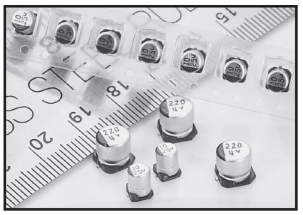
# NSPE-TJ Series
## Hybrid Mount Aluminum Eectrolytic Capacitors

AEC-Q200 QUALIFIED | 9001:2015 CERTIFIED | ROHS/REACH COMPLIANT HALOGEN FREE | NIC Components Corp.

### FEATURES
- -55°C TO +125°C OPERATING RANGE
- MEETS THE REQUIREMENTS OF AEC-Q200*
- HIGH RIPPLE CURRENT RATING AT HIGH TEMPERATURE
- EXTENDED LIFETIME: 4000 HOURS @ +125°C
- CASE SIZES 6.3x6.1mm ~ 10x12.5mm
- 'W' WIDE TERMINAL OPTION FOR HIGH VIBRATION APPLICATIONS 8mm & 10mm DIAMETER SIZES

*Contact NIC for supporting test data

**Available with Wide Anti-Vibration Terminations**



### CHARACTERISTICS

| | | | | | | |
|---|---|---|---|---|---|---|
| Rated Voltage Range | 25 ~ 80VDC | | | | | |
| Rated Capacitance Range | 22 ~ 470µF | | | | | |
| Operating Temp. Range | -55 ~ +125°C | | | | | |
| Capacitance Tolerance | ±20% (M) | | | | | |
| Max. Leakage Current After 2 Minutes @ 20°C | 0.01CV | | | | | |
| Working Voltage & Surge Voltage Ratings | W.V. (Vdc) | 25 | 35 | 50 | 63 | 80 |
| | S.V. (Vdc) | 32 | 44 | 63 | 79 | 100 |
| Tan δ @ 120Hz/20°C | | 0.14 | 0.12 | 0.10 | 0.08 | 0.08 |
| Temperature Stability Impedance Ratio @ 120Hz | Z -55°C/Z +20°C | 1.0 ~ 2.5 | | | | |
| | Z +125°C/Z +20°C | 0.6 ~ 1.0 | | | | |
| Load Life Test at W.V. @ 125°C All Case Sizes: 4,000 Hours | Capacitance Change | Within ±30% of initial measured value | | | | |
| | ESR, Tan δ | Less than 200% of specified max. value | | | | |
| | Leakage Current | Less than specified max. value | | | | |

### STANDARD PRODUCT AND CASE SIZE Dϕ xL (mm)

| Cap.(µF) | Code | Working Voltage (Vdc) | | | | |
|---|---|---|---|---|---|---|
| | | 25 | 35 | 50 | 63 | 80 |
| 22 | 220 | - | - | - | - | 8x10.5 |
| 33 | 330 | - | - | - | - | 8x10.5 |
| | | | | | | 10x10.5 |
| 39 | 390 | - | - | - | - | 10x12.5 |
| 47 | 470 | - | 6.3x6.1 | - | 8x10.5 | - |
| 56 | 560 | 6.3x6.1 | - | - | - | 10x10.5 |
| 68 | 680 | - | 6.3x8 | 8x10.5 | - | 10x12.5 |
| 82 | 820 | - | - | 8x10.5 | 10x10.5 | - |
| 100 | 101 | 6.3x8 | - | - | 10x12.5 | - |
| 120 | 121 | - | - | 10x10.5 | - | - |
| 150 | 151 | - | 8x10.5 | 10x10.5 | - | - |
| | | | | 10x12.5 | | |
| 180 | 181 | - | - | 10x12.5 | | |
| 220 | 221 | 8x10.5 | - | - | - | - |
| 270 | 271 | - | 10x10.5 | - | - | - |
| 330 | 331 | 10x10.5 | 10x12.5 | - | - | - |
| 470 | 471 | 10x12.5 | - | - | - | - |

### PART NUMBER SYSTEM

NSPE-TJ 331 M 25V 10x10.5 N LB W Y F

- NSPE-TJ — Series
- 331 — Capacitance Code in µF, first 2 digits are significant. Third digit is no. of zeros.
- M — Tolerance Code M=20%
- 25V — Working Voltage
- 10x10.5 — Size in mm
- N — Reflow Temp. Code (N=+260°C)
- LB — LB = Sn-Bi Finish and 15" Reel
- W — Wide Termination Option
- Y — Suitable for automotive equipment, sourced to special production and inspection at IATF-16949 certified production site
- F — RoHS Compliant

| Termination & Packaging Code |
|---|
| LB = Sn-Bi / 15" reel |

| Reflow Code |
|---|
| N = +260°C |



NIC Components Corp.
100 Baylis Road. Melville, NY 11747



Last Updated 2/6/2025. Specification subject to change without notice. Please check web site for latest information.

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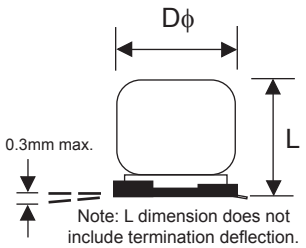
AEC-Q200 QUALIFIED | 9001:2015 CERTIFIED | ROHS/REACH COMPLIANT HALOGEN FREE | NIC Components Corp.

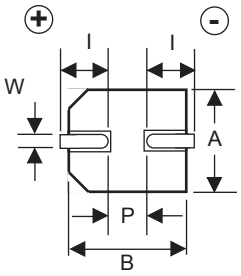
### STANDARD VALUES, CASE SIZES & SPECIFICATIONS

| Part Number | Cap. (µF) | Working Voltage | Dissipation Factor @120Hz/+20°C | Max. ESR (Ω) AT 100KHz/+20°C | Max. Ripple Current (mA rms) AT 100KHz/+125°C | Load Life Hours @ +125°C |
|---|---|---|---|---|---|---|
| NSPE-TJ560M25V6.3x6.1NLBYF | 56 | 25V | 0.14 | 0.050 | 1400 | 4000 |
| NSPE-TJ101M25V6.3x8NLBYF | 100 | | 0.14 | 0.030 | 2100 | 4000 |
| NSPE-TJ221M25V8x10.5NLBYF | 220 | | 0.14 | 0.027 | 2900 | 4000 |
| NSPE-TJ331M25V10X10.5NLBYF | 330 | | 0.14 | 0.020 | 3300 | 4000 |
| NSPE-TJ471M25V10X12.5NLBYF | 470 | | 0.14 | 0.016 | 3800 | 4000 |
| NSPE-TJ470M35V6.3x6.1NLBYF | 47 | 35V | 0.12 | 0.060 | 1400 | 4000 |
| NSPE-TJ680M35V6.3x8NLBYF | 68 | | 0.12 | 0.035 | 2100 | 4000 |
| NSPE-TJ151M35V8x10.5NLBYF | 150 | | 0.12 | 0.027 | 2900 | 4000 |
| NSPE-TJ271M35V10x10.5NLBYF | 270 | | 0.12 | 0.020 | 3300 | 4000 |
| NSPE-TJ331M35V10X12.5NLBYF | 330 | | 0.12 | 0.017 | 3800 | 4000 |
| NSPE-TJ680M50V8x10.5NLBYF | 68 | 50V | 0.10 | 0.030 | 2300 | 4000 |
| NSPE-TJ820M50V8X10.5NLBYF | 82 | | 0.10 | 0.030 | 2300 | 4000 |
| NSPE-TJ121M50V10x10.5NLBYF | 120 | | 0.10 | 0.028 | 2700 | 4000 |
| NSPE-TJ151M50V10X10.5NLBYF | 150 | | 0.10 | 0.028 | 2700 | 4000 |
| NSPE-TJ151M50V10X12.5NLBYF | 150 | | 0.10 | 0.019 | 3500 | 4000 |
| NSPE-TJ181M50V10X12.5NLBYF | 180 | | 0.10 | 0.019 | 3500 | 4000 |
| NSPE-TJ470M63V8x10.5NLBYF | 47 | 63V | 0.08 | 0.040 | 2100 | 4000 |
| NSPE-TJ820M63V10x10.5NLBYF | 82 | | 0.08 | 0.030 | 2600 | 4000 |
| NSPE-TJ101M63V10X12.5NLBYF | 100 | | 0.08 | 0.022 | 3400 | 4000 |
| NSPE-TJ220M80V8x10.5NLBYF | 22 | 80V | 0.08 | 0.045 | 2000 | 4000 |
| NSPE-TJ330M80V8X10.5NLBYF | 33 | | 0.08 | 0.045 | 2000 | 4000 |
| NSPE-TJ330M80V10x10.5NLBYF | 33 | | 0.08 | 0.036 | 2550 | 4000 |
| NSPE-TJ390M80V10X12.5NLBYF | 39 | | 0.08 | 0.032 | 3000 | 4000 |
| NSPE-TJ560M80V10X10.5NLBYF | 56 | | 0.08 | 0.036 | 2550 | 4000 |
| NSPE-TJ680M80V10X12.5NLBYF | 68 | | 0.08 | 0.032 | 3000 | 4000 |

### DIMENSIONS (mm)

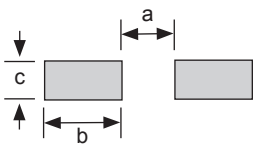
| Case Size | Dϕ ±0.5 | L max. | A, B ±0.2 | (I) | (P) | W |
|---|---|---|---|---|---|---|
| 6.3x6.1 | 6.3 | 6.1 | 6.6 | 2.6 | 2.2 | 0.5 ~ 0.8 |
| 6.3x8 | 6.3 | 8.0 | 6.6 | 2.6 | 2.2 | 0.5 ~ 0.8 |
| 8x10.5 | 8.0 | 10.5 | 8.3 | 2.9 | 3.2 | 0.7 ~ 1.0 |
| 10x10.5 | 10.0 | 10.5 | 10.3 | 3.2 | 4.6 | 1.0 ~ 1.4 |
| 10x12.5 | 10.0 | 12.5 | 10.3 | 3.2 | 4.6 | 1.0 ~ 1.4 |



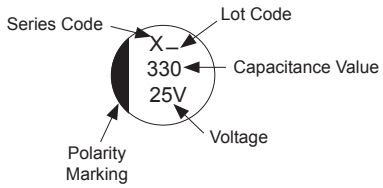




### LAND PATTERN DIMENSIONS (mm)

| Case Size | a | b | c |
|---|---|---|---|
| 6.3x6.1 | 1.8 | 3.6 | 1.8 |
| 6.3x8 | 1.8 | 3.6 | 1.8 |
| 8x10.5 | 2.8 | 4.1 | 2.1 |
| 10x10.5 | 4.3 | 4.4 | 2.5 |
| 10x12.5 | 4.3 | 4.4 | 2.5 |




**Part Marking**




**PRECAUTIONS**

Please review the notes on correct use, safety and precautions found at
**https://www.niccomp.com/resource/files/aluminum/AlumApplInfoCautions.pdf**
If in doubt or uncertainty, please review your specific application - process details with NIC's technical support personnel: **tpmg@niccomp.com**

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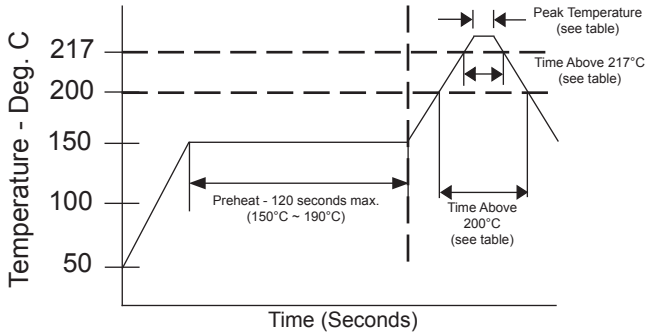
### 25V ~ 50V PEAK REFLOW TEMPERATURES AND DURATION

| Diameter | Peak Temperature | Time above +200°C | Time above +217°C | Time above +230°C | Number of Reflow Cycles |
|---|---|---|---|---|---|
| ϕ6.3 | +260°C | Within 70 sec. | Within 40 sec. | Within 30 sec. | 2 |
| ϕ8.0 & ϕ10mm | +260°C | Within 70 sec. | Within 40 sec. | Within 30 sec. | 1 |
| | +245°C | Within 70 sec. | Within 50 sec. | Within 40 sec. | 2 |

### 63V ~ 80V PEAK REFLOW TEMPERATURES AND DURATION

| Diameter | Peak Temperature | Time above +200°C | Time above +217°C | Time above +230°C | Number of Reflow Cycles |
|---|---|---|---|---|---|
| ϕ8.0 & ϕ10mm | +260°C | Within 70 sec. | Within 40 sec. | Within 30 sec. | 1 |
| | +245°C | Within 70 sec. | Within 40 sec. | Within 30 sec. | 2 |

Capacitors can withstand two reflow passes under the specified conditions when the peak temperature is +245°C. A one hour cooling period to room temperature is required before the second pass through the reflow process.

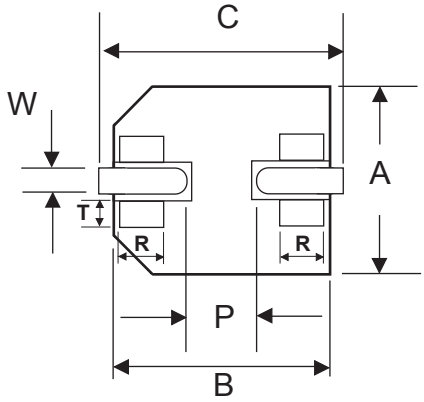


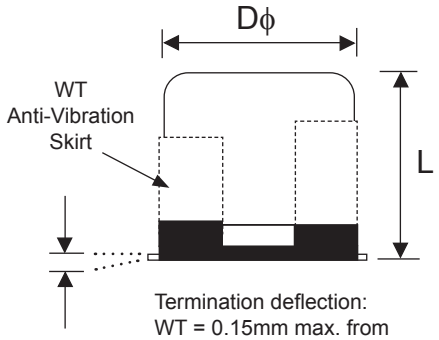

### W (WIDE TERMINATIONS) COMPONENT DIM. (mm)

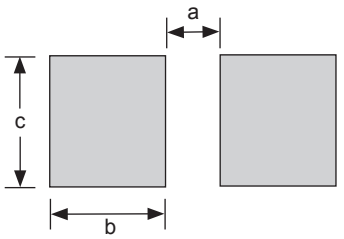
| Case Size | Dϕ ±0.5 | L | A, B ±0.2 | C ±0.2 | P | W | R | T |
|---|---|---|---|---|---|---|---|---|
| 8x10.5 | 8.0 | 10.7 ± 0.5 | 8.3 | 9.0 | (3.2) | 0.7 ~ 1.0 | (0.7) | (1.3) |
| 10x10.5 | 10.0 | 10.7 ± 0.5 | 10.3 | 11.0 | (4.6) | 1.0 ~ 1.4 | (0.7) | (1.3) |
| 10x12.5 | 10.0 | 12.5 ± 1.0 | 10.3 | 11.0 | (4.6) | 1.0 ~ 1.4 | (0.7) | (1.3) |

### W (WIDE TERMINATIONS) LAND PATTERN DIM. (mm)

| Case Size | a | b | c |
|---|---|---|---|
| 8x10.5 | 2.5 | 4.5 | 4.7 |
| 10x10.5 | 3.8 | 4.8 | 4.7 |
| 10x12.5 | 3.8 | 4.8 | 4.7 |



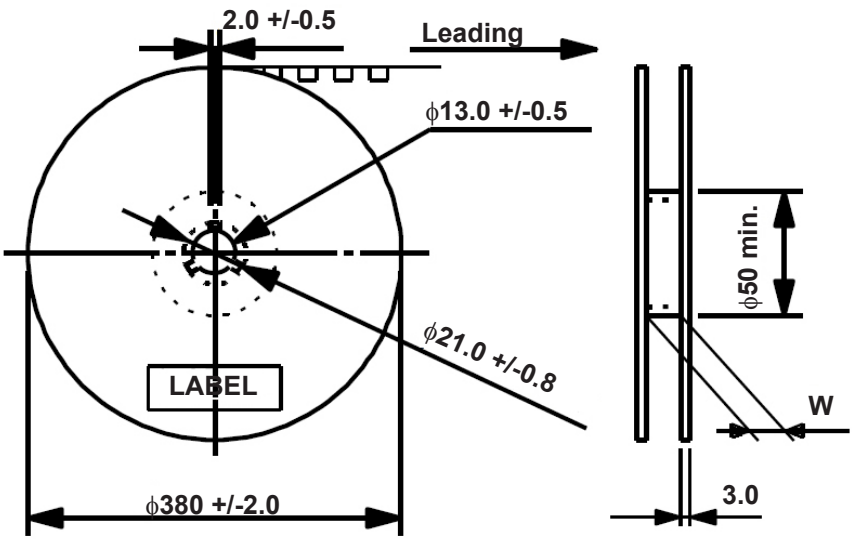




| W (Wide Terminations) Anti-Vibration Test | |
|---|---|
| Test Method | Direction: X, Y, Z axis<br>Frequency & Duration: 5 to 2000Hz reciprocation for 20 minutes, 2 hours total in each direction<br>Peak to Peak Amplitude: 5mm<br>Peak Acceleration: 30G<br>Sweep Type: Log<br>Thickness of Solder Paste: 0.20mm ± 0.03mm |
| Capacitance | During test measured value to be stabilized |
| Appearance | No remarkable abnormality |

## V-Chip 15" (380mm) Reels (LB suffix)

### Dimensions (mm)




### Reel Quantity

| Case Size | W $^{+3}$ / $_{-1}$ | Qty per Reel 15" (380mm) |
|---|---|---|
| 6.3x6.1 | 18 | 1000 |
| 6.3x8 | 18 | 900 |
| 8x10.5 | 26 | 500 |
| 10x10.5 | 26 | 500 |
| 10x12.5 | 26 | 400 |

### CARRIER TAPE

| Case Size | A ±0.2 | B ±0.2 | C ±0.3 | D ±0.1 | P ±0.1 | T ±0.2 | t max. |
|---|---|---|---|---|---|---|---|
| 6.3x6.1 | 7.0 | 7.0 | 16.0 | 7.5 | 12.0 | 6.5 | 0.6 |
| 6.3x8 | 7.0 | 7.0 | 16.0 | 7.5 | 12.0 | 8.2 | 0.6 |
| 8x10.5 | 8.7 | 8.7 | 24.0 | 11.5 | 16.0 | 11.1 | 0.6 |
| 10x10.5 | 10.7 | 10.7 | 24.0 | 11.5 | 16.0 | 11.2 | 0.6 |
| 10x12.5 | 10.7 | 10.7 | 24.0 | 11.5 | 16.0 | 13.3 | 0.6 |

### TAPING SPECIFICATIONS (mm)

1. Both Leader and Trailer tape: Minimum 10 empty carrier tape pockets.
2. Leader tape: Approximately 20cm of cover tape at leader.
3. Connection: Maximum 3 connections (slices) per reel.

### CARRIER

