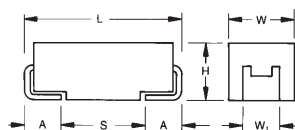


# TMJ Tantalum SMD S1gma™ Series Capacitors

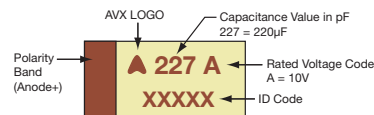


## TMJ CONSTRUCTION



## MARKING

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



## HOW TO ORDER

| TMJ  | D                            | 227                                                                                                                                    | K                     | 006                                                                                                                        | #                                                                                               | C                                        | ^                                                                            | A                                 |
|------|------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|-----------------------|----------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|------------------------------------------|------------------------------------------------------------------------------|-----------------------------------|
| Type | Case Size<br>See table above | Capacitance Code<br>pF code: 1st two digits represent significant figures, 3rd digit represents multiplier (number of zeros to follow) | Tolerance<br>K = ±10% | Rated DC Voltage<br>006 = 6.3Vdc<br>010 = 10Vdc<br>016 = 16Vdc<br>020 = 20Vdc<br>025 = 25Vdc<br>035 = 35Vdc<br>050 = 50Vdc | Packaging<br>R = Pure Tin 7" Reel<br>H = Tin Lead 7" Reel<br>(Contact Manufacturer)<br>Non RoHS | ESR Range<br>C = Standard<br>L = Low ESR | Suffix<br>QX = S1gma™ Prime<br>QY = S1gma™ Premium<br>xx = S1gma™ Pro Custom | DCL<br>A = 0.001CV<br>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 <sub>R</sub> )    | ≤ +85°C:                                                                                                   | 6.3 | 10 | 16 | 20 | 25 | 35 | 50 |
| Category Voltage (V <sub>C</sub> ) | ≤ +125°C:                                                                                                  | 4   | 7  | 10 | 13 | 17 | 23 | 33 |
| Surge Voltage (V <sub>S</sub> )    | ≤ +85°C:                                                                                                   | 8   | 13 | 20 | 26 | 32 | 46 | 65 |
| Surge Voltage (V <sub>S</sub> )    | ≤ +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, VR with 0.1Ω/V series impedance, 60% confidence level<br>AEC-Q200 per request |     |    |    |    |    |    |    |

The AVX 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
- (2x improvement over commercial series)
- improved DCL limits 0.001CV\* and 0.005CV

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

**S1gma™ Premium** – S1gma™ Prime, with addition of capability statistical screening utilising the 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

## APPLICATIONS

- Wireless battery operated sensors
- TPM
- Automotive
- Avionics
- Safety systems
- Energy harvesting

For additional information on Q-process please consult the AVX technical publication "Reaching the Highest Reliability for Tantalum Capacitors" (see the link: <http://www.avx.com/docs/techinfo/Qprocess.pdf>)

## 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 <sub>1</sub> ±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 (0.120)                 | 1.30 (0.051)                 | 4.40 (0.173) |

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

# TMJ Tantalum SMD S1gma™ Series Capacitors



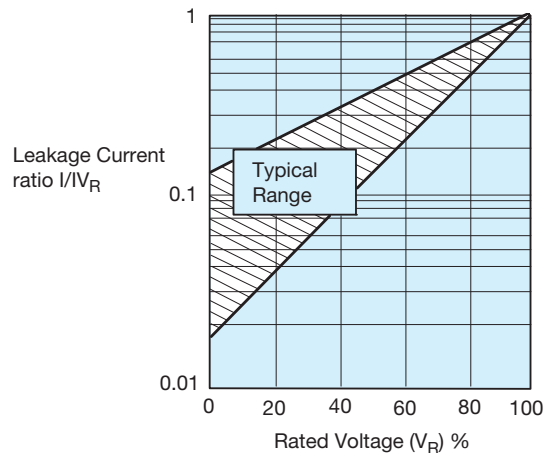
## CAPACITANCE AND RATED VOLTAGE RANGE (LETTER DENOTES CASE SIZE)

| Capacitance |      | Rated voltage (V <sub>R</sub> ) 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                                                      |         |         |         |         |         |         |

Available Ratings

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

## LEAKAGE CURRENT vs. RATED VOLTAGE



# TMJ Tantalum SMD S1gma™ Series Capacitors



## RATINGS & PART NUMBER REFERENCE

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

# TMJ Tantalum SMD S1gma™ Series Capacitors



## RATINGS & PART NUMBER REFERENCE

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

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.

**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.**

# TMJ Tantalum SMD S1gma™ Series Capacitors



## QUALIFICATION TABLE

| TEST                  | TMJ S1gma™ 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                | 2 x initial limit            |           |            |            |            |            |
|                       |                                                                                                                                                                                                                                                                                                 |               |               | ΔC/C               | within ±10% of initial value |           |            |            |            |            |
|                       |                                                                                                                                                                                                                                                                                                 |               |               | DF                 | initial limit                |           |            |            |            |            |
|                       |                                                                                                                                                                                                                                                                                                 |               |               | ESR                | 1.25 x initial limit         |           |            |            |            |            |
| Storage Life          | Determine after application of 125°C temperature, unpowered for 2000 +48/-0 hours at 125 ± 2°C and then leaving 1 - 2 hours at room temperature.                                                                                                                                                |               |               | Visual examination | no visible damage            |           |            |            |            |            |
|                       |                                                                                                                                                                                                                                                                                                 |               |               | DCL                | 2 x initial limit            |           |            |            |            |            |
|                       |                                                                                                                                                                                                                                                                                                 |               |               | ΔC/C               | within ±10% of initial value |           |            |            |            |            |
|                       |                                                                                                                                                                                                                                                                                                 |               |               | DF                 | initial limit                |           |            |            |            |            |
|                       |                                                                                                                                                                                                                                                                                                 |               |               | ESR                | 1.25 x initial limit         |           |            |            |            |            |
| Humidity              | Determine after leaving for 500 hours at 65 ± 2°C and 90 - 95% relative humidity and then leaving 1 - 2 hours at room temperature.                                                                                                                                                              |               |               | Visual examination | no visible damage            |           |            |            |            |            |
|                       |                                                                                                                                                                                                                                                                                                 |               |               | DCL                | 3 x initial limit            |           |            |            |            |            |
|                       |                                                                                                                                                                                                                                                                                                 |               |               | ΔC/C               | within ±10% of initial value |           |            |            |            |            |
|                       |                                                                                                                                                                                                                                                                                                 |               |               | DF                 | 1.2 x initial limit          |           |            |            |            |            |
|                       |                                                                                                                                                                                                                                                                                                 |               |               | ESR                | 1.25 x initial limit         |           |            |            |            |            |
| Biased Humidity       | Determine after leaving for 1000 hours at 85±2°C, 85% relative humidity and rated voltage and then recovery 1-2 hours at room temperature.                                                                                                                                                      |               |               | Visual examination | no visible damage            |           |            |            |            |            |
|                       |                                                                                                                                                                                                                                                                                                 |               |               | DCL                | 3 x initial limit            |           |            |            |            |            |
|                       |                                                                                                                                                                                                                                                                                                 |               |               | ΔC/C               | within ±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±2         | 15            | DCL                | IL*                          | n/a       | IL*        | 10 x IL*   | 15 x IL*   | 1.5 x IL*  |
|                       | 2                                                                                                                                                                                                                                                                                               | -55+0/-3      | 15            | ΔC/C               | n/a                          | +0/-10%   | ±5%        | +10/-0%    | +15/-0%    | ±5%        |
|                       | 3                                                                                                                                                                                                                                                                                               | +20±2         | 15            | DF                 | IL*                          | 1.5 x IL* | IL*        | 1.5 x IL*  | 2 x IL*    | IL*        |
|                       | 4                                                                                                                                                                                                                                                                                               | +85+3/-0      | 15            |                    |                              |           |            |            |            |            |
|                       | 5                                                                                                                                                                                                                                                                                               | +125+3/-0     | 15            |                    |                              |           |            |            |            |            |
|                       | 6                                                                                                                                                                                                                                                                                               | +20±2         | 15            | ESR                | 1.25 x IL*                   | 2.5 x IL* | 1.25 x IL* | 1.25 x IL* | 1.25 x IL* | 1.25 x IL* |
| Surge Voltage         | Test temperature: 125°C+3/0°C<br>Test voltage: Category voltage at 125°C<br>Surge voltage: 1.3 x category voltage at 125°C<br>Series protection resistance 1000±100Ω<br>Discharge resistance: 1000Ω<br>Number of cycles: 1000x<br>Cycle duration: 6 min (30 sec charge, 5 min 30 sec discharge) |               |               | Visual examination | no visible damage            |           |            |            |            |            |
|                       |                                                                                                                                                                                                                                                                                                 |               |               | DCL                | 2 x initial limit            |           |            |            |            |            |
|                       |                                                                                                                                                                                                                                                                                                 |               |               | ΔC/C               | within ±5% of initial value  |           |            |            |            |            |
|                       |                                                                                                                                                                                                                                                                                                 |               |               | DF                 | initial limit                |           |            |            |            |            |
|                       |                                                                                                                                                                                                                                                                                                 |               |               | ESR                | 1.25 x initial limit         |           |            |            |            |            |

\*Initial Limit



**Стандарт  
Электрон  
Связь**

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