

Issue Date: September 12, 2023

Subject: NAWE End of Life Notification (EOL)

Notification Type: End of Life (EOL)

Effected NIC Products: NAWE Series

Effective Date: September 12, 2023

Last Order Date: March 29, 2024

Last Ship Date: July 28, 2024

Description: Due to no market demand NIC has discontinued production of the NAWE series. Please refer to below table for full list of effected NIC part numbers and alternatives. For a complete list of part numbers in Excel: [Click here](#)

| EOL Part Number | Cap. | Voltage | Case Size | Possible Alternative | Comments |
|------------------------|------|---------|-----------|--------------------------|-------------|
| NAWE220M6.3V4X5.5NBF | 22 | 6.3 | 4X5.5 | NACX220M6.3V4X5.5TR15F | Larger reel |
| NAWE220M6.3V4X5.5NLBF | 22 | 6.3 | 4X5.5 | NACX220M6.3V4X5.5TR15F | |
| NAWE101M6.3V6.3X5.5NBF | 100 | 6.3 | 6.3X5.5 | NACX101M6.3V6.3x5.5TR13F | |
| NAWE471M6.3V8X10.5LBF | 470 | 6.3 | 8X10.5 | NACEW471M6.3V8X10.5TR15F | Larger reel |
| NAWE471M6.3V8X10.5LLBF | 470 | 6.3 | 8X10.5 | NACEW471M6.3V8X10.5TR15F | |
| NAWE100M16V4X5.5NBF | 10 | 16 | 4X5.5 | NACX100M16V4x5.5TR15F | Larger reel |
| NAWE100M16V4X5.5NLBF | 10 | 16 | 4X5.5 | NACX100M16V4x5.5TR15F | |
| NAWE220M16V5X5.5NBF | 22 | 16 | 5X5.5 | NACX220M16V5x5.5TR13F | |
| NAWE470M16V6.3X5.5NBF | 47 | 16 | 6.3X5.5 | NACX470M16V6.3x5.5TR13F | |
| NAWE101M16V6.3X5.5NBF | 100 | 16 | 6.3X5.5 | NACX101M16V6.3x5.5TR13F | |
| NAWE331M16V8X10.5LBF | 330 | 16 | 8X10.5 | NACEW331M16V8X10.5TR15F | Larger reel |
| NAWE331M16V8X10.5LLBF | 330 | 16 | 8X10.5 | NACEW331M16V8X10.5TR15F | |
| NAWE330M25V6.3X5.5NBF | 33 | 25 | 6.3X5.5 | NACX330M25V6.3x5.5TR13F | |
| NAWE221M25V8X10.5LBF | 220 | 25 | 8X10.5 | NACZ221M25V8X10.5TR15F | Larger reel |
| NAWE221M25V8X10.5LLBF | 220 | 25 | 8X10.5 | NACZ221M25V8X10.5TR15F | |
| NAWE4R7M35V4X5.5NBF | 4.7 | 35 | 4X5.5 | NACEW4R7M35V4X5.5TR15F | Larger reel |
| NAWE4R7M35V4X5.5NLBF | 4.7 | 35 | 4X5.5 | NACEW4R7M35V4X5.5TR15F | |
| NAWE100M35V5X5.5NBF | 10 | 35 | 5X5.5 | NACX100M35V5x5.5TR13F | |
| NAWE220M35V6.3X5.5NBF | 22 | 35 | 6.3X5.5 | NACX220M35V6.3x5.5TR13F | |
| NAWE1R0M50V4X5.5NBF | 1.0 | 50 | 4X5.5 | NACX1R0M50V4x5.5TR15F | Larger reel |
| NAWE1R0M50V4X5.5NLBF | 1.0 | 50 | 4X5.5 | NACX1R0M50V4x5.5TR15F | |
| NAWE2R2M50V4X5.5NBF | 2.2 | 50 | 4X5.5 | NACX2R2M50V4x5.5TR15F | Larger reel |
| NAWE2R2M50V4X5.5NLBF | 2.2 | 50 | 4X5.5 | NACX2R2M50V4x5.5TR15F | |
| NAWE3R3M50V4X5.5NBF | 3.3 | 50 | 4X5.5 | NACEW3R3M50V4X5.5TR15F | Larger reel |
| NAWE3R3M50V4X5.5NLBF | 3.3 | 50 | 4X5.5 | NACEW3R3M50V4X5.5TR15F | |
| NAWE4R7M50V5X5.5NBF | 4.7 | 50 | 5X5.5 | NACEW4R7M50V5X5.5TR13F | Lower RCR |
| NAWE100M50V6.3X5.5NBF | 10 | 50 | 6.3X5.5 | NACX100M50V6.3x5.5TR13F | |

| EOL Part Number | Cap. | Voltage | Case Size | Possible Alternative | Comments |
|-----------------------|------|---------|-----------|------------------------|-------------|
| NAWE101M50V8X10.5LBF | 100 | 50 | 8X10.5 | NACZ101M50V8X10.5TR15F | Larger reel |
| NAWE101M50V8X10.5LLBF | 100 | 50 | 8X10.5 | NACZ101M50V8X10.5TR15F | |

Prepared by NIC Components TPMG, tpmg@niccomp.com

Surface Mount Aluminum Electrolytic Capacitors NAWE Series

FEATURES

- CYLINDRICAL V-CHIP CONSTRUCTION FOR SURFACE MOUNTING
- SUIT FOR HIGH TEMPERATURE REFLOW SOLDERING (UP TO 260°C)
- 1,000 HOUR LOAD LIFE @ +105°C
- DESIGNED FOR AUTOMATIC MOUNTING AND REFLOW SOLDERING

SAC Alloy Compatible
230°C ~ 260°C

RoHS Compliant
includes all homogeneous materials



CHARACTERISTICS

| | | | | | | |
|--|---|--|------|------|------|------|
| Rated Voltage Rating | 6.3 ~ 50Vdc | | | | | |
| Rated Capacitance Range | 1.0 ~ 470μF | | | | | |
| Operating Temp. Range | -55 ~ +105°C | | | | | |
| Capacitance Tolerance | ±20% (M) | | | | | |
| Max. Leakage Current After 2 Minutes @ 20°C | 0.01CV or 3μA whichever is greater | | | | | |
| Tan δ @ 120Hz/20°C | W.V. (Vdc) | 6.3 | 16 | 25 | 35 | 50 |
| | S.V. (Vdc) | 8.0 | 20 | 32 | 44 | 63 |
| | 4mm, 5mm diameter & 6.3x6.1mm 6.3x8mm & 8mm diameter | 0.30 | 0.20 | 0.16 | 0.14 | 0.12 |
| Low Temperature Stability Impedance Ratio @ 120Hz | W.V. (Vdc) | 6.3 | 16 | 25 | 35 | 50 |
| | Z-25°C/Z+20°C | 4 | 2 | 2 | 2 | 2 |
| | Z-40°C/Z+20°C | 8 | 4 | 4 | 3 | 3 |
| Load Life Test @ 105°C All Case Sizes = 1,000 hours | Capacitance Change | Within ±30% of initial measured value | | | | |
| | Tan δ | Less than ±300% of the specified maximum value | | | | |
| | Leakage Current | Less than the specified maximum value | | | | |

*See Part Number System for Details

LOW ESR COMPONENT
LIQUID ELECTROLYTE
For Performance Data see www.LowESR.com

STANDARD VALUES AND CASE SIZES (mm)

| Cap. (μF) | Code | Working Voltage (Vdc) | | | | |
|-----------|------|-----------------------|---------|---------|---------|---------|
| | | 6.3 | 16 | 25 | 35 | 50 |
| 1.0 | 1R0 | - | - | - | - | 4x5.5 |
| 2.2 | 2R2 | - | - | - | - | 4x5.5 |
| 3.3 | 3R3 | - | - | - | - | 4x5.5 |
| 4.7 | 4R7 | - | - | - | 4x5.5 | 5x5.5 |
| 10 | 100 | - | 4x5.5 | - | 5x5.5 | 6.3x5.5 |
| 22 | 220 | 4x5.5 | 5x5.5 | - | 6.3x5.5 | - |
| 33 | 330 | - | - | 6.3x5.5 | - | - |
| 47 | 470 | - | 6.3x5.5 | - | - | - |
| 100 | 101 | 6.3x5.5 | 6.3x5.5 | - | - | 8x10.5 |
| 220 | 221 | - | - | 8x10.5 | - | - |
| 330 | 331 | - | 8x10.5 | - | - | - |
| 470 | 471 | 8x10.5 | - | - | - | - |

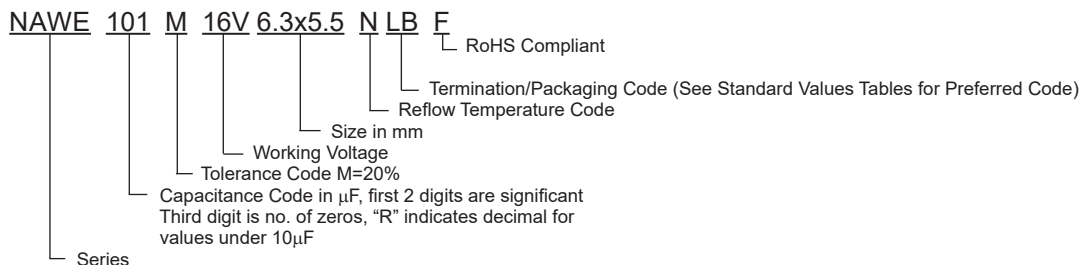
PEAK REFLOW TEMPERATURE CODES

| Code | Peak Reflow Temperature |
|------|-------------------------|
| N | 260°C |
| L | 250°C |

TERMINATION FINISH & PACKAGING OPTIONS CODES

| Code | Finish & Reel Size |
|------|---------------------------|
| B | Sn-Bi Finish & 13" Reel |
| LB | Sn-Bi Finish & 15" Reel |
| S | 100% Sn Finish & 13" Reel |
| LS | 100% Sn Finish & 15" Reel |

PART NUMBER SYSTEM



Surface Mount Aluminum Electrolytic Capacitors NAWE 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/120Hz | Load Life Hours @ +105°C |
|------------------------|-----------|------------|----------------------------|---------------------------------------|--------------------------|
| NAWE220M6.3V4X5.5N_F | 22 | 6.3 | 0.30 | 23 | 1,000 |
| NAWE101M6.3V6.3X5.5NBF | 100 | | 0.30 | 57 | 1,000 |
| NAWE471M6.3V8X10.5L_F | 470 | | 0.35 | 210 | 1,000 |
| NAWE100M16V4X5.5N_F | 10 | 16 | 0.20 | 20 | 1,000 |
| NAWE220M16V5X5.5NBF | 22 | | 0.20 | 31 | 1,000 |
| NAWE470M16V6.3X5.5NBF | 47 | | 0.20 | 56 | 1,000 |
| NAWE101M16V6.3X5.5NBF | 100 | | 0.20 | 65 | 1,000 |
| NAWE331M16V8X10.5L_F | 330 | | 0.20 | 195 | 1,000 |
| NAWE330M25V6.3X5.5NBF | 33 | 25 | 0.16 | 48 | 1,000 |
| NAWE221M25V8X10.5L_F | 220 | | 0.16 | 190 | 1,000 |
| NAWE4R7M35V4X5.5N_F | 4.7 | 35 | 0.14 | 14 | 1,000 |
| NAWE100M35V5X5.5NBF | 10 | | 0.14 | 24 | 1,000 |
| NAWE220M35V6.3X5.5NBF | 22 | | 0.14 | 46 | 1,000 |
| NAWE1R0M50V4X5.5N_F | 1.0 | 50 | 0.12 | 8.0 | 1,000 |
| NAWE2R2M50V4X5.5N_F | 2.2 | | 0.12 | 11 | 1,000 |
| NAWE3R3M50V4X5.5N_F | 3.3 | | 0.12 | 13 | 1,000 |
| NAWE4R7M50V5X5.5NBF | 4.7 | | 0.12 | 18 | 1,000 |
| NAWE100M50V6.3X5.5NBF | 10 | | 0.12 | 28 | 1,000 |
| NAWE101M50V8X10.5L_F | 100 | | 0.12 | 200 | 1,000 |

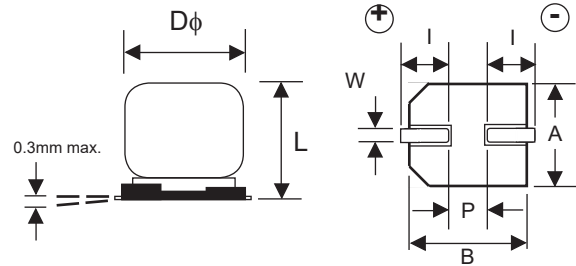
Part Number Suffix Where _ _ : Preferred (15" reel) = LB, Legacy (13" reel) = B (check with NIC for availability)

RIPPLE CURRENT FREQUENCY CORRECTION FACTORS

| Frequency | 50/60Hz | 120Hz | 500Hz | 1KHz | 10KHz |
|-------------|---------|-------|-------|------|-------|
| 1μF | 0.5 | 1.00 | 1.20 | 1.30 | 1.50 |
| 2.2 ~ 4.7μF | 0.65 | 1.00 | 1.20 | 1.30 | 1.50 |
| 10 ~ 47μF | 0.80 | 1.00 | 1.20 | 1.30 | 1.50 |
| 100 ~ 470μF | 0.80 | 1.00 | 1.10 | 1.15 | 1.20 |

DIMENSIONS (mm) AND REEL QUANTITIES

| Case Size | φD±0.5 | L max. | A±0.2 | B±0.2 | l±0.3 | W | P±0.3 | Qty/Reel |
|-----------|--------|--------|-------|-------|-------|---------|-------|----------|
| 4x5.5 | 4.0 | 5.5 | 4.3 | 4.3 | 1.8 | 0.5~0.8 | 1.0 | 1,500 |
| 5x5.5 | 5.0 | 5.5 | 5.3 | 5.3 | 2.2 | 0.5~0.8 | 1.4 | 1000 |
| 6.3x5.5 | 6.3 | 5.5 | 6.6 | 6.6 | 2.5 | 0.5~0.8 | 2.2 | 1000 |
| 8x10.5 | 8.0 | 10.5 | 8.3 | 8.3 | 2.9 | 0.7~1.1 | 3.2 | 300 |



PRECAUTIONS

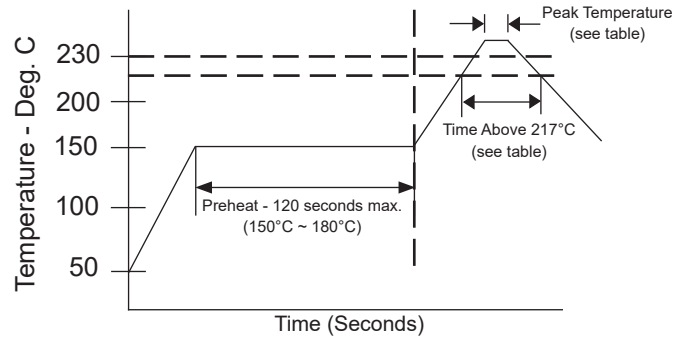
Please review the notes on correct use, safety and precautions found at <https://www.niccomp.com/resource/files/aluminum/AlumApplInfoCautions.pdf>
 If in doubt or uncertainty, please review your specific application - process details with NIC's technical support personnel: tpmg@niccomp.com

Surface Mount Aluminum Electrolytic Capacitors NAWE Series

PEAK REFLOW TEMPERATURE AND DURATION

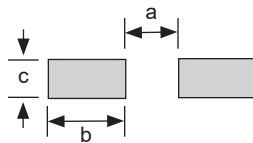
| Diameter | Time above 217°C | Peak Temperature 5 seconds |
|------------------|------------------|----------------------------|
| 4 ~ 6.3mm ϕ | 60 sec. max. | 260°C |
| 8mm ϕ | 60 sec. max. | 250°C |

Capacitors can withstand two times reflow at the above conditions. Second reflow shall be at least one hour after natural cool to room temperature.



RECOMMENDED LAND PATTERN DIMENSIONS (mm)

| Case Size | a | b | c |
|-----------|-----|-----|-----|
| 4x5.5 | 1.0 | 2.6 | 1.8 |
| 5x5.5 | 1.4 | 3.0 | 1.8 |
| 6x3x5.5 | 1.8 | 3.6 | 1.8 |
| 8x10.5 | 2.8 | 4.1 | 2.2 |



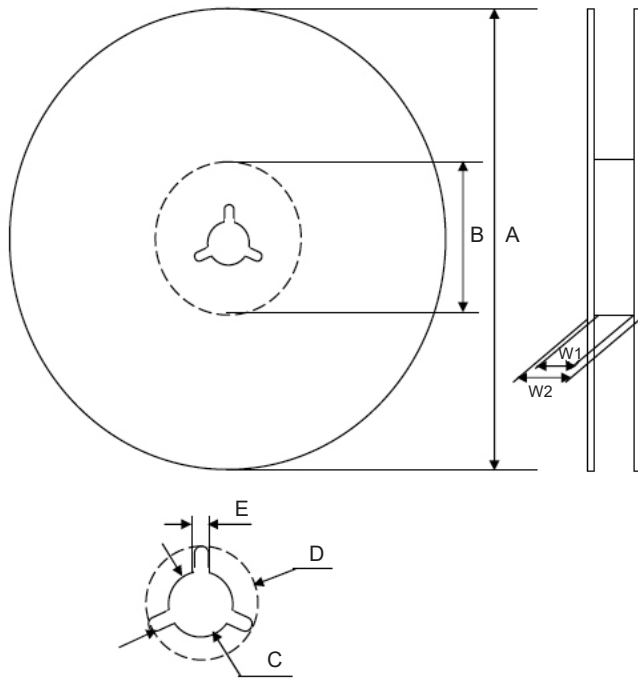
Review & Compare Reflow Soldering Heat Limits
V-chip SMT Aluminum Electrolytic Capacitors
www.niccomp.com/RSL

CARRIER TAPE DIMENSIONS & REEL QTY

| Case Size | A ±0.5 | B ±0.5 | C ±0.3 | D ±0.1 | P ±0.1 | T ±0.2 | t ±0.1 |
|-----------|--------|--------|--------|--------|--------|--------|--------|
| 4x5.5 | 4.7 | 4.7 | 12.0 | 5.5 | 8.0 | 5.8 | 0.6 |
| 5x5.5 | 5.7 | 5.7 | 12.0 | 5.5 | 12.0 | 5.8 | 0.6 |
| 6.3x5.5 | 7.0 | 7.0 | 16.0 | 7.5 | 12.0 | 5.8 | 0.6 |
| 8x10.5 | 8.7 | 8.7 | 24.0 | 11.5 | 16.0 | 11.1 | 0.6 |

Surface Mount Aluminum Electrolytic Capacitors NAWE Series

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



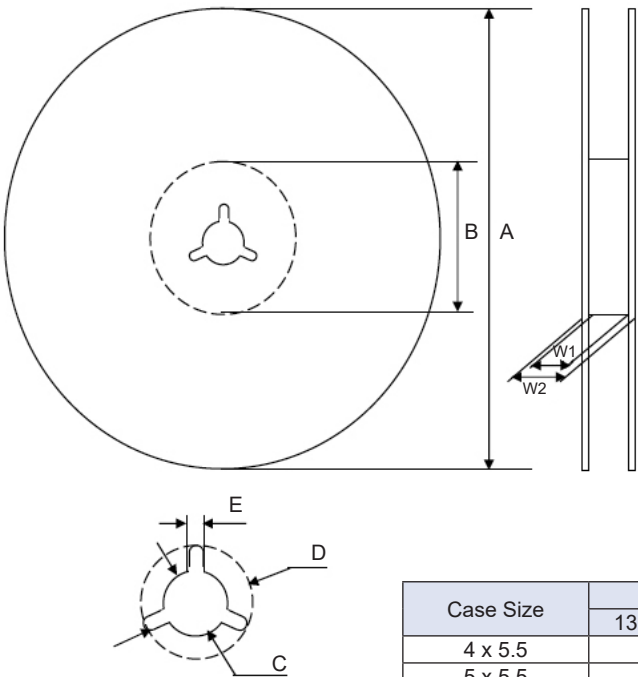
Dimensions (mm)

| Case Size | Tape Width | W1 | W2 |
|-----------|------------|-------------|-------------|
| 4x5.5 | 12.0 | 12.5 ~ 14.0 | 15.5 ~ 20.0 |
| 8x10.5 | 24.0 | 24.5 ~ 26.0 | 27.5 ~ 32.0 |

| Case Size | Tape Width | A | B | C | D | E |
|-----------|------------|------------|--------------------|-----------|-----------|-----------|
| 4x5.5 | 12.0 | $\phi 380$ | $\phi 80 \sim 105$ | $\phi 13$ | $\phi 21$ | 2.0 |
| 8x10.5 | 24.0 | ± 2 | | ± 0.5 | ± 1.0 | ± 0.5 |

| Color |
|---------------|
| Black or Blue |

Optional V-Chip 13" (330mm) Reels (B suffix)



Dimensions (mm)

| Case Size | Tape Width | W1 | W2 |
|--------------|------------|-------------|-------------|
| 4x5.5, 5x5.5 | 12.0 | 12.4 ~ 14.4 | 15.5 ~ 20.0 |
| 6.3x5.5 | 16.0 | 16.4 ~ 18.4 | 19.5 ~ 24.0 |
| 8x10.5 | 24.0 | 24.4 ~ 26.4 | 27.5 ~ 32.0 |

| Case Size | Tape Width | A | B | C | D | E |
|-----------|------------|------------|--------------------|-----------|-----------|-----------|
| 4x5.5 | 12.0 | $\phi 330$ | $\phi 50 \sim 105$ | $\phi 13$ | $\phi 21$ | 2.0 |
| 6.3x5.5 | 16.0 | ± 2.0 | | ± 0.5 | ± 1.0 | ± 0.5 |
| 8x10.5 | 24.0 | | | | | |

| Color |
|---------------|
| Black or Blue |

| Case Size | Quantity Per Reel | |
|-----------|-------------------|------------------|
| | 13" (330mm) Reel | 15" (380mm) Reel |
| 4 x 5.5 | 1,500 pcs | 2,000 pcs |
| 5 x 5.5 | 1,000 pcs | N/A |
| 6.3 x 5.5 | 1,000 pcs | N/A |
| 8 x 10.5 | 300 pcs | 500 pcs |