

TCJ Series



Tantalum Solid Electrolytic Chip Capacitors with Conductive Polymer Electrode



FEATURES

- Conductive polymer electrode reduces ignition failure mode
- Lower ESR
- 3x reflow 260°C compatible
- CV range: 0.47-470µF / 2.5-125V
- 17 case sizes available

APPLICATIONS

- Smart phone, Tablets, Notebook, LCD TV, Power supplies



Elektra Award 2010



LEAD-FREE
LEAD-FREE COMPATIBLE
COMPONENT



RoHS
COMPLIANT



CASE DIMENSIONS: millimeters (inches)

| Code | EIA Code | EIA Metric | L±0.20 (0.008) | W+0.20 (0.008) -0.10 (0.004) | H+0.20 (0.008) -0.10 (0.004) | W ₁ ±0.20 (0.008) | A+0.30 (0.012) -0.20 (0.008) | S Min. |
|------|----------|------------|----------------|------------------------------|------------------------------|------------------------------|------------------------------|--------------|
| A | 1206 | 3216-18 | 3.20 (0.126) | 1.60 (0.063) | 1.60 (0.063) | 1.20 (0.047) | 0.80 (0.031) | 1.10 (0.043) |
| B | 1210 | 3528-21 | 3.50 (0.138) | 2.80 (0.110) | 1.90 (0.075) | 2.20 (0.087) | 0.80 (0.031) | 1.40 (0.055) |
| C | 2312 | 6032-28 | 6.00 (0.236) | 3.20 (0.126) | 2.60 (0.102) | 2.20 (0.087) | 1.30 (0.051) | 2.90 (0.114) |
| D | 2917 | 7343-31 | 7.30 (0.287) | 4.30 (0.169) | 2.90 (0.114) | 2.40 (0.094) | 1.30 (0.051) | 4.40 (0.173) |
| E | 2917 | 7343-43 | 7.30 (0.287) | 4.30 (0.169) | 4.10 (0.162) | 2.40 (0.094) | 1.30 (0.051) | 4.40 (0.173) |
| G | 1206 | 3216-15 | 3.20 (0.126) | 1.60 (0.063) | 1.50 (0.059) max | 1.20 (0.047) | 0.80 (0.031) | 1.10 (0.043) |
| H | 1210 | 3528-15 | 3.50 (0.138) | 2.80 (0.110) | 1.50 (0.059) max | 2.20 (0.087) | 0.80 (0.031) | 1.40 (0.055) |
| K | 1206 | 3216-10 | 3.20 (0.126) | 1.60 (0.063) | 1.00 (0.039) max | 1.20 (0.047) | 0.80 (0.031) | 1.10 (0.043) |
| N | 0805 | 2012-10 | 2.05 (0.081) | 1.30 (0.051) | 1.00 (0.039) max | 1.00 (0.039) | 0.50 (0.020) | 0.85 (0.033) |
| P | 0805 | 2012-15 | 2.05 (0.081) | 1.35 (0.050) | 1.50 (0.059) max | 1.00±0.10 (0.039±0.004) | 0.50 (0.020) | 0.85 (0.033) |
| R | 0805 | 2012-12 | 2.05 (0.081) | 1.30 (0.051) | 1.20 (0.047) max | 1.00±0.10 (0.039±0.004) | 0.50 (0.020) | 0.85 (0.033) |
| S | 1206 | 3216-12 | 3.20 (0.126) | 1.60 (0.063) | 1.20 (0.047) max | 1.20 (0.047) | 0.80 (0.031) | 1.10 (0.043) |
| T | 1210 | 3528-12 | 3.50 (0.138) | 2.80 (0.110) | 1.20 (0.047) max | 2.20 (0.087) | 0.80 (0.031) | 1.40 (0.055) |
| V | 2924 | 7361-38 | 7.30 (0.287) | 6.10 (0.240) | 3.55 (0.140) | 3.10 (0.120) | 1.30 (0.051) | 4.40 (0.173) |
| W | 2312 | 6032-15 | 6.00 (0.236) | 3.20 (0.126) | 1.50 (0.059) max | 2.20 (0.087) | 1.30 (0.051) | 2.90 (0.114) |
| X | 2917 | 7343-15 | 7.30 (0.287) | 4.30 (0.169) | 1.50 (0.059) max | 2.40 (0.094) | 1.30 (0.051) | 4.40 (0.173) |
| Y | 2917 | 7343-20 | 7.30 (0.287) | 4.30 (0.169) | 2.00 (0.079) max | 2.40 (0.094) | 1.30 (0.051) | 4.40 (0.173) |

W1 dimension applies to the termination width for A dimensional area only.

MARKING

A, B, C, D, E, G, H, K, S, T, V, W, X, Y CASE



N, P, R CASE



HOW TO ORDER

| TCJ | A | 226 | M | 004 | R | 0300 |
|------|-----------------|--|-----------|--|---|-----------|
| Type | Case Size | Capacitance Code | Tolerance | Rated DC Voltage | Packaging | ESR in mΩ |
| | See table above | pF code: 1st two digits represent significant figures, 3rd digit represents multiplier (number of zeros to follow) | M = ±20% | 002 = 2.5Vdc 004 = 4Vdc 006 = 6.3Vdc 010 = 10Vdc 016 = 16Vdc 020 = 20Vdc 025 = 25Vdc 035 = 35Vdc 050 = 50Vdc 063 = 63Vdc 075 = 75Vdc 100 = 100Vdc 125 = 125Vdc | R = Pure Tin 7" Reel S = Pure Tin 13" Reel | |

TECHNICAL SPECIFICATIONS (Common for all TCJ series)

| | |
|-------------------------------|--|
| Technical Data: | All technical data relate to an ambient temperature of +25°C |
| Capacitance Tolerance: | ±20% |
| Leakage Current DCL: | 0.1CV |
| Reliability: | 1% per 1000 hours at 85°C, V _R with 0.1Ω/V series impedance, 60% confidence level |
| Resistance to soldering heat: | 3x260°C peak for max. 10s reflow |



Tantalum Solid Electrolytic Chip Capacitors with Conductive Polymer Electrode

CAPACITANCE AND RATED VOLTAGE RANGE (LETTER DENOTES CASE SIZE)

| Cap | | Rated Voltage DC (V _R) to 85°C | | | | | | | | | | | | |
|------|------|--|---|--|----------------------------------|--------------------------------|----------------------------|--|--|---------------------|----------------------|---------|----------|----------|
| µF | Code | 2.5V (e) | 4V (G) | 6.3V (J) | 10V (A) | 16V (C) | 20V (D) | 25V (E) | 35V (V) | 50V (T) | 63V (J) | 75V (P) | 100V (A) | 125V (B) |
| 0.47 | 474 | | | | | | | | | | | | | B(400) |
| 0.68 | 684 | | | | | | | | | B(400) | B(300) | | | |
| 1.0 | 105 | | | | | | | P(500) | | B(300) | B(300) C(300) | | | |
| 1.5 | 155 | | | | | | | | B(200) | B(300) C(300) | C(300) | | | |
| 2.2 | 225 | | | | | | | | B(200) | C(300) | C(200) | | | |
| 3.3 | 335 | | | | | | | | B(200) | C(200) | C(200) | | | D(250) |
| 4.7 | 475 | | | | K(500) R(500) | | | B(100,150) | B(200) C(200) | C(200) | C(200) D(120) | D(150) | D(250) | |
| 6.8 | 685 | | | | | A(200) | | B(90,150) T(100,150) | C(200) | C(200) D(120) | D(120) E(100,150) | D(120) | | |
| 10 | 106 | | | A(300) N(250,500) R(500) | A(300) | A(200) B(200) T(150,200) | | B(90,100,150) | B(200) C(200) Y(70) | D(120) E(70,100) | E(100,150) | U* | U* | |
| 15 | 156 | | A(300) | A(300) | A(200) | B(150) | | B(100,150) Y(90) | B(200), C(200) D(70,100) Y(70,100) | E(70,100) | | | | |
| 22 | 226 | | A(300) | A(300), K(400) N(500), R(500) S(400), T(150) | B(300) T(70,150) | B(150) | B(90,150) Y(70) | B(100,150), C(100) D(60,100) Y(70) | D(70,100) Y* | | | | | |
| 33 | 336 | | A(300) | A(200) B(70,200) T(150) | B(70,200) C(100) T(70,150) | Y(45,60,70) | Y(70) | D(60,100) X(70,100) Y(60,70,100) | D(70,100) E(55,70) | | | | | |
| 47 | 476 | | A(200) T(80) | A(70,100,200), B(70) K(150,200,400) P(500), R(500) T(55,69,70,80,120) | B(70) C(100) | X(45,70) Y(45,70) | D(55) X(55,70) Y(70) | D(60,100) E(50) | E(55) | | | | | |
| 68 | 686 | A(250) | A(250) B(70) T(80) | B(55,70) C(100) T(200), W(70) | D(45,55) Y(45,55) | D(50) Y(50) | D(55) E(45) | D(70) E(50) | | | | | | |
| 100 | 107 | A(200), B(70) | A(200) B(40,70) G(300) T(150) | A(100,150) B(45,55,69,70) T(70,200) | D(45,55,80) Y(25,45,55) | D(50), E(40) Y(50) | D(55) E(45) | D(55,70) E(80) | | | | | | |
| 150 | 157 | B(70) | B(70), Y(25,45) | B(25,35,45,55,69,70) D(15,25,40) H(70,200), W(40,70) Y(15,25,40) | D(25,40,45,55) Y(25,40,45,55) | D(40,50) E(40) Y(40,50) | | | | | | | | |
| 220 | 227 | B(35,45,70) | B(35,45,55,60,70) D(15,25,40) Y(15,25,40) | B(70,200) D(25,35,40,50) Y(15,25,35,40,50) | D(15,18,25,40,50) Y(25,40,50) | | | | | | | | | |
| 330 | 337 | B(35,45,70) Y(25,40) | D(25,40,50) Y(25,40,50) | D(25,40,50) Y(25,40,50) | | E* | | | | | | | | |
| 470 | 477 | D(15,25,40,50) Y(15,25,40,50) | D(15,25,40,50) Y(15,25,40,50) | X(55,100) | | | | | | | | | | |
| 3300 | 208 | | | U* | | | | | | | | | | |

Available Ratings, (ESR ratings in mOhms in brackets)

Engineering samples - please contact manufacturer

*Codes under development – subject to change

Note: Voltage ratings are minimum values. AVX reserves the right to supply higher ratings in the same case size, to the same reliability standards.

TCJ Series



Tantalum Solid Electrolytic Chip Capacitors with Conductive Polymer Electrode

RATINGS & PART NUMBER REFERENCE

| AVX Part No. | Case Size | Cap (µF) | Rated Voltage (V) | Rated Temp. (°C) | Category Voltage (V) | Category Temp. (°C) | DCL (µA) Max. | DF % Max. | ESR Max. (mΩ) @ 100kHz | MSL | 100kHz RMS Current (mA) | | | | Product Category |
|------------------------|-----------|----------|-------------------|------------------|----------------------|---------------------|---------------|-----------|------------------------|-----|-------------------------|------|-------|-------|------------------|
| | | | | | | | | | | | 25°C | 85°C | 105°C | 125°C | |
| TCJE685M063#0100 | E | 6.8 | 63 | 85 | 50 | 105 | 42.8 | 6 | 100 | 3 | 1600 | 1100 | 700 | - | 105°C |
| TCJE685M063#0150 | E | 6.8 | 63 | 85 | 50 | 105 | 42.8 | 6 | 150 | 3 | 1300 | 900 | 600 | - | 105°C |
| TCJE106M063#0100 | E | 10 | 63 | 85 | 50 | 105 | 63 | 6 | 100 | 3 | 1600 | 1100 | 700 | - | 105°C |
| TCJE106M063#0150 | E | 10 | 63 | 85 | 50 | 105 | 63 | 6 | 150 | 3 | 1300 | 900 | 600 | - | 105°C |
| 75 Volt @ 85°C | | | | | | | | | | | | | | | |
| TCJD475M075#0150 | D | 4.7 | 75 | 85 | 60 | 105 | 35.3 | 6 | 150 | 3 | 1200 | 800 | 500 | - | 105°C |
| TCJD685M075#0120 | D | 6.8 | 75 | 85 | 60 | 105 | 51 | 6 | 120 | 3 | 1400 | 1000 | 600 | - | 105°C |
| 100 Volt @ 85°C | | | | | | | | | | | | | | | |
| TCJD475M100#0250 | D | 4.7 | 100 | 85 | 80 | 105 | 47 | 8 | 250 | 3 | 900 | 600 | 400 | - | 105°C |
| 125 Volt @ 85°C | | | | | | | | | | | | | | | |
| TCJD335M125#0250 | D | 3.3 | 125 | 85 | 100 | 105 | 41.2 | 8 | 250 | 3 | 900 | 600 | 400 | - | 105°C |

Moisture Sensitivity Level (MSL) is defined according to J-STD-020.

All technical data relates to an ambient temperature of +25°C. Capacitance and DF are measured at 120Hz, 0.5RMS with DC bias of 2.2 volts. DCL is measured at rated voltage after 5 minutes.

ESR allowed to move up to 1.25 times catalog limit post mounting.

For typical weight and composition see page 214.

NOTE: AVX reserves the right to supply a higher voltage rating or tighter tolerance part in the same case size, to the same reliability standards.

PRODUCT CATEGORY 125°C

| TEST | 125°C series (Temperature range -55°C to +125°C) | | | | | | | | | |
|------------------------------|--|---------------|---------------|--------------------|----------------------------------|-----------|-------|-----------|------------|-------|
| | Condition | | | Characteristics | | | | | | |
| Endurance | Determine after application of rated voltage for 2000 +48/-0 hours at 85±2°C and then leaving 1-2 hours at room temperature. Also determine of 125°C temperature, category voltage for 2000 +48/-0 hours and then leaving 1-2 hours at room temperature. Power supply impedance to be ≤0.1Ω/V. | | | Visual examination | no visible damage | | | | | |
| | | | | DCL | 1.25 x initial limit | | | | | |
| | | | | ΔC/C | within +20/-30% of initial value | | | | | |
| | | | | DF | 1.5 x initial limit | | | | | |
| | | | | ESR | 2 x initial limit | | | | | |
| Storage Life | 125°C, 0V, 2000h | | | Visual examination | no visible damage | | | | | |
| | | | | DCL | 2 x initial limit | | | | | |
| | | | | ΔC/C | within ±20% of initial value | | | | | |
| | | | | DF | 1.5 x initial limit | | | | | |
| | | | | ESR | 2 x initial limit | | | | | |
| Humidity | Determine after storage without applied voltage at 65±2°C and 95±2% relative humidity for 500 hours and then recovery 1-2 hours at room temperature. | | | Visual examination | no visible damage | | | | | |
| | | | | DCL | 3 x initial limit | | | | | |
| | | | | ΔC/C | within +30/-20% of initial value | | | | | |
| | | | | DF | 1.5 x initial limit | | | | | |
| | | | | ESR | 2 x initial limit | | | | | |
| Temperature Stability | Step | Temperature°C | Duration(min) | | +20°C | -55°C | +20°C | +85°C | +125°C | +20°C |
| | 1 | +20±2 | 15 | DCL | IL* | n/a | IL* | 10 x IL* | 12.5 x IL* | IL* |
| | 2 | -55+0/-3 | 15 | | | | | | | |
| | 3 | +20±2 | 15 | ΔC/C | n/a | +0/-20% | ±5% | +20/-0% | +30/-0% | ±5% |
| | 4 | +85+3/-0 | 15 | | | | | | | |
| | 5 | +125+3/-0 | 15 | DF | IL* | 1.5 x IL* | IL* | 1.5 x IL* | 2 x IL* | IL* |
| | 6 | +20±2 | 15 | | | | | | | |
| Surge Voltage | Test temperature: 125°C+3/0°C Test voltage: Category voltage at 125°C Surge voltage: 1.3 x category voltage at 125°C Series protection resistance 1000±100Ω Discharge resistance: 1000Ω Number of cycles: 1000x Cycle duration: 6 min; 30 sec charge, 5 min 30 sec discharge | | | Visual examination | no visible damage | | | | | |
| | | | | DCL | initial limit | | | | | |
| | | | | ΔC/C | within +20/-30% of initial value | | | | | |
| | | | | DF | 1.25 x initial limit | | | | | |

*Initial Limit

Tantalum Solid Electrolytic Chip Capacitors with Conductive Polymer Electrode

PRODUCT CATEGORY 105°C

| TEST | 105°C series (Temperature range -55°C to +105°C) | | | | | | | |
|-----------------------|--|---------------|---------------|----------------------------|----------------------------------|--|--|--|
| | Condition | | | Characteristics | | | | |
| Endurance | Determine after application of rated voltage for 2000 +48/-0 hours at 85±2°C and then leaving 1-2 hours at room temperature. Also determine after application of 105°C temperature, category voltage for 2000 +48/-0 hours and then leaving 1-2 hours at room temperature. Power supply impedance to be ≤0.1Ω/V. | | | Visual examination | no visible damage | | | |
| | | | | DCL | 1.25 x initial limit | | | |
| | | | | ΔC/C | within +20/-30% of initial value | | | |
| | | | | DF | 1.5 x initial limit | | | |
| | | | | ESR | 2 x initial limit | | | |
| Storage Life | 105°C, 0V, 2000h | | | Visual examination | no visible damage | | | |
| | | | | DCL (V _R ≤ 75V) | 1.25 x initial limit | | | |
| | | | | DCL (V _R > 75V) | 2 x initial limit | | | |
| | | | | ΔC/C | within ±20% of initial value | | | |
| | | | | DF | 1.5 x initial limit | | | |
| | | | | ESR | 2 x initial limit | | | |
| Humidity | Determine after storage without applied voltage at 65±2°C and 95±2% relative humidity for 500 hours and then recovery 1-2 hours at room temperature. | | | Visual examination | no visible damage | | | |
| | | | | DCL | 3 x initial limit | | | |
| | | | | ΔC/C | within +30/-20% of initial value | | | |
| | | | | DF | 1.5 x initial limit | | | |
| | | | | ESR | 2 x initial limit | | | |
| Temperature Stability | Step | Temperature°C | Duration(min) | | | | | |
| | 1 | +20±2 | 15 | | | | | |
| | 2 | -55+0/-3 | 15 | | | | | |
| | 3 | +20±2 | 15 | | | | | |
| | 4 | +85+3/-0 | 15 | | | | | |
| | 5 | +105+3/-0 | 15 | | | | | |
| | 6 | +20±2 | 15 | | | | | |
| Surge Voltage | Test temperature: 105°C+3/0°C Test voltage: Category voltage at 105°C Surge voltage: 1.3 x category voltage at 105°C Series protection resistance 1000±100Ω Discharge resistance: 1000Ω Number of cycles: 1000x Cycle duration: 6 min; 30 sec charge, 5 min 30 sec discharge | | | Visual examination | no visible damage | | | |
| | | | | DCL | initial limit | | | |
| | | | | ΔC/C | within +20/-30% of initial value | | | |
| | | | | DF | 1.25 x initial limit | | | |

*Initial Limit

PRODUCT CATEGORY 85°C

| TEST | 85°C series (Temperature range -55°C to +85°C) | | | | | | | |
|-----------------------|---|---------------|---------------|--------------------|--|--|--|--------------------|
| | Condition | | | Characteristics | | | | |
| Endurance | Determine after application of rated voltage for 2000 +48/-0 hours at 85±2°C and then leaving 1-2 hours at room temperature. Power supply impedance to be ≤0.1Ω/V. | | | Visual examination | no visible damage | | | |
| | | | | DCL | 1.25 x initial limit | | | |
| | | | | ΔC/C | within +20/-30% of initial value | | | |
| | | | | DF | 1.5 x initial limit | | | |
| | | | | ESR | 2 x initial limit | | | |
| Storage Life | 85°C, 0V, 2000h | | | Visual examination | no visible damage | | | |
| | | | | DCL | 1.25 x initial limit | | | |
| | | | | ΔC/C | within ±20% of initial value | | | |
| | | | | DF | 1.5 x initial limit | | | |
| | | | | ESR | 2 x initial limit | | | |
| | | | | Humidity | Determine after storage without applied voltage at 65±2°C and 95±2% relative humidity for 500 hours and then recovery 1-2 hours at room temperature. | | | Visual examination |
| DCL | 5 x initial limit | | | | | | | |
| ΔC/C | within +40/-20% of initial value | | | | | | | |
| DF | 1.5 x initial limit | | | | | | | |
| ESR | 2 x initial limit | | | | | | | |
| Temperature Stability | Step | Temperature°C | Duration(min) | | | | | |
| | 1 | +20±2 | 15 | | | | | |
| | 2 | -55+0/-3 | 15 | | | | | |
| | 3 | +20±2 | 15 | | | | | |
| | 4 | +85+3/-0 | 15 | | | | | |
| | 5 | +20±2 | 15 | | | | | |
| Surge Voltage | Test temperature: 85+3/0°C Test voltage: Rated voltage Surge voltage: 1.3 x rated voltage Series protection resistance 1000±100Ω. Discharge resistance: 1000Ω Number of cycles: 1000x Cycle duration: 6 min; 30 sec charge, 5 min 30 sec discharge | | | Visual examination | no visible damage | | | |
| | | | | DCL | initial limit | | | |
| | | | | ΔC/C | within +20/-30% of initial value | | | |
| | | | | DF | 1.25 x initial limit | | | |

*Initial Limit



Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



Как с нами связаться

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