

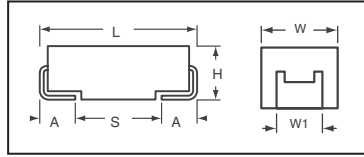
TCJ Series Conductive Polymer Tantalum Capacitors



The TCJ Series of tantalum capacitors with a conductive polymer electrode offers lower ESR, safer non-ignition failure mode and better capacitance retention compared to the conventional MnO2 electrode capacitors.

The TCJ series is suitable for power management systems with operating temperatures up to 125°C and is also ready for lead free-assembly systems up to 3x reflow with 260°C peak temperature.

- Temperature Range: -55°C - 125°C
- Capacitance Tolerance: ±20%



| Case Size | EIA Code | Dimensions - mm | | | | | |
|-----------|----------|-----------------|------|------|------|------|----------|
| | | L | W | H | W1 | A | S (Min.) |
| A | 3216-18 | 3.20 | 1.60 | 1.60 | 1.20 | 0.80 | 1.80 |
| B | 3528-21 | 3.50 | 2.80 | 1.90 | 2.20 | 0.80 | 1.40 |
| C | 6032-28 | 6.00 | 3.20 | 2.60 | 2.20 | 1.30 | 2.90 |
| H | 3216-15 | 3.20 | 1.60 | 1.50 | 1.20 | 0.80 | 1.10 |
| R | 2012-12 | 2.05 | 1.30 | 1.20 | 1.0 | 0.50 | 0.85 |
| T | 3528-12 | 3.50 | 2.80 | 1.20 | 2.20 | 0.80 | 1.40 |
| W | 6032-15 | 6.00 | 3.20 | 1.50 | 2.20 | 1.30 | 2.90 |

| Rated Voltage (V) | Capacitance (µF) | Case Size | DF % Maximum | DCL (µA) Maximum | ESR Maximum (mΩ) @ 100kHz | RMS Current (mA) 25°C @ 100kHz | Digi-Key Part No. | Cut Tape Price Each | | | Digi-Key Part No. | Tape and Reel | | AVX Part No. | |
|-------------------|------------------|-----------|--------------|------------------|---------------------------|--------------------------------|-------------------|---------------------|------|---------------|-------------------|---------------|------------------|------------------|------------------|
| | | | | | | | | 1 | 10 | 100 | | Qty. | Pricing | | |
| 2.5 | 68 | A | 6 | 17.0 | 250 | 548 | 478-3460-1-ND | 1.72 | 1.50 | 1.31 | 478-3460-2-ND | 2,000 | 253.64/M | TCJA686M002R0250 | |
| | 100 | A | 6 | 25.0 | 200 | 612 | 478-3452-1-ND | 1.72 | 1.50 | 1.31 | 478-3452-2-ND | 2,000 | 253.64/M | TCJA107M002R0200 | |
| | 100 | B | 6 | 25.0 | 70 | 1,102 | 478-3462-1-ND | 1.72 | 1.50 | 1.31 | 478-3462-2-ND | 2,000 | 253.64/M | TCJB107M002R0070 | |
| | 150 | B | 6 | 37.5 | 70 | 1,102 | 478-3464-1-ND | 1.72 | 1.50 | 1.31 | 478-3464-2-ND | 2,000 | 294.53/M | TCJB157M002R0070 | |
| 4 | 33 | A | 6 | 13.2 | 300 | 500 | 478-3455-1-ND | 1.72 | 1.50 | 1.31 | 478-3455-2-ND | 2,000 | 253.64/M | TCJA336M004R0300 | |
| | 47 | A | 6 | 18.8 | 200 | 612 | 478-3457-1-ND | 1.72 | 1.50 | 1.31 | 478-3457-2-ND | 2,000 | 259.18/M | TCJA476M004R0200 | |
| | 47 | T | 8 | 18.8 | 80 | 1,000 | 478-3479-1-ND | 1.79 | 1.56 | 1.36 | 478-3479-2-ND | 2,500 | 318.09/M | TCJT476M004R0080 | |
| | 68 | A | 6 | 27.2 | 250 | 548 | 478-3461-1-ND | 1.72 | 1.50 | 1.31 | 478-3461-2-ND | 2,000 | 253.64/M | TCJA686M004R0250 | |
| | 68 | B | 6 | 27.2 | 70 | 1,102 | 478-3137-1-ND† | .76 | .67 | .58 | 478-3137-2-ND | 2,000 | 259.18/M | TCJB686M004R0070 | |
| | 68 | T | 8 | 27.2 | 80 | 1,000 | 478-3480-1-ND | 1.79 | 1.56 | 1.36 | 478-3480-2-ND | 2,500 | 318.09/M | TCJT686M004R0080 | |
| | 100 | A | 6 | 40.0 | 200 | 612 | 478-3453-1-ND | 1.72 | 1.50 | 1.31 | 478-3453-2-ND | 2,000 | 259.18/M | TCJA107M004R0200 | |
| | 100 | B | 8 | 40.0 | 70 | 1,102 | 478-3129-1-ND† | .76 | .67 | .58 | 478-3129-2-ND | 2,000 | 259.18/M | TCJB107M004R0070 | |
| | 100 | G | 10 | 40.0 | 300 | 483 | 478-5657-1-ND | 2.07 | 1.80 | 1.57 | 478-5657-2-ND | 2,500 | 702.01/M | TCJG107M004R0300 | |
| | 150 | B | 6 | 60.0 | 70 | 1,102 | 478-3465-1-ND | 1.72 | 1.50 | 1.31 | 478-3465-2-ND | 2,000 | 300.76/M | TCJB157M004R0070 | |
| | 220 | B | 10 | 88.0 | 70 | 1,102 | 478-5638-1-ND | 2.15 | 1.87 | 1.64 | 478-5638-2-ND | 2,000 | 730.42/M | TCJB227M004R0070 | |
| | 220 | B | 10 | 88.0 | 45 | 1,374 | 478-6134-1-ND | 2.01 | 1.75 | 1.53 | 478-6134-2-ND | 2,000 | 683.30/M | TCJB227M004R0045 | |
| | 6.3 | 10 | A | 6 | 6.0 | 300 | 500 | 478-3134-1-ND† | .65 | .57 | .50 | 478-3134-2-ND | 2,000 | 220.38/M | TCJA106M006R0300 |
| | | 10 | R | 6 | 6.0 | 500 | 332 | 478-3471-1-ND | 2.08 | 1.81 | 1.58 | 478-3471-2-ND | 2,500 | 343.73/M | TCJR106M006R0500 |
| | | 22 | A | 6 | 13.2 | 300 | 500 | 478-4710-1-ND | .68 | .59 | .52 | 478-4710-2-ND | 2,000 | 230.08/M | TCJA226M006R0300 |
| | | 22 | T | 6 | 13.2 | 150 | 730 | 478-3475-1-ND | 1.79 | 1.56 | 1.36 | 478-3475-2-ND | 2,500 | 318.09/M | TCJT226M006R0150 |
| 33 | | A | 6 | 19.8 | 200 | 612 | 478-3456-1-ND | 1.72 | 1.50 | 1.31 | 478-3456-2-ND | 2,000 | 259.18/M | TCJA336M006R0200 | |
| 33 | | B | 6 | 19.8 | 70 | 1,102 | 478-4712-1-ND | .80 | .70 | .61 | 478-4712-2-ND | 2,000 | 270.97/M | TCJB336M006R0070 | |
| 33 | | B | 8 | 19.8 | 200 | 652 | 478-3467-1-ND | 1.72 | 1.50 | 1.31 | 478-3467-2-ND | 2,000 | 253.64/M | TCJB336M006R0200 | |
| 33 | | T | 8 | 19.8 | 150 | 730 | 478-3477-1-ND | 1.79 | 1.56 | 1.36 | 478-3477-2-ND | 2,500 | 318.09/M | TCJT336M006R0150 | |
| 47 | | A | 6 | 28.2 | 200 | 612 | 478-3458-1-ND | 1.72 | 1.50 | 1.31 | 478-3458-2-ND | 2,000 | 259.18/M | TCJA476M006R0200 | |
| 47 | | B | 6 | 28.2 | 70 | 1,102 | 478-3139-1-ND† | .76 | .67 | .58 | 478-3139-2-ND | 2,000 | 259.18/M | TCJB476M006R0070 | |
| 47 | | T | 8 | 28.2 | 80 | 1,000 | 478-3133-1-ND† | .91 | .80 | .70 | 478-3133-2-ND | 2,500 | 309.78/M | TCJT476M006R0080 | |
| 68 | | B | 8 | 40.8 | 55 | 1,102 | 478-4714-1-ND | 1.14 | 1.00 | .87 | 478-4714-2-ND | 2,000 | 388.78/M | TCJB686M006R0055 | |
| 68 | | B | 8 | 40.8 | 70 | 1,102 | 478-3131-1-ND† | .76 | .67 | .58 | 478-3131-2-ND | 2,000 | 259.18/M | TCJB686M006R0070 | |
| 68 | | C | 6 | 40.8 | 100 | 1,049 | 478-3470-1-ND | 1.91 | 1.66 | 1.45 | 478-3470-2-ND | 500 | 179.83 | TCJC686M006R0100 | |
| 68 | | W | 8 | 40.8 | 70 | 1,134 | 478-5693-1-ND | 2.22 | 1.93 | 1.69 | 478-5693-2-ND | 1,000 | 807.35 | TCJW686M006R0070 | |
| 100 | | B | 10 | 60.0 | 45 | 1,374 | 478-4711-1-ND | 1.07 | .94 | .82 | 478-4711-2-ND | 2,000 | 365.21/M | TCJB107M006R0045 | |
| 100 | | B | 10 | 60.0 | 70 | 1,102 | 478-3130-1-ND† | .76 | .67 | .58 | 478-3130-2-ND | 2,000 | 259.18/M | TCJB107M006R0070 | |
| 150 | | B | 10 | 90.0 | 70 | 1,102 | 478-4921-1-ND | 1.72 | 1.50 | 1.31 | 478-4921-2-ND | 2,000 | 583.51/M | TCJB157M006R0070 | |
| 150 | | H | 6 | 90.0 | 200 | 632 | 478-4715-1-ND | 1.01 | .88 | .77 | 478-4715-2-ND | 2,500 | 343.73/M | TCJH157M006R0200 | |
| 150 | | W | 6 | 90.0 | 70 | 1,134 | 478-3481-1-ND | 2.08 | 1.81 | 1.58 | 478-3481-2-ND | 1,000 | 367.98 | TCJW157M006R0070 | |
| 220 | B | 10 | 132.0 | 200 | 652 | 478-5749-1-ND | 1.98 | 1.72 | 1.50 | 478-5749-2-ND | 2,000 | 670.13/M | TCJB227M006R0200 | | |
| 10 | 4.7 | R | 6 | 4.7 | 500 | 332 | 478-3472-1-ND | 2.08 | 1.81 | 1.58 | 478-3472-2-ND | 2,500 | 343.73/M | TCJR475M010R0500 | |
| | 10 | A | 6 | 10.0 | 300 | 500 | 478-3127-1-ND† | .66 | .57 | .50 | 478-3127-2-ND | 2,000 | 222.46/M | TCJA106M010R0300 | |
| | 15 | A | 6 | 15.0 | 200 | 612 | 478-3454-1-ND | 1.72 | 1.50 | 1.31 | 478-3454-2-ND | 2,000 | 253.64/M | TCJA156M010R0200 | |
| | 22 | B | 6 | 22.0 | 300 | 532 | 478-3136-1-ND† | .76 | .67 | .58 | 478-3136-2-ND | 2,000 | 259.18/M | TCJB226M010R0300 | |
| | 22 | T | 6 | 22.0 | 150 | 730 | 478-3476-1-ND | 1.79 | 1.56 | 1.36 | 478-3476-2-ND | 2,500 | 318.09/M | TCJT226M010R0150 | |
| | 33 | B | 6 | 33.0 | 70 | 1,102 | 478-4713-1-ND | .83 | .73 | .64 | 478-4713-2-ND | 2,000 | 282.75/M | TCJB336M010R0070 | |
| 16 | 10 | B | 6 | 16.0 | 200 | 652 | 478-3138-1-ND† | .76 | .67 | .58 | 478-3138-2-ND | 2,000 | 259.18/M | TCJB336M010R0200 | |
| | 33 | C | 6 | 33.0 | 100 | 1,049 | 478-3468-1-ND | 1.91 | 1.66 | 1.45 | 478-3468-2-ND | 500 | 179.83 | TCJC336M010R0100 | |
| | 47 | B | 6 | 47.0 | 70 | 1,102 | 478-3132-1-ND† | .76 | .67 | .58 | 478-3132-2-ND | 2,000 | 259.18/M | TCJB476M010R0070 | |
| | 10 | A | 6 | 16.0 | 200 | 612 | 478-3451-1-ND | 1.72 | 1.50 | 1.31 | 478-3451-2-ND | 2,000 | 259.18/M | TCJA106M016R0200 | |
| 35 | 10 | B | 6 | 16.0 | 200 | 652 | 478-5261-1-ND | 1.77 | 1.55 | 1.35 | 478-5261-2-ND | 2,000 | 602.91/M | TCJB106M016R0200 | |
| | 15 | T | 6 | 16.0 | 150 | 730 | 478-3473-1-ND | 1.79 | 1.56 | 1.36 | 478-3473-2-ND | 2,500 | 318.09/M | TCJT106M016R0150 | |
| | 15 | B | 6 | 24.0 | 150 | 753 | 478-3463-1-ND | 1.72 | 1.50 | 1.31 | 478-3463-2-ND | 2,000 | 259.18/M | TCJB156M016R0150 | |
| | 22 | B | 6 | 35.2 | 150 | 753 | 478-3466-1-ND | 1.72 | 1.50 | 1.31 | 478-3466-2-ND | 2,000 | 259.18/M | TCJB226M016R0150 | |
| 47 | C | 6 | 35.0 | 200 | 742 | 478-5983-1-ND | 2.95 | 2.57 | 2.24 | 478-5983-2-ND | 500 | 536.04 | TCJC106M035R0200 | | |

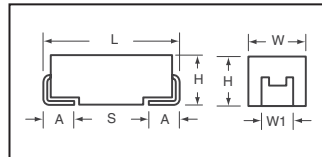
† 478-3447-ND TCJ Series Capacitors Kit 5 each of values denoted. Packaged in convenient mini-style notebook. 32.05

TRJ Series Professional Tantalum Chip Capacitors



The TRJ surface mount series employs established tantalum technology together with new process improvements and advanced manufacturing techniques. This robust series enables extension of the guaranteed 0.5% reliability level to 1000 hours at rated voltage, rated temperature, and 0.1Ω/volt circuit impedance. The moisture penetration barrier, thicker external dielectric layer, and modified manganising process make the capacitor more robust against higher thermo-mechanical stresses during assembly process and also more robust against more severe working conditions in Automotive, Medical, Aerospace, Military, and other applications. Lower ESR options are now available within the professional TRJ while achieving reliability levels twice that of standard tantalum devices. This enables designers of power supplies in long life expectancy applications to use tantalum capacitors with the combined benefits of enhanced reliability and low ESR.

- Voltage Range: 16V - 50V • Temperature Range: -55°C - 125°C



| Case Size | EIA Code | Dimensions - mm | | | | | |
|-----------|----------|-----------------|------|------|------|----------|------|
| | | L | W | H | W1 | S (Min.) | A |
| B | 3528-21 | 3.50 | 2.80 | 1.90 | 2.20 | 1.40 | 0.80 |
| C | 6032-28 | 6.00 | 3.20 | 2.60 | 2.20 | 2.90 | 1.30 |
| D | 7343-31 | 7.30 | 4.30 | 2.90 | 2.40 | 4.40 | 1.30 |

| Rated Voltage (V) | Capacitance (µF) | Case Size | DF % Maximum | DCL (µA) Maximum | ESR Maximum (mΩ) @ 100kHz | Ripple Current (A) 25°C @ 100kHz | Digi-Key Part No. | Cut Tape Price Each | | | Digi-Key Part No. | Tape and Reel | | AVX Part No. |
|-------------------|------------------|-----------|--------------|------------------|---------------------------|----------------------------------|-------------------|---------------------|------|------|-------------------|---------------|----------|------------------|
| | | | | | | | | 1 | 10 | 100 | | Qty. | Pricing | |
| 16 | 22 | C | 6 | 2.6 | 700 | 396 | 478-4957-1-ND | .83 | .73 | .64 | 478-4957-2-ND | 500 | 151.42 | TRJC226M016RRJ |
| 25 | 3.3 | B | 6 | 0.62 | 3,740 | 151 | 478-4954-1-ND | .60 | .53 | .46 | 478-4954-2-ND | 2,000 | 203.74/M | TRJB335M025RRJ |
| | 47 | D | 6 | 8.8 | 540 | 527 | 478-5760-1-ND | 3.10 | 2.70 | 2.36 | 478-5760-2-ND | 500 | 564.10 | TRJD476K025RRJ |
| | 47 | D | 6 | 8.8 | 250 | 775 | 478-5759-1-ND | 6.05 | 5.27 | 4.60 | 478-5759-2-ND | 500 | 1100.48 | TRJD476K025R0250 |
| 35 | 1.0 | B | 4 | 0.3 | 3,400 | 158 | 478-4953-1-ND | .60 | .53 | .46 | 478-4953-2-ND | 2,000 | 203.74/M | TRJB105K035RRJ |
| | 10 | D | 6 | 2.6 | 800 | 433 | 478-4958-1-ND | 1.34 | 1.17 | 1.02 | 478-4958-2-ND | 500 | 242.90 | TRJD106K035RRJ |
| 50 | 2.2 | D | 4.5 | 0. | | | | | | | | | | |