25* | 500 | 335 | 300 | 61 |

*Special Taping Consult Factory For Availability