

# THJ Series



## High Temperature Tantalum Chip Capacitor



### FEATURES

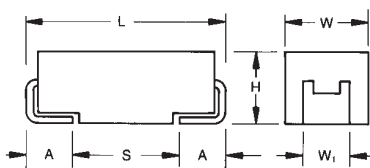
- Improved reliability – 2x standard
- 175°C @ 0.5V<sub>R</sub> continuous operation
- CV range: 0.10-220µF / 6.3-50V
- 5 case sizes available
- Low ESR options on approval
- High temperature automotive and industry applications



SnPb termination option is not RoHS compliant.

### APPLICATIONS

- Automotive ECU and ABS control electronics
- Geothermal instrumentation



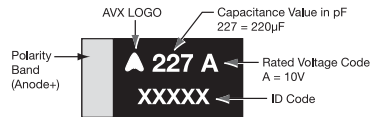
### CASE DIMENSIONS: millimeters (inches)

| 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) |

W<sub>1</sub> dimension applies to the termination width for A dimensional area only.

### MARKING

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



### HOW TO ORDER

| THJ         | B                                   | 105   | *                                    | 035   | R  | JN   | -   |
|-------------|-------------------------------------|---|--------------------------------------|---|--|--|---|
| <b>Type</b> | <b>Case Size</b><br>See table above | <b>Capacitance Code</b><br>pF code: 1st two digits represent significant figures<br>3rd digit represents multiplier (number of zeros to follow) | <b>Tolerance</b><br>K=±10%<br>M=±20% | <b>Rated DC Voltage</b><br>006=6.3Vdc<br>010=10Vdc<br>016=16Vdc<br>020=20Vdc<br>025=25Vdc<br>035=35Vdc<br>050=50Vdc | <b>Packaging</b><br>R = Pure Tin 7" Reel<br>S = Pure Tin 13" Reel<br>A = Gold Plating 7" Reel<br>B = Gold Plating 13" Reel<br>H = Tin Lead 7" Reel<br>(Contact Manufacturer)<br>K = Tin Lead 13" Reel<br>(Contact Manufacturer)<br>H, K = Non RoHS | <b>Standard Suffix</b><br>OR<br><b>0100</b><br>Low ESR in mΩ | <b>Additional characters may be added for special requirements</b><br>V = Dry pack Option |

### TECHNICAL SPECIFICATIONS

|                                    |   |     |    |    |    |    |    |    |  |
|------------------------------------|---|-----|----|----|----|----|----|----|--|
| Technical Data:                    | All technical data relate to an ambient temperature of +25°C  |     |    |    |    |    |    |    |  |
| Capacitance Range:                 | 0.10 µF to 220 µF   |     |    |    |    |    |    |    |  |
| Capacitance Tolerance:             | ±10%; ±20%  |     |    |    |    |    |    |    |  |
| 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 |  |
| Category Voltage (V <sub>C</sub> ) | ≤ +175°C:   | 3   | 5  | 8  | 10 | 12 | 17 | 25 |  |
| 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 |  |
| Surge Voltage (V <sub>S</sub> )    | ≤ +175°C:   | 4   | 6  | 10 | 12 | 15 | 21 | 30 |  |
| Temperature Range:                 | -55°C to 175°C voltage derating.  |     |    |    |    |    |    |    |  |
| Reliability:                       | 0.5% per 1000 hours at 85°C, V <sub>R</sub> with 0.1Ω/V series impedance, 60% confidence level, 3.5 Fits at 40°C, 0.5V <sub>R</sub> |     |    |    |    |    |    |    |  |
| Termination Finish:                | Sn Plating (standard), Gold Plating available on request  |     |    |    |    |    |    |    |  |
|                                    | Meets requirements of AEC-Q200  |     |    |    |    |    |    |    |  |



## High Temperature Tantalum Chip Capacitor

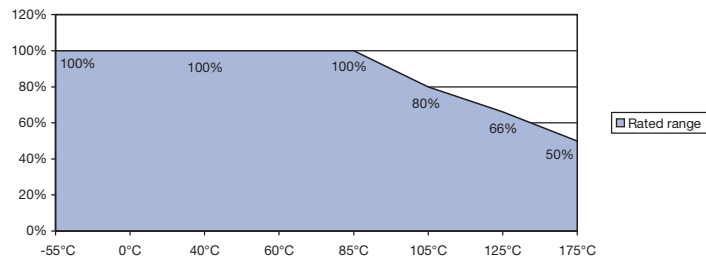
### CAPACITANCE AND RATED VOLTAGE RANGE (LETTER DENOTES CASE SIZE)

| Capacitance   |      | Rated voltage ( $V_R$ ) to 85°C (Voltage Code) |         |            |         |            |           |         |
|---------------|------|--|---------|------------|---------|------------|-----------|---------|
| $\mu\text{F}$ | Code | 6.3V (J)                                       | 10V (A) | 16V (C)    | 20V (D) | 25V (E)    | 35V (V)   | 50V (T) |
| 0.10          | 104  |  |         |            |         |            | A         |         |
| 0.15          | 154  |  |         |            |         |            | A         |         |
| 0.22          | 224  |  |         |            |         |            | A         |         |
| 0.33          | 334  |  |         |            |         |            | A         |         |
| 0.47          | 474  |  |         |            |         | A          | B         |         |
| 0.68          | 684  |  |         |            |         | A          | B         |         |
| 1.0           | 105  |  |         |            |         |            | A/B       |         |
| 1.5           | 155  |  |         |            | A       |            | C         |         |
| 2.2           | 225  |  |         | A, A(1500) |         | B, B(1500) | C         |         |
| 3.3           | 335  |  | A       | A          | B       |            | C         | D       |
| 4.7           | 475  | A  | A       | A/B        |         |            | C         | D       |
| 6.8           | 685  | A  | A       | A/B        |         | C          | D         | D       |
| 10            | 106  | A  | A/B     | B          |         | C          | D         | D/E     |
| 15            | 156  | B  | B       | B          | C       |            | D         |         |
| 22            | 226  | B  | B       | C, C(500)  |         | D          | D, D(300) |         |
| 33            | 336  | B  | C       | C          | D       | D          | E, E(150) |         |
| 47            | 476  | C  | C       | C/D        |         |            |           |         |
| 68            | 686  | C  | D       | D          |         |            |           |         |
| 100           | 107  | D  | D       | E          |         |            |           |         |
| 150           | 157  | D  |         |            |         |            |           |         |
| 220           | 227  |  | E       |            |         |            |           |         |

Available Ratings, (ESR ratings in mOhms in brackets)

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

THJ 175°C Voltage vs Temperature Rating



# THJ Series



## High Temperature Tantalum Chip Capacitor

### RATINGS & PART NUMBER REFERENCE

| AVX Part No.           | Case Size | Capacitance (μF) | Rated Voltage (V) | Rated Temperature (°C) | Category Voltage (V) | Category Temperature (°C) | DCL Max. (μA) | DF Max. (%) | ESR Max. @ 100kHz (Ω) | MSL            | 100kHz RMS Current (mA) |      |       |       |
|------------------------|-----------|------------------|-------------------|------------------------|----------------------|---------------------------|---------------|-------------|-----------------------|----------------|-------------------------|------|-------|-------|
|                        |           |                  |                   |                        |                      |                           |               |             |                       |                | 25°C                    | 85°C | 125°C | 175°C |
| <b>6.3 Volt @ 85°C</b> |           |                  |                   |                        |                      |                           |               |             |                       |                |                         |      |       |       |
| THJA475*006#JN         | A         | 4.7              | 6.3               | 85                     | 3                    | 175                       | 0.5           | 6           | 6                     | 1              | 112                     | 101  | 45    | 22    |
| THJA685*006#JN         | A         | 6.8              | 6.3               | 85                     | 3                    | 175                       | 0.5           | 4.5         | 2.6                   | 1              | 170                     | 153  | 68    | 34    |
| THJA106*006#JN         | A         | 10               | 6.3               | 85                     | 3                    | 175                       | 0.6           | 4.5         | 2.2                   | 1              | 185                     | 166  | 74    | 37    |
| THJB156*006#JN         | B         | 15               | 6.3               | 85                     | 3                    | 175                       | 0.9           | 6           | 2.5                   | 1              | 184                     | 166  | 74    | 37    |
| THJB226*006#JN         | B         | 22               | 6.3               | 85                     | 3                    | 175                       | 1.4           | 6           | 2.5                   | 1              | 184                     | 166  | 74    | 37    |
| THJB336*006#JN         | B         | 33               | 6.3               | 85                     | 3                    | 175                       | 1.9           | 6           | 2.2                   | 1              | 197                     | 177  | 79    | 39    |
| THJC476*006#JN         | C         | 47               | 6.3               | 85                     | 3                    | 175                       | 3.0           | 6           | 1.6                   | 1              | 262                     | 236  | 105   | 52    |
| THJC686*006#JN         | C         | 68               | 6.3               | 85                     | 3                    | 175                       | 4.3           | 6           | 1.5                   | 1              | 271                     | 244  | 108   | 54    |
| THJD107*006#JN         | D         | 100              | 6.3               | 85                     | 3                    | 175                       | 6             | 4.5         | 0.4                   | 1 <sup>U</sup> | 612                     | 551  | 245   | 122   |
| THJD157*006#JN         | D         | 150              | 6.3               | 85                     | 3                    | 175                       | 9.5           | 6           | 0.9                   | 1 <sup>U</sup> | 408                     | 367  | 163   | 82    |
| <b>10 Volt @ 85°C</b>  |           |                  |                   |                        |                      |                           |               |             |                       |                |                         |      |       |       |
| THJA335*010#JN         | A         | 3.3              | 10                | 85                     | 5                    | 175                       | 0.5           | 6           | 5.5                   | 1              | 117                     | 105  | 47    | 23    |
| THJA475*010#JN         | A         | 4.7              | 10                | 85                     | 5                    | 175                       | 0.5           | 4.5         | 2.9                   | 1              | 161                     | 145  | 64    | 32    |
| THJA685*010#JN         | A         | 6.8              | 10                | 85                     | 5                    | 175                       | 0.7           | 4.5         | 2.6                   | 1              | 170                     | 153  | 68    | 34    |
| THJA106*010#JN         | A         | 10               | 10                | 85                     | 5                    | 175                       | 1             | 6           | 2.7                   | 1              | 167                     | 150  | 67    | 33    |
| THJB106*010#JN         | B         | 10               | 10                | 85                     | 5                    | 175                       | 1             | 4.5         | 1.8                   | 1              | 217                     | 196  | 87    | 43    |
| THJB156*010#JN         | B         | 15               | 10                | 85                     | 5                    | 175                       | 1.5           | 4.5         | 1.5                   | 1              | 238                     | 214  | 95    | 48    |
| THJB226*010#JN         | B         | 22               | 10                | 85                     | 5                    | 175                       | 2.2           | 6           | 2.4                   | 1              | 188                     | 169  | 75    | 38    |
| THJC336*010#JN         | C         | 33               | 10                | 85                     | 5                    | 175                       | 3.3           | 6           | 1.6                   | 1              | 262                     | 236  | 105   | 52    |
| THJC476*010#JN         | C         | 47               | 10                | 85                     | 5                    | 175                       | 4.7           | 4.5         | 0.5                   | 1              | 469                     | 422  | 188   | 94    |
| THJD686*010#JN         | D         | 68               | 10                | 85                     | 5                    | 175                       | 6.8           | 4.5         | 0.4                   | 1 <sup>U</sup> | 612                     | 551  | 245   | 122   |
| THJD107*010#JN         | D         | 100              | 10                | 85                     | 5                    | 175                       | 10            | 6           | 0.9                   | 1 <sup>U</sup> | 408                     | 367  | 163   | 82    |
| THJE227*010#JN         | E         | 220              | 10                | 85                     | 5                    | 175                       | 22            | 10          | 0.5                   | 1 <sup>U</sup> | 574                     | 517  | 230   | 115   |
| <b>16 Volt @ 85°C</b>  |           |                  |                   |                        |                      |                           |               |             |                       |                |                         |      |       |       |
| THJA225*016#JN         | A         | 2.2              | 16                | 85                     | 8                    | 175                       | 0.5           | 4.5         | 3                     | 1              | 158                     | 142  | 63    | 32    |
| THJA225*016#1500       | A         | 2.2              | 16                | 85                     | 8                    | 175                       | 0.5           | 4.5         | 1.5                   | 1              | 224                     | 201  | 89    | 45    |
| THJA335*016#JN         | A         | 3.3              | 16                | 85                     | 8                    | 175                       | 0.5           | 6           | 5                     | 1              | 122                     | 110  | 49    | 24    |
| THJA475*016#JN         | A         | 4.7              | 16                | 85                     | 8                    | 175                       | 0.8           | 4.5         | 2.9                   | 1              | 161                     | 145  | 64    | 32    |
| THJB475*016#JN         | B         | 4.7              | 16                | 85                     | 8                    | 175                       | 0.8           | 6           | 3.5                   | 1              | 156                     | 140  | 62    | 31    |
| THJA685*016#JN         | A         | 6.8              | 16                | 85                     | 8                    | 175                       | 1.1           | 6           | 3.5                   | 1              | 146                     | 132  | 59    | 29    |
| THJB685*016#JN         | B         | 6.8              | 16                | 85                     | 8                    | 175                       | 1.1           | 6           | 2.5                   | 1              | 184                     | 166  | 74    | 37    |
| THJB106*016#JN         | B         | 10               | 16                | 85                     | 8                    | 175                       | 1.6           | 4.5         | 2.8                   | 1              | 174                     | 157  | 70    | 35    |
| THJB156*016#JN         | B         | 15               | 16                | 85                     | 8                    | 175                       | 2.4           | 6           | 2                     | 1              | 206                     | 186  | 82    | 41    |
| THJC226*016#JN         | C         | 22               | 16                | 85                     | 8                    | 175                       | 3.5           | 6           | 1.6                   | 1              | 262                     | 236  | 105   | 52    |
| THJC226*016#0500       | C         | 22               | 16                | 85                     | 8                    | 175                       | 3.5           | 4.5         | 0.5                   | 1              | 469                     | 422  | 188   | 94    |
| THJC336*016#JN         | C         | 33               | 16                | 85                     | 8                    | 175                       | 5.3           | 6           | 1.5                   | 1              | 271                     | 244  | 108   | 54    |
| THJC476*016#JN         | C         | 47               | 16                | 85                     | 8                    | 175                       | 7.5           | 6           | 0.9                   | 1              | 371                     | 334  | 148   | 74    |
| THJD476*016#JN         | D         | 47               | 16                | 85                     | 8                    | 175                       | 7.5           | 6           | 0.9                   | 1 <sup>U</sup> | 408                     | 367  | 163   | 82    |
| THJD686*016#JN         | D         | 68               | 16                | 85                     | 8                    | 175                       | 10.9          | 4.5         | 0.9                   | 1 <sup>U</sup> | 408                     | 367  | 163   | 82    |
| THJE107*016#JN         | E         | 100              | 16                | 85                     | 8                    | 175                       | 16            | 8           | 0.4                   | 1 <sup>U</sup> | 642                     | 578  | 257   | 128   |
| <b>20 Volt @ 85°C</b>  |           |                  |                   |                        |                      |                           |               |             |                       |                |                         |      |       |       |
| THJA155*020#JN         | A         | 1.5              | 20                | 85                     | 10                   | 175                       | 0.5           | 6           | 6.5                   | 1              | 107                     | 97   | 43    | 21    |
| THJB335*020#JN         | B         | 3.3              | 20                | 85                     | 10                   | 175                       | 0.7           | 6           | 3                     | 1              | 168                     | 151  | 67    | 34    |
| THJC156*020#JN         | C         | 15               | 20                | 85                     | 10                   | 175                       | 3.0           | 6           | 1.7                   | 1              | 254                     | 229  | 102   | 51    |
| THJD336*020#JN         | D         | 33               | 20                | 85                     | 10                   | 175                       | 6.6           | 6           | 0.9                   | 1 <sup>U</sup> | 408                     | 367  | 163   | 82    |
| <b>25 Volt @ 85°C</b>  |           |                  |                   |                        |                      |                           |               |             |                       |                |                         |      |       |       |
| THJA474*025#JN         | A         | 0.47             | 25                | 85                     | 12                   | 175                       | 0.5           | 4           | 14                    | 1              | 73                      | 66   | 29    | 15    |
| THJA684*025#JN         | A         | 0.68             | 25                | 85                     | 12                   | 175                       | 0.5           | 4           | 10                    | 1              | 87                      | 78   | 35    | 17    |
| THJA105*025#JN         | A         | 1.0              | 25                | 85                     | 12                   | 175                       | 0.5           | 3           | 5.2                   | 1              | 120                     | 108  | 48    | 24    |
| THJB225*025#JN         | B         | 2.2              | 25                | 85                     | 12                   | 175                       | 0.6           | 6           | 4.5                   | 1              | 137                     | 124  | 55    | 27    |
| THJB225*025#1500       | B         | 2.2              | 25                | 85                     | 12                   | 175                       | 0.6           | 6           | 1.5                   | 1              | 238                     | 214  | 95    | 48    |
| THJC685*025#JN         | C         | 6.8              | 25                | 85                     | 12                   | 175                       | 1.7           | 6           | 2                     | 1              | 235                     | 211  | 94    | 47    |
| THJC106*025#JN         | C         | 10               | 25                | 85                     | 12                   | 175                       | 2.5           | 6           | 1.8                   | 1              | 247                     | 222  | 99    | 49    |
| THJD226*025#JN         | D         | 22               | 25                | 85                     | 12                   | 175                       | 5.5           | 6           | 0.9                   | 1 <sup>U</sup> | 408                     | 367  | 163   | 82    |
| THJD336*025#JN         | D         | 33               | 25                | 85                     | 12                   | 175                       | 8.3           | 6           | 0.9                   | 1 <sup>U</sup> | 408                     | 367  | 163   | 82    |
| <b>35 Volt @ 85°C</b>  |           |                  |                   |                        |                      |                           |               |             |                       |                |                         |      |       |       |
| THJA104*035#JN         | A         | 0.1              | 35                | 85                     | 17                   | 175                       | 0.5           | 4           | 24                    | 1              | 56                      | 50   | 22    | 11    |
| THJA154*035#JN         | A         | 0.15             | 35                | 85                     | 17                   | 175                       | 0.5           | 4           | 21                    | 1              | 60                      | 54   | 24    | 12    |
| THJA224*035#JN         | A         | 0.22             | 35                | 85                     | 17                   | 175                       | 0.5           | 4           | 18                    | 1              | 65                      | 58   | 26    | 13    |
| THJA334*035#JN         | A         | 0.33             | 35                | 85                     | 17                   | 175                       | 0.5           | 4           | 15                    | 1              | 71                      | 64   | 28    | 14    |
| THJB474*035#JN         | B         | 0.47             | 35                | 85                     | 17                   | 175                       | 0.5           | 4           | 10                    | 1              | 92                      | 83   | 37    | 18    |
| THJB684*035#JN         | B         | 0.68             | 35                | 85                     | 17                   | 175                       | 0.5           | 4           | 8                     | 1              | 103                     | 93   | 41    | 21    |
| THJA105*035#JN         | A         | 1.0              | 35                | 85                     | 17                   | 175                       | 0.5           | 4           | 7.5                   | 1              | 100                     | 90   | 40    | 20    |
| THJB105*035#JN         | B         | 1.0              | 35                | 85                     | 17                   | 175                       | 0.5           | 4           | 6.5                   | 1              | 114                     | 103  | 46    | 23    |
| THJC155*035#JN         | C         | 1.5              | 35                | 85                     | 17                   | 175                       | 0.5           | 6           | 4.5                   | 1              | 156                     | 141  | 63    | 31    |
| THJC225*035#JN         | C         | 2.2              | 35                | 85                     | 17                   | 175                       | 0.8           | 6           | 3.5                   | 1              | 177                     | 160  | 71    | 35    |
| THJC335*035#JN         | C         | 3.3              | 35                | 85                     | 17                   | 175                       | 1.2           | 6           | 2.5                   | 1              | 210                     | 189  | 84    | 42    |
| THJC475*035#JN         | C         | 4.7              | 35                | 85                     | 17                   | 175                       | 1.6           | 6           | 2.2                   | 1              | 224                     | 201  | 89    | 45    |
| THJD685*035#JN         | D         | 6.8              | 35                | 85                     | 17                   | 175                       | 2.4           | 6           | 1.3                   | 1 <sup>U</sup> | 340                     | 306  | 136   | 68    |

### RATINGS & PART NUMBER REFERENCE

| AVX Part No.          | Case Size | Capacitance (μF) | Rated Voltage (V) | Rated Temperature (°C) | Category Voltage (V) | Category Temperature (°C) | DCL Max. (μA) | DF Max. (%) | ESR Max. @ 100kHz (Ω) | MSL             | 100kHz RMS Current (mA) |      |       |       |
|-----------------------|-----------|------------------|-------------------|------------------------|----------------------|---------------------------|---------------|-------------|-----------------------|-----------------|-------------------------|------|-------|-------|
|                       |           |                  |                   |                        |                      |                           |               |             |                       |                 | 25°C                    | 85°C | 125°C | 175°C |
| THJD106*035#JN        | D         | 10               | 35                | 85                     | 17                   | 175                       | 3.5           | 6           | 1                     | 1 <sup>1)</sup> | 387                     | 349  | 155   | 77    |
| THJD156*035#JN        | D         | 15               | 35                | 85                     | 17                   | 175                       | 5.3           | 6           | 0.9                   | 1 <sup>1)</sup> | 408                     | 367  | 163   | 82    |
| THJD226*035#JN        | D         | 22               | 35                | 85                     | 17                   | 175                       | 7.7           | 6           | 0.6                   | 1 <sup>1)</sup> | 500                     | 450  | 200   | 100   |
| THJD226*035#0300      | D         | 22               | 35                | 85                     | 17                   | 175                       | 7.7           | 6           | 0.3                   | 1 <sup>1)</sup> | 707                     | 636  | 283   | 141   |
| THJE336*035#JN        | E         | 33               | 35                | 85                     | 17                   | 175                       | 11.6          | 6           | 0.5                   | 1 <sup>1)</sup> | 574                     | 517  | 230   | 115   |
| THJE336*035#0150      | E         | 33               | 35                | 85                     | 17                   | 175                       | 11.6          | 6           | 0.15                  | 1 <sup>1)</sup> | 1049                    | 944  | 420   | 210   |
| <b>50 Volt @ 85°C</b> |           |                  |                   |                        |                      |                           |               |             |                       |                 |                         |      |       |       |
| THJD335*050#JN        | D         | 3.3              | 50                | 85                     | 25                   | 175                       | 1.7           | 6           | 1.1                   | 1 <sup>1)</sup> | 369                     | 332  | 148   | 74    |
| THJD475*050#JN        | D         | 4.7              | 50                | 85                     | 25                   | 175                       | 2.4           | 6           | 0.9                   | 1 <sup>1)</sup> | 463                     | 417  | 185   | 93    |
| THJD685*050#JN        | D         | 6.8              | 50                | 85                     | 25                   | 175                       | 3.4           | 6           | 0.7                   | 1 <sup>1)</sup> | 408                     | 367  | 163   | 82    |
| THJD106*050#JN        | D         | 10               | 50                | 85                     | 25                   | 175                       | 5             | 6           | 0.7                   | 1 <sup>1)</sup> | 463                     | 417  | 185   | 93    |
| THJE106*050#JN        | E         | 10               | 50                | 85                     | 25                   | 175                       | 5             | 6           | 0.7                   | 1 <sup>1)</sup> | 486                     | 437  | 194   | 97    |

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

All PNs also available with Dry pack option - MSL 3 (see How to order).

<sup>1)</sup> -Dry pack option (see How to order) recommended for reduction of stress during soldering.

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 223.

**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.**

### QUALIFICATION TABLE

| TEST                  | THJ series (Temperature range -55°C to +175°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 175°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 ±10% of initial value |           |            |            |            |            |  |
|                       |  |               |               | DF                 | initial limit                |           |            |            |            |            |  |
|                       |  |               |               | ESR                | 1.25 x initial limit         |           |            |            |            |            |  |
| Storage Life          | 175°C, 0V, 2000h   |               |               | Visual examination | no visible damage            |           |            |            |            |            |  |
|                       |  |               |               | DCL                | 1.25 x initial limit         |           |            |            |            |            |  |
|                       |  |               |               | ΔC/C               | within ±10% of initial value |           |            |            |            |            |  |
|                       |  |               |               | DF                 | 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                | 2 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      | +125°C     | +175°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            | ΔC/C               | n/a                          | +0/-10%   | ±5%        | +10/-0%    | +18/-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  | +175+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: 175°C+3/0°C<br>Test voltage: 1.3 x category voltage at 175°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                | initial limit                |           |            |            |            |            |  |
|                       |  |               |               | ΔC/C               | within ±5% of initial value  |           |            |            |            |            |  |
|                       |  |               |               | DF                 | initial limit                |           |            |            |            |            |  |
|                       |  |               |               | ESR                | 1.25 x initial limit         |           |            |            |            |            |  |

\*Initial Limit