

# nichicon FW, KW and KZ Series Aluminum Electrolytic Audio Capacitors



**FEATURES:**

**FW Series:**

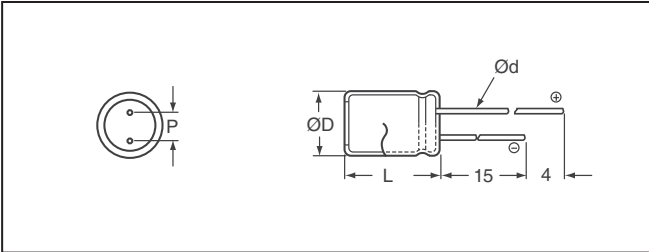
- Standard for audio equipment

**KW Series:**

- Standard for audio equipment • Realization of a harmonious balance of sound quality, made possible by the development of new electrolyte • Most suited for AV equipment like DVD, MD

**KZ Series:**

- Premium grade type for audio equipment • Premium grade "nichicon MUSE" acoustic series • Ideally suited for first class audio equipment where qualitative and quantitative comfortableness is required



| Size                    | Dimensions — mm |      |     |      |
|-------------------------|-----------------|------|-----|------|
|                         | øD              | L    | ød  | P    |
| <b>FW and KW Series</b> |                 |      |     |      |
| 5 x 11                  | 5               | 11   | 0.5 | 2.0  |
| 10 x 12.5               | 10              | 12.5 | 0.6 | 5.0  |
| 16 x 25                 | 16              | 25   | 0.8 | 7.5  |
| 18 x 35.5               | 18              | 35.5 | 0.8 | 7.5  |
| 18 x 40                 | 18              | 40   | 0.8 | 7.5  |
| 25 x 50                 | 25              | 50   | 1.0 | 12.5 |
| <b>KZ Series</b>        |                 |      |     |      |
| 8 x 11.5                | 8               | 11.5 | 0.8 | 3.5  |
| 10 x 12.5               | 10              | 12.5 | 0.8 | 5.0  |
| 10 x 16                 | 10              | 16   | 0.8 | 5.0  |
| 12.5 x 20               | 12.5            | 20   | 0.8 | 5.0  |
| 12.5 x 25               | 12.5            | 25   | 0.8 | 5.0  |
| 16 x 25                 | 16              | 25   | 0.8 | 7.5  |
| 16 x 35.5               | 16              | 35.5 | 0.8 | 7.5  |
| 18 x 40                 | 18              | 40   | 0.8 | 7.5  |

**SPECIFICATIONS:**

|                       |   |
|-----------------------|---|
| Temperature Range     | -40°C ~ 85°C  |
| Capacitance Tolerance | ±20% @ 120Hz, 20°C  |
| Leakage Current       | FW and KW Series: After 1 minute application of rated voltage, leakage current is not more than 0.03 CV or 4 (µA), whichever is greater. After 2 minutes application of rated voltage, leakage current is not more than 0.01 CV or 3 (µA), whichever is greater. KZ Series: After 1 minute application of rated voltage, leakage current is 0.01 CV or less |

F

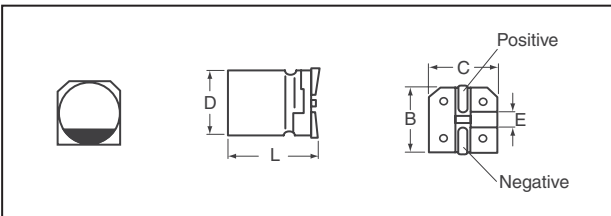
| Rated Voltage (VDC)              | Capacitance (µF) | tan δ (Maximum) @ 120Hz/20°C | Rated Ripple Current @ 120Hz/85°C (mArms) | Size (mm) | Digi-Key Part No. | 1    | 10    | 100    | Nichicon Part No. |
|----------------------------------|------------------|------------------------------|---|-----------|-------------------|------|-------|--------|-------------------|
| <b>FW Series — Standard Type</b> |                  |                              |   |           |                   |      |       |        |                   |
| 16                               | 4,700            | 0.26                         | 2,100                                     | 16 x 25   | 493-3178-ND       | 1.98 | 15.96 | 121.83 | UFW1C472MHD       |
| 25                               | 47               | 0.16                         | 115                                       | 5 x 11    | 493-3179-ND       | .39  | 2.75  | 16.50  | UFW1E470MDD       |
| 35                               | 330              | 0.14                         | 470                                       | 10 x 12.5 | 493-3180-ND       | .82  | 5.76  | 37.87  | UFW1V331MPD       |
|                                  | 2,200            | 0.16                         | 1,800                                     | 16 x 25   | 493-3181-ND       | 1.98 | 15.59 | 116.91 | UFW1V222MHD       |
|                                  | 4,700            | 0.20                         | 2,490                                     | 18 x 35.5 | 493-3182-ND       | 2.64 | 21.30 | 162.60 | UFW1V472MHD       |
| 50                               | 10,000           | 0.30                         | 4,000                                     | 25 x 50   | 493-3183-ND       | 6.08 | 54.72 | 413.39 | UFW1H103MRD       |
|                                  | 47               | 0.08                         | 210                                       | 10 x 12.5 | 493-3184-ND       | .64  | 4.51  | 29.69  | UFW2A470MPD       |
| 100                              | 1,000            | 0.08                         | 1,370                                     | 18 x 40   | 493-3185-ND       | 2.36 | 19.04 | 145.40 | UFW2A102MHD       |
| <b>KW Series — Standard Type</b> |                  |                              |   |           |                   |      |       |        |                   |
| 50                               | 1                | 0.12                         | 10  | 5 x 11    | 493-3186-ND       | .36  | 2.42  | 13.74  | UKW1H010MDD       |
|                                  | 10               | 0.12                         | 65  | 5 x 11    | 493-3187-ND       | .39  | 2.75  | 16.50  | UKW1H100MDD       |
| <b>KZ Series — Premium Type</b>  |                  |                              |   |           |                   |      |       |        |                   |
| 25                               | 33               | 0.12                         | —   | 8 x 11.5  | 493-3188-ND       | .47  | 3.31  | 21.81  | UKZ1E330MPM       |
|                                  | 47               | 0.12                         | —   | 10 x 12.5 | 493-3189-ND       | .57  | 4.05  | 26.66  | UKZ1E470MPM       |
|                                  | 100              | 0.12                         | —   | 10 x 16   | 493-3190-ND       | .70  | 4.93  | 32.42  | UKZ1E101MPM       |
|                                  | 330              | 0.12                         | —   | 12.5 x 25 | 493-3191-ND       | .89  | 6.71  | 48.01  | UKZ1E331MHH       |
|                                  | 470              | 0.12                         | —   | 16 x 25   | 493-3192-ND       | 1.17 | 8.90  | 63.66  | UKZ1E471MHH       |
| 50                               | 22               | 0.08                         | —   | 8 x 11.5  | 493-3193-ND       | .48  | 3.34  | 20.05  | UKZ1H220MPM       |
|                                  | 47               | 0.08                         | —   | 10 x 16   | 493-3194-ND       | .70  | 4.93  | 32.42  | UKZ1H470MPM       |
|                                  | 100              | 0.08                         | —   | 12.5 x 20 | 493-3195-ND       | .86  | 6.41  | 43.90  | UKZ1H101MHH       |
|                                  | 220              | 0.08                         | —   | 16 x 25   | 493-3196-ND       | 1.01 | 7.66  | 54.80  | UKZ1H221MHH       |
|                                  | 470              | 0.08                         | —   | 16 x 35.5 | 493-3197-ND       | 1.46 | 11.55 | 86.61  | UKZ1H471MHH       |
|                                  | 1,000            | 0.08                         | —   | 18 x 40   | 493-3198-ND       | 2.02 | 16.33 | 124.66 | UKZ1H102MHH       |
| 100                              | 47               | 0.07                         | —   | 12.5 x 20 | 493-3199-ND       | .93  | 6.88  | 47.13  | UKZ2A470MHH       |
|                                  | 100              | 0.07                         | —   | 16 x 25   | 493-3200-ND       | 1.10 | 8.72  | 65.40  | UKZ2A101MHH       |
|                                  | 220              | 0.07                         | —   | 16 x 35.5 | 493-3201-ND       | 1.64 | 12.89 | 96.71  | UKZ2A221MHH       |

## UQ Series Aluminum Electrolytic Audio Capacitors (SMT)



**FEATURES:**

- Chip type for audio equipment • Wide temperature range • Chip type acoustic series within the wide temperature range • Applicable to automatic mounting machine using carrier tape



| Size      | Dimensions — mm |     |      |      |     |
|-----------|-----------------|-----|------|------|-----|
|           | øD              | L   | B    | C    | E   |
| 4 x 5.4   | 4               | 5.4 | 4.3  | 4.3  | 1.0 |
| 5 x 5.4   | 5               | 5.4 | 5.3  | 5.3  | 1.3 |
| 6.3 x 5.4 | 6.3             | 5.4 | 6.6  | 6.6  | 2.2 |
| 8 x 6.2   | 8               | 6.2 | 8.3  | 8.3  | 2.3 |
| 8 x 10    | 8               | 10  | 8.3  | 8.3  | 3.1 |
| 10 x 10   | 10              | 10  | 10.3 | 10.3 | 4.5 |

**SPECIFICATIONS:**

|                       |  |
|-----------------------|--|
| Temperature Range     | -40°C ~ 105°C  |
| Capacitance Tolerance | ±20% @ 120Hz, 20°C   |
| Leakage Current       | After 1 minute application of rated voltage, leakage current is not more than 0.03 CV or 4 (µA), whichever is greater. |

| Rated Voltage (VDC) | Cap. (µF) | tan δ (Maximum) @ 120Hz/20°C | Rated Ripple Current @ 120Hz/105°C (mArms) | Size (mm)     | Digi-Key Part No. | Cut Tape Pricing |        |               | Digi-Key Part No. | Tape and Reel |                | Nichicon Part No. |
|---------------------|-----------|------------------------------|--|---------------|-------------------|------------------|--------|---------------|-------------------|---------------|----------------|-------------------|
|                     |           |                              |  |               |                   | 1                | 10     | 100           |                   | Qty.          | Pricing        |                   |
| 25                  | 10        | 0.16                         | 23   | 5 x 5.4       | 493-3202-1-ND     | .81              | 6.43   | 38.71         | 493-3202-2-ND     | 1,000         | 147.00         | UUQ1E100MCL1GB    |
|                     | 33        | 0.16                         | 48   | 6.3 x 5.4     | 493-3205-1-ND     | 1.05             | 8.80   | 55.14         | 493-3205-2-ND     | 1,000         | 223.31         | UUQ1E330MCL1GB    |
|                     | 47        | 0.16                         | 66   | 8 x 6.2       | 493-3206-1-ND     | 1.25             | 10.58  | 71.91         | 493-3206-2-ND     | 1,000         | 319.82         | UUQ1E470MCL1GS    |
|                     | 100       | 0.16                         | 155  | 8 x 10        | 493-3203-1-ND     | 1.47             | 12.05  | 97.02         | 493-3203-2-ND     | 500           | 249.68         | UUQ1E101MCL1GS    |
|                     | 220       | 0.16                         | 300  | 10 x 10       | 493-3204-1-ND     | 1.71             | 13.98  | 112.58        | 493-3204-2-ND     | 500           | 290.08         | UUQ1E221MCL1GS    |
| 50                  | 1         | 0.12                         | 6.2  | 4 x 5.4       | 493-3207-1-ND     | .58              | 4.58   | 23.96         | 493-3207-2-ND     | 2,000         | 83.33/M        | UUQ1H010MCL1GB    |
|                     | 10        | 0.12                         | 30   | 6.3 x 5.4     | 493-3208-1-ND     | 1.05             | 8.80   | 55.14         | 493-3208-2-ND     | 1,000         | 223.31         | UUQ1H100MCL1GB    |
|                     | 22        | 0.12                         | 51   | 8 x 6.2       | 493-3210-1-ND     | 1.25             | 10.58  | 71.91         | 493-3210-2-ND     | 1,000         | 319.82         | UUQ1H220MCL1GS    |
|                     | 33        | 0.12                         | 140  | 8 x 10        | 493-3211-1-ND     | 1.47             | 12.05  | 97.02         | 493-3211-2-ND     | 500           | 249.68         | UUQ1H330MCL1GS    |
|                     | 47        | 0.12                         | 180  | 8 x 10        | 493-3212-1-ND     | 1.47             | 12.05  | 97.02         | 493-3212-2-ND     | 500           | 249.68         | UUQ1H470MCL1GS    |
| 100                 | 0.12      | 220                          | 10 x 10                                    | 493-3209-1-ND | 1.71              | 13.98            | 112.58 | 493-3209-2-ND | 500               | 290.08        | UUQ1H101MCL1GS |                   |

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