

TMJ Tantalum

SMD S1gma™ Series Capacitors



The S1gma™ series is offering a next generation of statistical screening and process control enhancement of tantalum capacitors for professional applications with improved reliability and extremely low DCL needs.



FEATURES

- 55 to +125°C Operation Temperature
- Basic Reliability Better than 0.5%/1000 hours
- 100% Surge Current Tested
- (2x Improvement Over Commercial Series)
- Improved DCL Limits 0.001CV* and 0.005CV

S1gma™ Prime – Utilizes 3 S1gma™ electrical screening to remove possible maverick parts from the distribution.

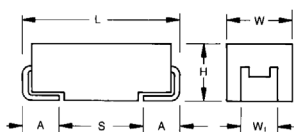
S1gma™ Premium – S1gma™ Prime, with addition of capability statistical screening utilizing the KYOCERA AVX patented Q-Process to effectively remove components that may experience excessive parametric shifts or instability in operational life.

S1gma™ Pro Custom – A custom option where specific parameter limits and screening methods can be agreed based on 3 S1gma™ and Q-Process statistical screening based on capability techniques.

*selected codes, 0.001CV limit is available with S1gma™ Premium and Pro Custom options only



TMJ CONSTRUCTION



APPLICATIONS

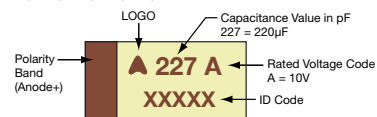
- Wireless Battery Operated Sensors
- TPM
- Automotive
- Avionics
- Safety Systems
- Energy Harvesting

For additional information on Q-process please consult the KYOCERA AVX technical publication "Reaching the Highest Reliability for Tantalum Capacitors"

(see the link: <http://www.avx.com/docs/techinfo/Qprocess.pdf>)

MARKING

A, B, C, D, E, U CASE



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) | Wt±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) |
| U | 2924 | 7361-43 | 7.30 (0.287) | 6.10 (0.240) | 4.10 (0.162) | 3.10 (0.122) | 1.30 (0.051) | 4.40 (0.173) |

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

HOW TO ORDER

| | | | | | | | | |
|-------------|-------------------------------------|---|------------------------------|---|---|---|---|--|
| TMJ | D | 227 | K | 006 | # | C | ^ | A |
| Type | Case Size See table above | Capacitance Code pF code: 1st two digits represent significant figures, 3rd digit represents multiplier (number of zeros to follow) | Tolerance K = ±10% | Rated DC Voltage 006 = 6.3Vdc 010 = 10Vdc 016 = 16Vdc 020 = 20Vdc 025 = 25Vdc 035 = 35Vdc 050 = 50Vdc | Packaging R = Pure Tin 7" Reel H = Tin Lead 7" Reel H = Non RoHS H = Please Contact Manufacturer | ESR Range C = Standard L = Low ESR | Suffix QX = S1gma™ Prime QY = S1gma™ Premium xx = S1gma™ Pro Custom | DCL A = 0.001CV C = 0.005CV |

TECHNICAL SPECIFICATIONS

| | | | | | | | | | |
|------------------------------------|---|-----|----|----|----|----|----|----|--|
| Technical Data: | All technical data relate to an ambient temperature of +25°C | | | | | | | | |
| Capacitance Range: | 0.22 µF to 680 µF | | | | | | | | |
| Capacitance Tolerance: | ±10% | | | | | | | | |
| Leakage Current DCL: | (A) 0.001CV, (C) 0.005CV | | | | | | | | |
| Rated Voltage (V _R) | ≤ +85°C: | 6.3 | 10 | 16 | 20 | 25 | 35 | 50 | |
| Category Voltage (V _C) | ≤ +125°C: | 4 | 7 | 10 | 13 | 17 | 23 | 33 | |
| Surge Voltage (V _S) | ≤ +85°C: | 8 | 13 | 20 | 26 | 32 | 46 | 65 | |
| Surge Voltage (V _S) | ≤ +125°C: | 5 | 8 | 13 | 16 | 20 | 28 | 40 | |
| Temperature Range: | -55°C to +125°C | | | | | | | | |
| Reliability: | 0.5% per 1000 hours at 85°C, V _R with 0.1Ω/V series impedance, 60% confidence level AEC-Q200 per request | | | | | | | | |

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SMD S1gma™ Series Capacitors



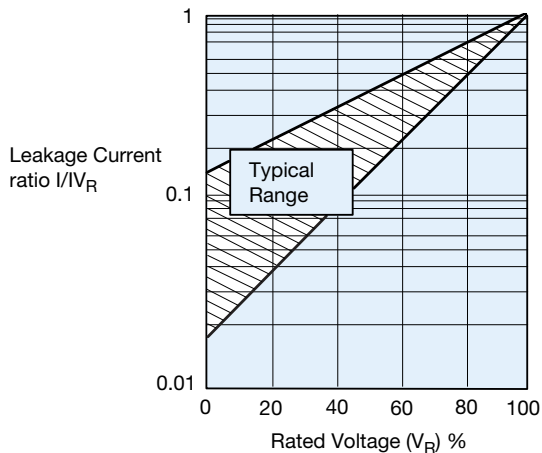
CAPACITANCE AND RATED VOLTAGE RANGE (LETTER DENOTES CASE SIZE)

| Capacitance | | Rated voltage (V _R) to 85°C (Voltage Code) | | | | | | |
|-------------|------|--|---------|---------|---------|---------|---------|---------|
| µF | Code | 6.3V (J) | 10V (A) | 16V (C) | 20V (D) | 25V (E) | 35V (V) | 50V (T) |
| 0.22 | 224 | | | | | | | A |
| 0.33 | 334 | | | | | | A | A |
| 0.47 | 474 | | | | | | A | B |
| 0.68 | 684 | | | | | | A | B |
| 1.0 | 105 | | | | | A | B | C |
| 1.5 | 155 | | | | A | A | B | C |
| 2.2 | 225 | | | A | A | B | B | C |
| 3.3 | 335 | | | A | A | B | B | C |
| 4.7 | 475 | | A | A | B | B | C | D |
| 6.8 | 685 | | A | B | B | C | C | D |
| 10 | 106 | A | A | B | C | C | C | E |
| 15 | 156 | A | B | B | C | C | D | U |
| 22 | 226 | B | B | C | C | D | D | U |
| 33 | 336 | B | C | C | D | D | E | |
| 47 | 476 | C | C | D | D | D | U | |
| 68 | 686 | C | C | D | E | U | | |
| 100 | 107 | C | D | E | E | U | | |
| 150 | 157 | D | D | E | U | | | |
| 220 | 227 | D | E | U | | | | |
| 330 | 337 | E | E | | | | | |
| 470 | 477 | E | U | | | | | |
| 680 | 687 | U | | | | | | |

Released ratings

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

LEAKAGE CURRENT vs. RATED VOLTAGE



TMJ Tantalum

SMD S1sigma™ Series Capacitors



RATINGS & PART NUMBER REFERENCE

| Part Number | Case Size | Capacitance (µF) | Rated Voltage (V) | Rated Temperature (°C) | Category Voltage (V) | Category Temperature (°C) | DCL Max. (µA) | DF Max. (%) | ESR Max. @ 100kHz (mΩ) | 100kHz RMS Current (mA) | | | MSL |
|------------------------|-----------|------------------|-------------------|------------------------|----------------------|---------------------------|---------------|-------------|------------------------|-------------------------|------|-------|-----|
| | | | | | | | | | | 25°C | 85°C | 125°C | |
| 6.3 Volt @ 85°C | | | | | | | | | | | | | |
| TMJA106K006#CQYA | A | 10 | 6.3 | 85 | 4 | 125 | 0.1 | 6 | 1500 | 224 | 201 | 89 | 3 |
| TMJA106K006#C°C | A | 10 | 6.3 | 85 | 4 | 125 | 0.3 | 6 | 1500 | 224 | 201 | 89 | 3 |
| TMJA156K006#CQYA | A | 15 | 6.3 | 85 | 4 | 125 | 0.1 | 6 | 1500 | 224 | 201 | 89 | 3 |
| TMJA156K006#C°C | A | 15 | 6.3 | 85 | 4 | 125 | 0.45 | 6 | 1500 | 224 | 201 | 89 | 3 |
| TMJB226K006#C°C | B | 22 | 6.3 | 85 | 4 | 125 | 0.66 | 6 | 600 | 376 | 339 | 151 | 3 |
| TMJB336K006#C°C | B | 33 | 6.3 | 85 | 4 | 125 | 0.99 | 6 | 600 | 376 | 339 | 151 | 3 |
| TMJC476K006#CQYA | C | 47 | 6.3 | 85 | 4 | 125 | 0.28 | 6 | 300 | 606 | 545 | 242 | 3 |
| TMJC476K006#C°C | C | 47 | 6.3 | 85 | 4 | 125 | 1.41 | 6 | 300 | 606 | 545 | 242 | 3 |
| TMJC686K006#CQYA | C | 68 | 6.3 | 85 | 4 | 125 | 0.41 | 6 | 300 | 606 | 545 | 242 | 3 |
| TMJC686K006#C°C | C | 68 | 6.3 | 85 | 4 | 125 | 2.04 | 6 | 300 | 606 | 545 | 242 | 3 |
| TMJC107K006#CQYA | C | 100 | 6.3 | 85 | 4 | 125 | 0.60 | 6 | 300 | 606 | 545 | 242 | 3 |
| TMJC107K006#C°C | C | 100 | 6.3 | 85 | 4 | 125 | 3 | 6 | 300 | 606 | 545 | 242 | 3 |
| TMJD157K006#CQYA | D | 150 | 6.3 | 85 | 4 | 125 | 0.90 | 6 | 200 | 866 | 779 | 346 | 3 |
| TMJD157K006#C°C | D | 150 | 6.3 | 85 | 4 | 125 | 4.5 | 6 | 200 | 866 | 779 | 346 | 3 |
| TMJD227K006#CQYA | D | 220 | 6.3 | 85 | 4 | 125 | 1.32 | 8 | 200 | 866 | 779 | 346 | 3 |
| TMJD227K006#C°C | D | 220 | 6.3 | 85 | 4 | 125 | 6.6 | 8 | 200 | 866 | 779 | 346 | 3 |
| TMJE337K006#C°C | E | 330 | 6.3 | 85 | 4 | 125 | 9.9 | 8 | 200 | 908 | 817 | 363 | 3 |
| TMJE477K006#CQYA | E | 470 | 6.3 | 85 | 4 | 125 | 2.82 | 8 | 200 | 908 | 817 | 363 | 3 |
| TMJE477K006#C°C | E | 470 | 6.3 | 85 | 4 | 125 | 14.1 | 8 | 200 | 908 | 817 | 363 | 3 |
| TMJU687K006#C°C | U | 680 | 6.3 | 85 | 4 | 125 | 20.4 | 12 | 250 | 812 | 731 | 325 | 3 |
| 10 Volt @ 85°C | | | | | | | | | | | | | |
| TMJA475K010#CQXC | A | 4.7 | 10 | 85 | 7 | 125 | 0.24 | 6 | 2000 | 194 | 174 | 77 | 3 |
| TMJA685K010#CQYA | A | 6.8 | 10 | 85 | 7 | 125 | 0.1 | 6 | 2000 | 194 | 174 | 77 | 3 |
| TMJA685K010#C°C | A | 6.8 | 10 | 85 | 7 | 125 | 0.34 | 6 | 2000 | 194 | 174 | 77 | 3 |
| TMJA106K010#CQYA | A | 10 | 10 | 85 | 7 | 125 | 0.10 | 6 | 2000 | 194 | 174 | 77 | 3 |
| TMJA106K010#C°C | A | 10 | 10 | 85 | 7 | 125 | 0.5 | 6 | 2000 | 194 | 174 | 77 | 3 |
| TMJB156K010#C°C | B | 15 | 10 | 85 | 7 | 125 | 0.75 | 6 | 700 | 348 | 314 | 139 | 3 |
| TMJB226K010#C°C | B | 22 | 10 | 85 | 7 | 125 | 1.1 | 6 | 700 | 348 | 314 | 139 | 3 |
| TMJC336K010#C°C | C | 33 | 10 | 85 | 7 | 125 | 1.65 | 6 | 300 | 606 | 545 | 242 | 3 |
| TMJC476K010#C°C | C | 47 | 10 | 85 | 7 | 125 | 2.35 | 6 | 300 | 606 | 545 | 242 | 3 |
| TMJC686K010#C°C | C | 68 | 10 | 85 | 7 | 125 | 3.4 | 6 | 300 | 606 | 545 | 242 | 3 |
| TMJD107K010#C°C | D | 100 | 10 | 85 | 7 | 125 | 5.00 | 6 | 150 | 1000 | 900 | 400 | 3 |
| TMJD157K010#C°C | D | 150 | 10 | 85 | 7 | 125 | 7.50 | 8 | 150 | 1000 | 900 | 400 | 3 |
| TMJE227K010#C°C | E | 220 | 10 | 85 | 7 | 125 | 11 | 8 | 150 | 1049 | 944 | 420 | 3 |
| TMJE337K010#CQYA | E | 330 | 10 | 85 | 7 | 125 | 3.3 | 8 | 150 | 1049 | 944 | 420 | 3 |
| TMJE337K010#C°C | E | 330 | 10 | 85 | 7 | 125 | 16.5 | 8 | 150 | 1049 | 944 | 420 | 3 |
| TMJU477K010#C°C | U | 470 | 10 | 85 | 7 | 125 | 23.5 | 12 | 200 | 908 | 817 | 363 | 3 |
| 16 Volt @ 85°C | | | | | | | | | | | | | |
| TMJA225K016#CQXC | A | 2.2 | 16 | 85 | 10 | 125 | 0.18 | 6 | 3500 | 146 | 132 | 59 | 3 |
| TMJA335K016#CQXC | A | 3.3 | 16 | 85 | 10 | 125 | 0.26 | 6 | 3500 | 146 | 132 | 59 | 3 |
| TMJA475K016#C°C | A | 4.7 | 16 | 85 | 10 | 125 | 0.38 | 6 | 3500 | 146 | 132 | 59 | 3 |
| TMJB685K016#C°C | B | 6.8 | 16 | 85 | 10 | 125 | 0.54 | 6 | 1200 | 266 | 240 | 106 | 3 |
| TMJB106K016#C°C | B | 10 | 16 | 85 | 10 | 125 | 0.80 | 6 | 1200 | 266 | 240 | 106 | 3 |
| TMJB156K016#C°C | B | 15 | 16 | 85 | 10 | 125 | 1.20 | 6 | 1200 | 266 | 240 | 106 | 3 |
| TMJC226K016#C°C | C | 22 | 16 | 85 | 10 | 125 | 1.76 | 6 | 350 | 561 | 505 | 224 | 3 |
| TMJC336K016#C°C | C | 33 | 16 | 85 | 10 | 125 | 2.64 | 6 | 350 | 561 | 505 | 224 | 3 |
| TMJD476K016#C°C | D | 47 | 16 | 85 | 10 | 125 | 3.76 | 6 | 200 | 866 | 779 | 346 | 3 |
| TMJD686K016#C°C | D | 68 | 16 | 85 | 10 | 125 | 5.44 | 6 | 200 | 866 | 779 | 346 | 3 |
| TMJE107K016#C°C | E | 100 | 16 | 85 | 10 | 125 | 8.00 | 6 | 150 | 1049 | 944 | 420 | 3 |
| TMJE157K016#C°C | E | 150 | 16 | 85 | 10 | 125 | 12 | 6 | 150 | 1049 | 944 | 420 | 3 |
| TMJU227K016#C°C | U | 220 | 16 | 85 | 10 | 125 | 17.6 | 1 | 200 | 908 | 817 | 363 | 3 |
| 20 Volt @ 85°C | | | | | | | | | | | | | |
| TMJA155K020#CQXC | A | 1.5 | 20 | 85 | 13 | 125 | 0.15 | 6 | 3000 | 158 | 142 | 63 | 3 |
| TMJA225K020#CQXC | A | 2.2 | 20 | 85 | 13 | 125 | 0.22 | 6 | 3000 | 158 | 142 | 63 | 3 |
| TMJA335K020#C°C | A | 3.3 | 20 | 85 | 13 | 125 | 0.33 | 6 | 3000 | 158 | 142 | 63 | 3 |
| TMJB475K020#C°C | B | 4.7 | 20 | 85 | 13 | 125 | 0.47 | 6 | 1000 | 292 | 262 | 117 | 3 |
| TMJB685K020#C°C | B | 6.8 | 20 | 85 | 13 | 125 | 0.68 | 6 | 1000 | 292 | 262 | 117 | 3 |
| TMJC106K020#C°C | C | 10 | 20 | 85 | 13 | 125 | 1 | 6 | 500 | 469 | 422 | 188 | 3 |
| TMJC156K020#C°C | C | 15 | 20 | 85 | 13 | 125 | 1.5 | 6 | 500 | 469 | 422 | 188 | 3 |
| TMJC226K020#C°C | C | 22 | 20 | 85 | 13 | 125 | 2.2 | 6 | 500 | 469 | 422 | 188 | 3 |
| TMJD336K020#C°C | D | 33 | 20 | 85 | 13 | 125 | 3.3 | 6 | 250 | 775 | 697 | 310 | 3 |
| TMJD476K020#C°C | D | 47 | 20 | 85 | 13 | 125 | 4.70 | 6 | 250 | 775 | 697 | 310 | 3 |
| TMJE686K020#C°C | E | 68 | 20 | 85 | 13 | 125 | 6.8 | 6 | 200 | 908 | 817 | 363 | 3 |
| TMJE107K020#C°C | E | 100 | 20 | 85 | 13 | 125 | 10 | 6 | 200 | 908 | 817 | 363 | 3 |
| TMJU157K020#CQXC | U | 150 | 20 | 85 | 13 | 125 | 15 | 12 | 250 | 812 | 731 | 325 | 3 |
| 25 Volt @ 85°C | | | | | | | | | | | | | |
| TMJA105K025#CQXC | A | 1 | 25 | 85 | 17 | 125 | 0.13 | 4 | 3000 | 158 | 142 | 63 | 3 |
| TMJA155K025#CQXC | A | 1.5 | 25 | 85 | 17 | 125 | 0.19 | 6 | 3000 | 158 | 142 | 63 | 3 |
| TMJB225K025#C°C | B | 2.2 | 25 | 85 | 17 | 125 | 0.28 | 6 | 2000 | 206 | 186 | 82 | 3 |
| TMJB335K025#C°C | B | 3.3 | 25 | 85 | 17 | 125 | 0.41 | 6 | 2000 | 206 | 186 | 82 | 3 |

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SMD S1gma™ Series Capacitors



RATINGS & PART NUMBER REFERENCE

| Part Number | Case Size | Capacitance (µF) | Rated Voltage (V) | Rated Temperature (°C) | Category Voltage (V) | Category Temperature (°C) | DCL Max. (µA) | DF Max. (%) | ESR Max. @ 100kHz (mΩ) | 100kHz RMS Current (mA) | | | MSL |
|-----------------------|-----------|------------------|-------------------|------------------------|----------------------|---------------------------|---------------|-------------|------------------------|-------------------------|------|-------|-----|
| | | | | | | | | | | 25°C | 85°C | 125°C | |
| TMJB475K025#C*C | B | 4.7 | 25 | 85 | 17 | 125 | 0.59 | 6 | 2000 | 206 | 186 | 82 | 3 |
| TMJC685K025#C*C | C | 6.8 | 25 | 85 | 17 | 125 | 0.85 | 6 | 600 | 428 | 385 | 171 | 3 |
| TMJC106K025#C*C | C | 10 | 25 | 85 | 17 | 125 | 1.25 | 6 | 600 | 428 | 385 | 171 | 3 |
| TMJC156K025#C*C | C | 15 | 25 | 85 | 17 | 125 | 1.88 | 6 | 600 | 428 | 385 | 171 | 3 |
| TMJD226K025#CQYA | D | 22 | 25 | 85 | 17 | 125 | 0.55 | 6 | 400 | 612 | 551 | 245 | 3 |
| TMJD226K025#C*C | D | 22 | 25 | 85 | 17 | 125 | 2.75 | 6 | 400 | 612 | 551 | 245 | 3 |
| TMJD336K025#CQYA | D | 33 | 25 | 85 | 17 | 125 | 0.82 | 6 | 400 | 612 | 551 | 245 | 3 |
| TMJD336K025#C*C | D | 33 | 25 | 85 | 17 | 125 | 4.13 | 6 | 400 | 612 | 551 | 245 | 3 |
| TMJD476K025#C*C | D | 47 | 25 | 85 | 17 | 125 | 5.88 | 6 | 400 | 612 | 551 | 245 | 3 |
| TMJU686K025#CQXC | U | 68 | 25 | 85 | 17 | 125 | 8.5 | 12 | 450 | 606 | 545 | 242 | 3 |
| TMJU107K025#CQXC | U | 100 | 25 | 85 | 17 | 125 | 12.5 | 12 | 450 | 606 | 545 | 242 | 3 |
| 35 Volt @ 85°C | | | | | | | | | | | | | |
| TMJA334K035#CQXC | A | 0.33 | 35 | 85 | 23 | 125 | 0.1 | 4 | 6000 | 112 | 101 | 45 | 3 |
| TMJA474K035#CQXC | A | 0.47 | 35 | 85 | 23 | 125 | 0.1 | 4 | 6000 | 112 | 101 | 45 | 3 |
| TMJA684K035#CQXC | A | 0.68 | 35 | 85 | 23 | 125 | 0.12 | 4 | 6000 | 112 | 101 | 45 | 3 |
| TMJB105K035#CQXC | B | 1 | 35 | 85 | 23 | 125 | 0.18 | 4 | 2500 | 184 | 166 | 74 | 3 |
| TMJB155K035#C*C | B | 1.5 | 35 | 85 | 23 | 125 | 0.26 | 6 | 2500 | 184 | 166 | 74 | 3 |
| TMJB225K035#C*C | B | 2.2 | 35 | 85 | 23 | 125 | 0.39 | 6 | 2500 | 184 | 166 | 74 | 3 |
| TMJB335K035#C*C | B | 3.3 | 35 | 85 | 23 | 125 | 0.58 | 6 | 2500 | 184 | 166 | 74 | 3 |
| TMJC475K035#CQYA | C | 4.7 | 35 | 85 | 23 | 125 | 0.16 | 6 | 600 | 428 | 385 | 171 | 3 |
| TMJC475K035#C*C | C | 4.7 | 35 | 85 | 23 | 125 | 0.82 | 6 | 600 | 428 | 385 | 171 | 3 |
| TMJC685K035#C*C | C | 6.8 | 35 | 85 | 23 | 125 | 1.19 | 6 | 600 | 428 | 385 | 171 | 3 |
| TMJC106K035#C*C | C | 10 | 35 | 85 | 23 | 125 | 1.75 | 6 | 600 | 428 | 385 | 171 | 3 |
| TMJD156K035#CQYA | D | 15 | 35 | 85 | 23 | 125 | 0.52 | 6 | 400 | 612 | 551 | 245 | 3 |
| TMJD156K035#C*C | D | 15 | 35 | 85 | 23 | 125 | 2.63 | 6 | 400 | 612 | 551 | 245 | 3 |
| TMJD226K035#CQYA | D | 22 | 35 | 85 | 23 | 125 | 0.77 | 6 | 400 | 612 | 551 | 245 | 3 |
| TMJD226K035#C*C | D | 22 | 35 | 85 | 23 | 125 | 3.85 | 6 | 400 | 612 | 551 | 245 | 3 |
| TMJE336K035#CQYA | E | 33 | 35 | 85 | 23 | 125 | 1.15 | 6 | 250 | 812 | 731 | 325 | 3 |
| TMJE336K035#C*C | E | 33 | 35 | 85 | 23 | 125 | 5.78 | 6 | 250 | 812 | 731 | 325 | 3 |
| TMJU476K035#CQXC | U | 47 | 35 | 85 | 23 | 125 | 8.23 | 12 | 300 | 742 | 667 | 297 | 3 |
| TMJU476K035#CQYA | U | 47 | 35 | 85 | 23 | 125 | 1.64 | 12 | 300 | 742 | 667 | 297 | 3 |
| 50 Volt @ 85°C | | | | | | | | | | | | | |
| TMJA224K050#CQXC | A | 0.22 | 50 | 85 | 33 | 125 | 0.1 | 4 | 7000 | 104 | 93 | 41 | 3 |
| TMJA334K050#CQXC | A | 0.33 | 50 | 85 | 33 | 125 | 0.1 | 4 | 7000 | 104 | 93 | 41 | 3 |
| TMJB474K050#CQXC | B | 0.47 | 50 | 85 | 33 | 125 | 0.12 | 4 | 2000 | 206 | 186 | 82 | 3 |
| TMJB684K050#CQXC | B | 0.68 | 50 | 85 | 33 | 125 | 0.17 | 4 | 2000 | 206 | 186 | 82 | 3 |
| TMJC105K050#C*C | C | 1 | 50 | 85 | 33 | 125 | 0.25 | 4 | 1500 | 271 | 244 | 108 | 3 |
| TMJC155K050#C*C | C | 1.5 | 50 | 85 | 33 | 125 | 0.38 | 6 | 1500 | 271 | 244 | 108 | 3 |
| TMJC225K050#CQYA | C | 2.2 | 50 | 85 | 33 | 125 | 0.11 | 6 | 1500 | 271 | 244 | 108 | 3 |
| TMJC225K050#C*C | C | 2.2 | 50 | 85 | 33 | 125 | 0.55 | 6 | 1500 | 271 | 244 | 108 | 3 |
| TMJC335K050#CQYA | C | 3.3 | 50 | 85 | 33 | 125 | 0.17 | 6 | 1500 | 271 | 244 | 108 | 3 |
| TMJC335K050#C*C | C | 3.3 | 50 | 85 | 33 | 125 | 0.83 | 6 | 1500 | 271 | 244 | 108 | 3 |
| TMJD475K050#C*C | D | 4.7 | 50 | 85 | 33 | 125 | 1.18 | 4.5 | 600 | 500 | 450 | 200 | 3 |
| TMJD685K050#C*C | D | 6.8 | 50 | 85 | 33 | 125 | 1.7 | 4.5 | 600 | 500 | 450 | 200 | 3 |
| TMJE106K050#CQYA | E | 10 | 50 | 85 | 33 | 125 | 0.5 | 4.5 | 400 | 642 | 578 | 257 | 3 |
| TMJE106K050#C*C | E | 10 | 50 | 85 | 33 | 125 | 2.5 | 4.5 | 400 | 642 | 578 | 257 | 3 |
| TMJU156K050#CQXC | U | 15 | 50 | 85 | 33 | 125 | 3.75 | 12 | 450 | 606 | 545 | 242 | 3 |
| TMJU226K050#CQXC | U | 22 | 50 | 85 | 33 | 125 | 5.5 | 12 | 450 | 606 | 545 | 242 | 3 |

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, 0.5V RMS with a maximum DC bias of 2.2 volts. DCL is measured at rated voltage after 5 minutes. The EIA & CECC standards for low ESR Solid Tantalum Capacitors allow an ESR movement to 1.25 times catalogue limit post mounting. For typical weight and composition see page 259.

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

TMJ Tantalum

SMD S1gma™ Series Capacitors



QUALIFICATION TABLE

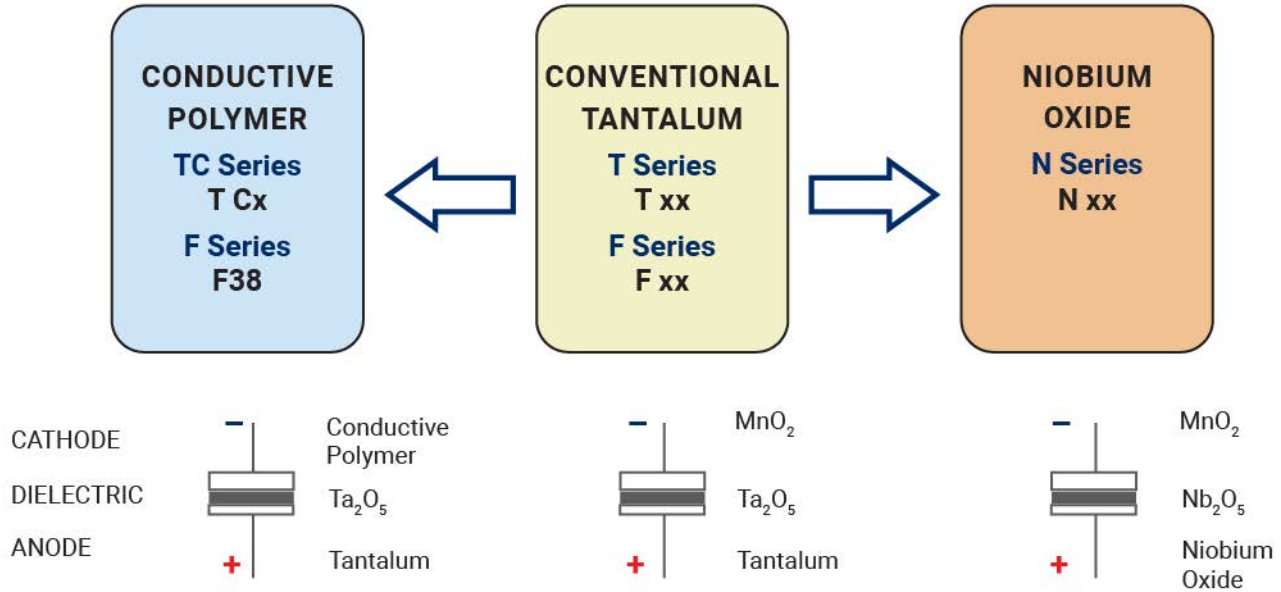
| TEST | TMJ S1gma™ series (Temperature range -55°C to +125°C) | | | | | | | | | | |
|------------------------------|---|---------------|---------------|--------------------|------------------------------------|-----------|-----------|-----------|----------|-----------|--|
| | Condition | | | Characteristics | | | | | | | |
| Endurance | Apply rated voltage (Ur) at 85°C and / or category voltage (Uc) at 125°C for 2000 hours through a circuit impedance of $\leq 0.1\Omega/V$. Stabilize at room temperature for 1-2 hours before measuring. | | | Visual examination | no visible damage | | | | | | |
| | | | | DCL | 2 x initial limit | | | | | | |
| | | | | $\Delta C/C$ | within $\pm 10\%$ of initial value | | | | | | |
| | | | | DF | initial limit | | | | | | |
| | | | | ESR | 1.25 x initial limit | | | | | | |
| Storage Life | Store at 125°C, no voltage applied, for 2000 hours. Stabilize at room temperature for 1-2 hours before measuring. | | | Visual examination | no visible damage | | | | | | |
| | | | | DCL | 2 x initial limit | | | | | | |
| | | | | $\Delta C/C$ | within $\pm 10\%$ of initial value | | | | | | |
| | | | | DF | initial limit | | | | | | |
| | | | | ESR | 1.25 x initial limit | | | | | | |
| Humidity | Store at 65°C and 90 - 95% relative humidity for 500 hours, with no applied voltage. Stabilize at room temperature and humidity for 1-2 hours before measuring. | | | Visual examination | no visible damage | | | | | | |
| | | | | DCL | 3 x initial limit | | | | | | |
| | | | | $\Delta C/C$ | within $\pm 10\%$ of initial value | | | | | | |
| | | | | DF | 1.2 x initial limit | | | | | | |
| | | | | ESR | 1.25 x initial limit | | | | | | |
| Biased Humidity | Apply rated voltage (Ur) at 85°C, 85% relative humidity for 1000 hours. Stabilize at room temperature and humidity for 1-2 hours before measuring. | | | Visual examination | no visible damage | | | | | | |
| | | | | DCL | 3 x initial limit | | | | | | |
| | | | | $\Delta C/C$ | within $\pm 10\%$ of initial value | | | | | | |
| | | | | DF | 1.2 x initial limit | | | | | | |
| | | | | ESR | 1.25 x initial limit | | | | | | |
| Temperature Stability | Step | Temperature°C | Duration(min) | | +20°C | -55°C | +20°C | +85°C | +125°C | +20°C | |
| | 1 | +20 | 15 | | | | | | | | |
| | 2 | -55 | 15 | DCL | IL* | n/a | IL* | 10 x IL* | 15 x IL* | 1.5 x IL* | |
| | 3 | +20 | 15 | $\Delta C/C$ | n/a | +0/-10% | $\pm 5\%$ | +10/-0% | +15/-0% | $\pm 5\%$ | |
| | 4 | +85 | 15 | DF | IL* | 1.5 x IL* | IL* | 1.5 x IL* | 2 x IL* | IL* | |
| | 5 | +125 | 15 | | | | | | | | |
| | 6 | +20 | 15 | ESR | 1.25xIL* | 2.5xIL* | 1.25xIL* | 1.25xIL* | 1.25xIL* | 1.25xIL* | |
| Surge Voltage | Apply 1.3x category voltage (Uc) at 125°C for 1000 cycles of duration 6 min (30 sec charge, 5 min 30 sec discharge) through a charge / discharge resistance of 1000 Ω | | | Visual examination | no visible damage | | | | | | |
| | | | | DCL | 2 x initial limit | | | | | | |
| | | | | $\Delta C/C$ | within $\pm 5\%$ of initial value | | | | | | |
| | | | | DF | initial limit | | | | | | |
| | | | | ESR | 1.25 x initial limit | | | | | | |
| Mechanical Shock | MIL-STD-202, Method 213, Condition C | | | Visual examination | no visible damage | | | | | | |
| | | | | DCL | initial limit | | | | | | |
| | | | | $\Delta C/C$ | within $\pm 5\%$ of initial value | | | | | | |
| | | | | DF | initial limit | | | | | | |
| | | | | ESR | initial limit | | | | | | |
| Vibration | MIL-STD-202, Method 204, Condition D | | | Visual examination | no visible damage | | | | | | |
| | | | | DCL | initial limit | | | | | | |
| | | | | $\Delta C/C$ | within $\pm 5\%$ of initial value | | | | | | |
| | | | | DF | initial limit | | | | | | |
| | | | | ESR | initial limit | | | | | | |

*Initial Limit

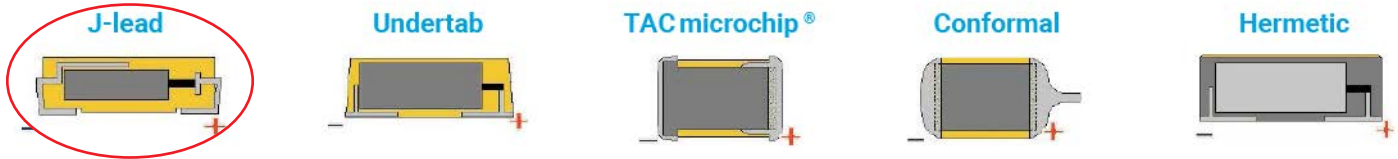
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