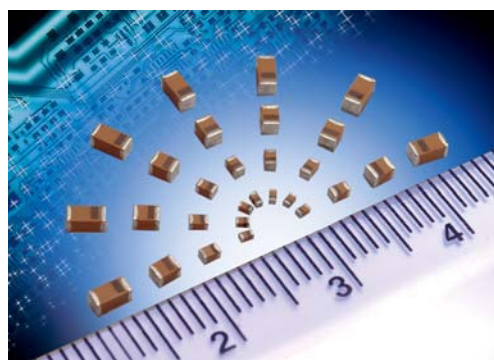




### FEATURES

- The world's smallest surface mount tantalum capacitor
- CV range: 0.10-150µF / 2-25V
- 5 case sizes available
- Low profile options available
- Industrial and hi-rel medical applications

### APPLICATIONS

- Hearing Aids, Non-life support medical, Long life miniature designs

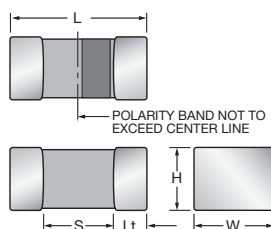


LEAD-FREE

LEAD-FREE COMPATIBLE COMPONENT

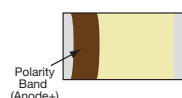


RoHS COMPLIANT



### MARKING

A, B, K, L, R CASE



### CASE DIMENSIONS: millimeters (inches)

| Code | EIA Code | EIA Metric | L+0.20 (0.008)<br>-0.00 (0.000) | W+0.15 (0.006)<br>-0.00 (0.000)         | H+0.15 (0.006)<br>-0.00 (0.000)         | Termination Spacing(S) | Minimum Termination Length (Lt) |
|------|----------|------------|---------------------------------|-----------------------------------------|-----------------------------------------|------------------------|---------------------------------|
| A    | 1206     | 3216-18    | 3.20 ± 0.20<br>(0.126 ± 0.008)  | 1.60 ± 0.20<br>(0.060 ± 0.008)          | 1.60 ± 0.20<br>(0.063 ± 0.008)          | 1.80 (0.071) min       | 0.15 (0.006)                    |
| B    | 1210     | 3528-15    | 3.50 ± 0.20<br>(0.138 ± 0.008)  | 2.80 +0.20<br>-0.10<br>+0.008<br>-0.004 | 1.50 (0.059) max                        | 2.00 (0.079) min       | 0.15 (0.006)                    |
| K    | 0402     | 1005-07    | 1.00 (0.039)                    | 0.50 +0.20<br>-0.00<br>+0.008<br>-0.000 | 0.50 +0.20<br>-0.00<br>+0.008<br>-0.000 | 0.40 (0.016) min       | 0.10 (0.004)                    |
| L    | 0603     | 1608-10    | 1.60 (0.063)                    | 0.85 (0.033)                            | 0.85 (0.033)                            | 0.55 (0.022) min       | 0.15 (0.006)                    |
| R    | 0805     | 2012-15    | 2.00 (0.079)                    | 1.35 (0.053)                            | 1.35 (0.053)                            | 0.70 (0.027) min       | 0.15 (0.006)                    |

### HOW TO ORDER

|                                     |                                          |                                                                                                                                                      |                                           |                                                                                                                                      |                                                                                                                                                                                                                           |                                                                          |
|-------------------------------------|------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------|
| <b>TAC</b><br>Type<br>TACmicrochip® | <b>L</b><br>Case Size<br>See table above | <b>226</b><br>Capacitance Code<br>pF code: 1st two digits represent significant figures, 3rd digit represents multiplier (number of zeros to follow) | <b>*</b><br>Tolerance<br>K=±10%<br>M=±20% | <b>004</b><br>Rated DC Voltage<br>002=2Vdc<br>003=3Vdc<br>004=4Vdc<br>006=6.3Vdc<br>010=10Vdc<br>016=16Vdc<br>020=20Vdc<br>025=25Vdc | <b>R</b><br>Packaging<br>R, P = 7" Standard Tin Termination Plastic Tape<br>X, Q = 4 1/4" Standard Tin Termination Plastic Tape<br>A, M = 7" Gold Termination Plastic Tape<br>F, N = 4 1/4" Gold Termination Plastic Tape | <b>TA</b><br>Alternative characters may be used for special requirements |
|-------------------------------------|------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------|

### TECHNICAL SPECIFICATIONS

|                                    |           |                                                                                              |     |     |     |    |    |    |    |  |  |
|------------------------------------|-----------|----------------------------------------------------------------------------------------------|-----|-----|-----|----|----|----|----|--|--|
| Technical Data:                    |           | All technical data relate to an ambient temperature of +25°C                                 |     |     |     |    |    |    |    |  |  |
| Capacitance Range:                 |           | 0.10 µF to 150 µF                                                                            |     |     |     |    |    |    |    |  |  |
| Capacitance Tolerance:             |           | ±10%; ±20%                                                                                   |     |     |     |    |    |    |    |  |  |
| Leakage Current DCL:               |           | 0.01CV or 0.5µA whichever is the greater                                                     |     |     |     |    |    |    |    |  |  |
| Rated Voltage (V <sub>R</sub> )    | ≤ +85°C:  | 2                                                                                            | 3   | 4   | 6.3 | 10 | 16 | 20 | 25 |  |  |
| Category Voltage (V <sub>C</sub> ) | ≤ +125°C: | 1.3                                                                                          | 2   | 2.7 | 4   | 7  | 10 | 13 | 17 |  |  |
| Surge Voltage (V <sub>S</sub> )    | ≤ +85°C:  | 2.7                                                                                          | 3.9 | 5.2 | 8   | 13 | 20 | 26 | 32 |  |  |
| Surge Voltage (V <sub>S</sub> )    | ≤ +125°C: | 1.7                                                                                          | 2.6 | 3.2 | 5   | 8  | 12 | 16 | 20 |  |  |
| Temperature Range:                 |           | -55°C to +125°C                                                                              |     |     |     |    |    |    |    |  |  |
| Reliability:                       |           | 1% per 1000 hours at 85°C, V <sub>R</sub> with 0.1Ω/V series impedance, 60% confidence level |     |     |     |    |    |    |    |  |  |
| Termination Finish:                |           | Nickel and Tin Plating (standard),<br>Nickel and Gold Plating option available upon request  |     |     |     |    |    |    |    |  |  |

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

| Capacitance          |                   | Voltage Rating DC (V <sub>R</sub> ) at 85°C |                 |                   |                 |                   |             |        |     |
|----------------------|-------------------|---------------------------------------------|-----------------|-------------------|-----------------|-------------------|-------------|--------|-----|
| µF                   | Code              | 2.0V                                        | 3.0V            | 4.0V              | 6.3V            | 10V               | 16V         | 20V    | 25V |
| 0.10<br>0.15<br>0.22 | 104<br>154<br>224 |                                             |                 |                   |                 | K<br>K<br>K       | K<br>K<br>K | K      |     |
| 0.33<br>0.47<br>0.68 | 334<br>474<br>684 |                                             |                 |                   |                 | K<br>K/L<br>K/L   | K<br>L<br>L |        |     |
| 1.0<br>1.5<br>2.2    | 105<br>155<br>225 |                                             | K/L             | L<br>L            | K/L<br>L<br>K/L | K/L/R<br>L<br>L   | L<br>L      |        | R   |
| 3.3<br>4.7<br>6.8    | 335<br>475<br>685 | K/L<br>K/L<br>K/L                           | K/L<br>K/L<br>L | L<br>L<br>L       | L<br>L<br>L/R   | L/R<br>L/R<br>L/R |             | R<br>R |     |
| 10<br>15<br>22       | 106<br>156<br>226 | K/L<br>R                                    | L<br>R<br>L/R   | L/R<br>L/R<br>L/R | L/R<br>L/R<br>R | L/R<br>R<br>R     | R           |        |     |
| 33<br>47<br>68       | 336<br>476<br>686 | R<br>R<br>R                                 | R<br>R<br>A/R   | R<br>R<br>A       | R<br>A/R        | A/R<br>B          |             |        |     |
| 100<br>150<br>220    | 107<br>157<br>227 | A                                           | A/R             | A/R               | A               |                   |             |        |     |

ESR limits quoted in brackets (Ohms)

Released codes

Engineering samples - please contact manufacturer

\*Codes under development - subject to change.

Standard Height Profile: A, B, K, L, R Case

Low Profile: H, J, T, U, V Case

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

### 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>(µA)<br>Max. | DF<br>%<br>Max. | ESR<br>Max. (Ω)<br>@ 100kHz | MSL | 100kHz RMS Current (mA) |      |       | Product<br>Category |
|-----------------|--------------|---------------------|-------------------------|------------------------------|----------------------------|---------------------------------|---------------------|-----------------|-----------------------------|-----|-------------------------|------|-------|---------------------|
|                 |              |                     |                         |                              |                            |                                 |                     |                 |                             |     | 25°C                    | 85°C | 125°C |                     |
| 2.5 Volt @ 85°C |              |                     |                         |                              |                            |                                 |                     |                 |                             |     |                         |      |       |                     |
| TACK335*002#TA  | K            | 3.3                 | 2                       | 85                           | 1.3                        | 125                             | 0.5                 | 8               | 15                          | 1   | 32                      | 28   | 13    | 3                   |
| TACL335*002#TA  | L            | 3.3                 | 2                       | 85                           | 1.3                        | 125                             | 0.5                 | 6               | 7.5                         | 1   | 58                      | 52   | 23    | 2                   |
| TACK475*002#TA  | K            | 4.7                 | 2                       | 85                           | 1.3                        | 125                             | 0.5                 | 12              | 15                          | 1   | 32                      | 28   | 13    | 3                   |
| TACL475*002#TA  | L            | 4.7                 | 2                       | 85                           | 1.3                        | 125                             | 0.5                 | 6               | 7.5                         | 1   | 58                      | 52   | 23    | 1                   |
| TACK685*002#TA  | K            | 6.8                 | 2                       | 85                           | 1.3                        | 125                             | 0.5                 | 20              | 15                          | 1   | 32                      | 28   | 13    | 3                   |
| TACL685*002#TA  | L            | 6.8                 | 2                       | 85                           | 1.3                        | 125                             | 0.5                 | 6               | 7.5                         | 1   | 58                      | 52   | 23    | 2                   |
| TACK106*002#TA  | K            | 10                  | 2                       | 85                           | 1.3                        | 125                             | 0.5                 | 15              | 15                          | 1   | 32                      | 28   | 13    | 3                   |
| TACL106*002#TA  | L            | 10                  | 2                       | 85                           | 1.3                        | 125                             | 0.5                 | 10              | 7.5                         | 1   | 58                      | 52   | 23    | 3                   |
| TACR226*002#TA  | R            | 22                  | 2                       | 85                           | 1.3                        | 125                             | 0.5                 | 8               | 5                           | 1   | 95                      | 85   | 38    | 1                   |
| TACR336*002#TA  | R            | 33                  | 2                       | 85                           | 1.3                        | 125                             | 0.7                 | 10              | 5                           | 1   | 95                      | 85   | 38    | 2                   |
| TACR476*002#TA  | R            | 47                  | 2                       | 85                           | 1.3                        | 125                             | 0.9                 | 10              | 5                           | 1   | 95                      | 85   | 38    | 2                   |
| TACR686*002#TA  | R            | 68                  | 2                       | 85                           | 1.3                        | 125                             | 1.4                 | 14              | 5                           | 1   | 95                      | 85   | 38    | 2                   |
| TACA157*002#TA  | A            | 150                 | 2                       | 85                           | 1.3                        | 125                             | 3                   | 20              | 1                           | 1   | 200                     | 180  | 80    | 2                   |
| 3 Volt @ 85°C   |              |                     |                         |                              |                            |                                 |                     |                 |                             |     |                         |      |       |                     |
| TACK225*003#TA  | K            | 2.2                 | 3                       | 85                           | 2                          | 125                             | 0.5                 | 6               | 15                          | 1   | 32                      | 28   | 13    | 2                   |
| TACL225*003#TA  | L            | 2.2                 | 3                       | 85                           | 2                          | 125                             | 0.5                 | 6               | 7.5                         | 1   | 58                      | 52   | 23    | 1                   |
| TACK335*003#TA  | K            | 3.3                 | 3                       | 85                           | 2                          | 125                             | 0.5                 | 8               | 15                          | 1   | 32                      | 28   | 13    | 3                   |
| TACL335*003#TA  | L            | 3.3                 | 3                       | 85                           | 2                          | 125                             | 0.5                 | 6               | 7.5                         | 1   | 58                      | 52   | 23    | 2                   |
| TACK475*003#TA  | K            | 4.7                 | 3                       | 85                           | 2                          | 125                             | 0.5                 | 12              | 15                          | 1   | 32                      | 28   | 13    | 3                   |
| TACL475*003#TA  | L            | 4.7                 | 3                       | 85                           | 2                          | 125                             | 0.5                 | 6               | 7.5                         | 1   | 58                      | 52   | 23    | 1                   |
| TACL685*003#TA  | L            | 6.8                 | 3                       | 85                           | 2                          | 125                             | 0.5                 | 6               | 7.5                         | 1   | 58                      | 52   | 23    | 2                   |
| TACL106*003#TA  | L            | 10                  | 3                       | 85                           | 2                          | 125                             | 0.5                 | 10              | 7.5                         | 1   | 58                      | 52   | 23    | 3                   |
| TACR156*003#TA  | R            | 15                  | 3                       | 85                           | 2                          | 125                             | 0.5                 | 8               | 5                           | 1   | 95                      | 85   | 38    | 1                   |
| TACL226*003#TA  | L            | 22                  | 3                       | 85                           | 2                          | 125                             | 0.7                 | 20              | 7.5                         | 1   | 58                      | 52   | 23    | 3                   |
| TACR226*003#TA  | R            | 22                  | 3                       | 85                           | 2                          | 125                             | 0.7                 | 8               | 5                           | 1   | 95                      | 85   | 38    | 1                   |
| TACR336*003#TA  | R            | 33                  | 3                       | 85                           | 2                          | 125                             | 1                   | 10              | 5                           | 1   | 95                      | 85   | 38    | 2                   |
| TACR476*003#TA  | R            | 47                  | 3                       | 85                           | 2                          | 125                             | 1.5                 | 10              | 5                           | 1   | 95                      | 85   | 38    | 2                   |
| TACA686*003#TA  | A            | 68                  | 3                       | 85                           | 2                          | 125                             | 2                   | 15              | 2                           | 1   | 141                     | 127  | 57    | 1                   |
| TACR686*003#TA  | R            | 68                  | 3                       | 85                           | 2                          | 125                             | 2                   | 14              | 5                           | 1   | 95                      | 85   | 38    | 3                   |
| TACA107*003#TA  | A            | 100                 | 3                       | 85                           | 2                          | 125                             | 3                   | 15              | 1                           | 1   | 200                     | 180  | 80    | 2                   |
| TACR107*003#TA  | R            | 100                 | 3                       | 85                           | 2                          | 125                             | 3                   | 30              | 5                           | 1   | 95                      | 85   | 38    | 3                   |
| 4 Volt @ 85°C   |              |                     |                         |                              |                            |                                 |                     |                 |                             |     |                         |      |       |                     |
| TACL155*004#TA  | L            | 1.5                 | 4                       | 85                           | 2.7                        | 125                             | 0.5                 | 6               | 7.5                         | 1   | 58                      | 52   | 23    | 1                   |
| TACL225*004#TA  | L            | 2.2                 | 4                       | 85                           | 2.7                        | 125                             | 0.5                 | 6               | 7.5                         | 1   | 58                      | 52   | 23    | 1                   |
| TACL335*004#TA  | L            | 3.3                 | 4                       | 85                           | 2.7                        | 125                             | 0.5                 | 6               | 7.5                         | 1   | 58                      | 52   | 23    | 2                   |
| TACL475*004#TA  | L            | 4.7                 | 4                       | 85                           | 2.7                        | 125                             | 0.5                 | 6               | 7.5                         | 1   | 58                      | 52   | 23    | 1                   |
| TACL685*004#TA  | L            | 6.8                 | 4                       | 85                           | 2.7                        | 125                             | 0.5                 | 8               | 7.5                         | 1   | 58                      | 52   | 23    | 2                   |
| TACL106*004#TA  | L            | 10                  | 4                       | 85                           | 2.7                        | 125                             | 0.5                 | 10              | 7.5                         | 1   | 58                      | 52   | 23    | 2                   |
| TACR106*004#TA  | R            | 10                  | 4                       | 85                           | 2.7                        | 125                             | 0.5                 | 8               | 5                           | 1   | 95                      | 85   | 38    | 1                   |
| TACL156*004#TA  | L            | 15                  | 4                       | 85                           | 2.7                        | 125                             | 0.6                 | 20              | 7.5                         | 1   | 58                      | 52   | 23    | 3                   |
| TACR156*004#TA  | R            | 15                  | 4                       | 85                           | 2.7                        | 125                             | 0.6                 | 8               | 5                           | 1   | 95                      | 85   | 38    | 1                   |
| TACL226*004#TA  | L            | 22                  | 4                       | 85                           | 2.7                        | 125                             | 0.9                 | 20              | 7.5                         | 1   | 58                      | 52   | 23    | 3                   |
| TACR226*004#TA  | R            | 22                  | 4                       | 85                           | 2.7                        | 125                             | 0.9                 | 8               | 5                           | 1   | 95                      | 85   | 38    | 1                   |
| TACR336*004#TA  | R            | 33                  | 4                       | 85                           | 2.7                        | 125                             | 1.3                 | 10              | 5                           | 1   | 95                      | 85   | 38    | 2                   |
| TACR476*004#TA  | R            | 47                  | 4                       | 85                           | 2.7                        | 125                             | 1.9                 | 14              | 5                           | 1   | 95                      | 85   | 38    | 3                   |
| TACA686*004#TA  | A            | 68                  | 4                       | 85                           | 2.7                        | 125                             | 2.7                 | 15              | 1                           | 1   | 200                     | 180  | 80    | 1                   |
| TACA107*004#TA  | A            | 100                 | 4                       | 85                           | 2.7                        | 125                             | 4                   | 20              | 1                           | 1   | 200                     | 180  | 80    | 2                   |
| TACR107*004#TA  | R            | 100                 | 4                       | 85                           | 2.7                        | 125                             | 4                   | 30              | 5                           | 1   | 95                      | 85   | 38    | 3                   |
| 6.3 Volt @ 85°C |              |                     |                         |                              |                            |                                 |                     |                 |                             |     |                         |      |       |                     |
| TACK105*006#TA  | K            | 1                   | 6.3                     | 85                           | 4                          | 125                             | 0.5                 | 6               | 15                          | 1   | 32                      | 28   | 13    | 2                   |
| TACL105*006#TA  | L            | 1                   | 6.3                     | 85                           | 4                          | 125                             | 0.5                 | 6               | 7.5                         | 1   | 58                      | 52   | 23    | 1                   |
| TACL155*006#TA  | L            | 1.5                 | 6.3                     | 85                           | 4                          | 125                             | 0.5                 | 6               | 7.5                         | 1   | 58                      | 52   | 23    | 1                   |
| TACK225*006#TA  | K            | 2.2                 | 6.3                     | 85                           | 4                          | 125                             | 0.5                 | 8               | 15                          | 1   | 32                      | 28   | 13    | 3                   |
| TACL225*006#TA  | L            | 2.2                 | 6.3                     | 85                           | 4                          | 125                             | 0.5                 | 6               | 7.5                         | 1   | 58                      | 52   | 23    | 1                   |
| TACK335*006#TA  | L            | 3.3                 | 6.3                     | 85                           | 4                          | 125                             | 0.5                 | 6               | 7.5                         | 1   | 58                      | 52   | 23    | 2                   |
| TACL475*006#TA  | L            | 4.7                 | 6.3                     | 85                           | 4                          | 125                             | 0.5                 | 8               | 7.5                         | 1   | 58                      | 52   | 23    | 2                   |
| TACL685*006#TA  | L            | 6.8                 | 6.3                     | 85                           | 4                          | 125                             | 0.5                 | 10              | 7.5                         | 1   | 58                      | 52   | 23    | 2                   |
| TACR685*006#TA  | R            | 6.8                 | 6.3                     | 85                           | 4                          | 125                             | 0.5                 | 8               | 5                           | 1   | 95                      | 85   | 38    | 1                   |
| TACL106*006#TA  | L            | 10                  | 6.3                     | 85                           | 4                          | 125                             | 0.6                 | 10              | 6                           | 1   | 65                      | 58   | 26    | 2                   |
| TACR106*006#TA  | R            | 10                  | 6.3                     | 85                           | 4                          | 125                             | 0.6                 | 8               | 5                           | 1   | 95                      | 85   | 38    | 1                   |
| TACL156*006#TA  | L            | 15                  | 6.3                     | 85                           | 4                          | 125                             | 0.9                 | 20              | 7.5                         | 1   | 58                      | 52   | 23    | 3                   |
| TACR156*006#TA  | R            | 15                  | 6.3                     | 85                           | 4                          | 125                             | 0.9                 | 8               | 5                           | 1   | 95                      | 85   | 38    | 1                   |
| TACR226*006#TA  | R            | 22                  | 6.3                     | 85                           | 4                          | 125                             | 1.4                 | 10              | 5                           | 1   | 95                      | 85   | 38    | 1                   |
| TACR336*006#TA  | R            | 33                  | 6.3                     | 85                           | 4                          | 125                             | 2.1                 | 12              | 5                           | 1   | 95                      | 85   | 38    | 2                   |
| TACA476*006#TA  | A            | 47                  | 6.3                     | 85                           | 4                          | 125                             | 3                   | 15              | 1                           | 1   | 200                     | 180  | 80    | 1                   |
| TACR476*006#TA  | R            | 47                  | 6.3                     | 85                           | 4                          | 125                             | 3                   | 20              | 5                           | 1   | 95                      | 85   | 38    | 3                   |
| TACA107*006#TA  | A            | 100                 | 6.3                     | 85                           | 4                          | 125                             | 6.3                 | 20              | 1                           | 1   | 200                     | 180  | 80    | 2                   |
| 10 Volt @ 85°C  |              |                     |                         |                              |                            |                                 |                     |                 |                             |     |                         |      |       |                     |
| TACK154*010#TA  | K            | 0.15                | 10                      | 85                           | 7                          | 125                             | 0.5                 | 6               | 40                          | 1   | 19                      | 17   | 8     | 1                   |
| TACK224*010#TA  | K            | 0.22                | 10                      | 85                           | 7                          | 125                             | 0.5                 | 6               | 30                          | 1   | 22                      | 20   | 9     | 1                   |

### RATINGS & PART NUMBER REFERENCE

| AVX Part No.   | Case Size | Capacitance (µF) | Rated Voltage (V) | Rated Temperature (°C) | Category Voltage (V) | Category Temperature (°C) | DCL (µA) Max. | DF % Max. | ESR Max. (Ω) @ 100kHz | MSL | 100kHz RMS Current (mA) |      |       | Product Category |
|----------------|-----------|------------------|-------------------|------------------------|----------------------|---------------------------|---------------|-----------|-----------------------|-----|-------------------------|------|-------|------------------|
|                |           |                  |                   |                        |                      |                           |               |           |                       |     | 25°C                    | 85°C | 125°C |                  |
| TACK334*010#TA | K         | 0.33             | 10                | 85                     | 7                    | 125                       | 0.5           | 6         | 20                    | 1   | 27                      | 25   | 11    | 1                |
| TACK474*010#TA | K         | 0.47             | 10                | 85                     | 7                    | 125                       | 0.5           | 6         | 15                    | 1   | 32                      | 28   | 13    | 1                |
| TACL474*010#TA | L         | 0.47             | 10                | 85                     | 7                    | 125                       | 0.5           | 6         | 7.5                   | 1   | 58                      | 52   | 23    | 1                |
| TACK684*010#TA | K         | 0.68             | 10                | 85                     | 7                    | 125                       | 0.5           | 8         | 15                    | 1   | 32                      | 28   | 13    | 2                |
| TACL684*010#TA | L         | 0.68             | 10                | 85                     | 7                    | 125                       | 0.5           | 6         | 7.5                   | 1   | 58                      | 52   | 23    | 1                |
| TACK105*010#TA | K         | 1                | 10                | 85                     | 7                    | 125                       | 0.5           | 6         | 15                    | 1   | 32                      | 28   | 13    | 2                |
| TACL105*010#TA | L         | 1                | 10                | 85                     | 7                    | 125                       | 0.5           | 6         | 7.5                   | 1   | 58                      | 52   | 23    | 1                |
| TACR105*010#TA | R         | 1                | 10                | 85                     | 7                    | 125                       | 0.5           | 6         | 7                     | 1   | 80                      | 72   | 32    | 1                |
| TACL155*010#TA | L         | 1.5              | 10                | 85                     | 7                    | 125                       | 0.5           | 6         | 7.5                   | 1   | 58                      | 52   | 23    | 1                |
| TACL225*010#TA | L         | 2.2              | 10                | 85                     | 7                    | 125                       | 0.5           | 6         | 7.5                   | 1   | 58                      | 52   | 23    | 1                |
| TACL335*010#TA | L         | 3.3              | 10                | 85                     | 7                    | 125                       | 0.5           | 8         | 7.5                   | 1   | 58                      | 52   | 23    | 2                |
| TACR335*010#TA | R         | 3.3              | 10                | 85                     | 7                    | 125                       | 0.5           | 8         | 5                     | 1   | 95                      | 85   | 38    | 1                |
| TACL475*010#TA | L         | 4.7              | 10                | 85                     | 7                    | 125                       | 0.5           | 10        | 6                     | 1   | 65                      | 58   | 26    | 2                |
| TACR475*010#TA | R         | 4.7              | 10                | 85                     | 7                    | 125                       | 0.5           | 8         | 6                     | 1   | 87                      | 78   | 35    | 1                |
| TACL685*010#TA | L         | 6.8              | 10                | 85                     | 7                    | 125                       | 0.7           | 20        | 7.5                   | 1   | 58                      | 52   | 23    | 3                |
| TACR685*010#TA | R         | 6.8              | 10                | 85                     | 7                    | 125                       | 0.7           | 8         | 5                     | 1   | 95                      | 85   | 38    | 1                |
| TACL106*010#TA | L         | 10               | 10                | 85                     | 7                    | 125                       | 1             | 20        | 7.5                   | 1   | 58                      | 52   | 23    | 3                |
| TACR106*010#TA | R         | 10               | 10                | 85                     | 7                    | 125                       | 1             | 8         | 5                     | 1   | 95                      | 85   | 38    | 1                |
| TACR156*010#TA | R         | 15               | 10                | 85                     | 7                    | 125                       | 1.5           | 10        | 5                     | 1   | 95                      | 85   | 38    | 1                |
| TACR226*010#TA | R         | 22               | 10                | 85                     | 7                    | 125                       | 2.2           | 14        | 5                     | 1   | 95                      | 85   | 38    | 2                |
| TACA336*010#TA | A         | 33               | 10                | 85                     | 7                    | 125                       | 3.3           | 12        | 1                     | 1   | 200                     | 180  | 80    | 1                |
| TACR336*010#TA | R         | 33               | 10                | 85                     | 7                    | 125                       | 3.3           | 20        | 5                     | 1   | 95                      | 85   | 38    | 3                |
| TACB476*010#TA | B         | 47               | 10                | 85                     | 7                    | 125                       | 4.7           | 15        | 1                     | 1   | 200                     | 180  | 80    | 1                |
| 16 Volt @ 85°C |           |                  |                   |                        |                      |                           |               |           |                       |     |                         |      |       |                  |
| TACK104*016#TA | K         | 0.1              | 16                | 85                     | 10                   | 125                       | 0.5           | 6         | 40                    | 1   | 19                      | 17   | 8     | 1                |
| TACK154*016#TA | K         | 0.15             | 16                | 85                     | 10                   | 125                       | 0.5           | 6         | 30                    | 1   | 22                      | 20   | 9     | 1                |
| TACK224*016#TA | K         | 0.22             | 16                | 85                     | 10                   | 125                       | 0.5           | 6         | 20                    | 1   | 27                      | 25   | 11    | 1                |
| TACK334*016#TA | K         | 0.33             | 16                | 85                     | 10                   | 125                       | 0.5           | 6         | 20                    | 1   | 27                      | 25   | 11    | 1                |
| TACL474*016#TA | L         | 0.47             | 16                | 85                     | 10                   | 125                       | 0.5           | 6         | 7.5                   | 1   | 58                      | 52   | 23    | 1                |
| TACL684*016#TA | L         | 0.68             | 16                | 85                     | 10                   | 125                       | 0.5           | 6         | 7.5                   | 1   | 58                      | 52   | 23    | 1                |
| TACL105*016#TA | L         | 1                | 16                | 85                     | 10                   | 125                       | 0.5           | 6         | 7.5                   | 1   | 58                      | 52   | 23    | 1                |
| TACL225*016#TA | L         | 2.2              | 16                | 85                     | 10                   | 125                       | 0.5           | 10        | 7.5                   | 1   | 58                      | 52   | 23    | 1                |
| TACR106*016#TA | R         | 10               | 16                | 85                     | 10                   | 125                       | 1.6           | 10        | 5                     | 1   | 95                      | 85   | 38    | 2                |
| 20 Volt @ 85°C |           |                  |                   |                        |                      |                           |               |           |                       |     |                         |      |       |                  |
| TACK224*020#TA | K         | 0.22             | 20                | 85                     | 13                   | 125                       | 0.5           | 6         | 20                    | 1   | 27                      | 25   | 11    | 1                |
| TACR335*020#TA | R         | 3.3              | 20                | 85                     | 13                   | 125                       | 0.7           | 8         | 5                     | 1   | 95                      | 85   | 38    | 1                |
| TACR475*020#TA | R         | 4.7              | 20                | 85                     | 13                   | 125                       | 0.9           | 8         | 5                     | 1   | 95                      | 85   | 38    | 1                |
| 25 Volt @ 85°C |           |                  |                   |                        |                      |                           |               |           |                       |     |                         |      |       |                  |
| TACR105*025#TA | R         | 1                | 25                | 85                     | 17                   | 125                       | 0.5           | 8         | 5                     | 1   | 95                      | 85   | 38    | 1                |

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.

For typical weight and composition see page 211.

**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 – CATEGORY 1

| TEST                  | TAC series (Temperature range -55°C to +125°C)                                                                                                                                                                                                                                                 |               |               |                    |                              |           |       |           |            |       |
|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|---------------|--------------------|------------------------------|-----------|-------|-----------|------------|-------|
|                       | Condition                                                                                                                                                                                                                                                                                      |               |               | Characteristics    |                              |           |       |           |            |       |
| Endurance             | Determine after application of rated voltage for 2000 +48/-0 hours at 85±2°C and then leaving 1-2 hours at room temperature. Also determine of 125°C temperature, category voltage for 2000 +48/-0 hours and then leaving 1-2 hours at room temperature. Power supply impedance to be ≤0.1Ω/V. |               |               | Visual examination | no visible damage            |           |       |           |            |       |
|                       |                                                                                                                                                                                                                                                                                                |               |               | DCL                | 1.25 x initial limit         |           |       |           |            |       |
|                       |                                                                                                                                                                                                                                                                                                |               |               | ΔC/C               | within ±10% of initial value |           |       |           |            |       |
|                       |                                                                                                                                                                                                                                                                                                |               |               | DF                 | 1.5 x initial limit          |           |       |           |            |       |
|                       |                                                                                                                                                                                                                                                                                                |               |               | ESR                | 1.5 x initial limit          |           |       |           |            |       |
| Humidity              | Determine after storage without applied voltage at 40±2°C and 90-95% relative humidity for 1344 +48/-0 hours and then recovery 1-2 hours at room temperature                                                                                                                                   |               |               | Visual examination | no visible damage            |           |       |           |            |       |
|                       |                                                                                                                                                                                                                                                                                                |               |               | DCL                | initial limit                |           |       |           |            |       |
|                       |                                                                                                                                                                                                                                                                                                |               |               | ΔC/C               | within ±5% of initial value  |           |       |           |            |       |
|                       |                                                                                                                                                                                                                                                                                                |               |               | DF                 | 1.2 x initial limit          |           |       |           |            |       |
|                       |                                                                                                                                                                                                                                                                                                |               |               | ESR                | 1.2 x initial limit          |           |       |           |            |       |
| Temperature Stability | Step                                                                                                                                                                                                                                                                                           | Temperature°C | Duration(min) |                    | +20°C                        | -55°C     | +20°C | +85°C     | +125°C     | +20°C |
|                       | 1                                                                                                                                                                                                                                                                                              | +20±2         | 15            | DCL                | IL*                          | n/a       | IL*   | 10 x IL*  | 12.5 x IL* | IL*   |
|                       | 2                                                                                                                                                                                                                                                                                              | -55+0/-3      | 15            |                    |                              |           |       |           |            |       |
|                       | 3                                                                                                                                                                                                                                                                                              | +20±2         | 15            | ΔC/C               | n/a                          | +0/-10%   | ±5%   | +10/-0%   | +15/-0%    | ±5%   |
|                       | 4                                                                                                                                                                                                                                                                                              | +85+3/-0      | 15            | DF                 | IL*                          | 1.5 x IL* | IL*   | 1.5 x IL* | 2 x IL*    | IL*   |
|                       | 5                                                                                                                                                                                                                                                                                              | +125+3/-0     | 15            | ESR                | IL*                          | 1.5 x IL* | IL*   | 1.5 x IL* | 2 x IL*    | IL*   |
|                       | 6                                                                                                                                                                                                                                                                                              | +20±2         | 15            |                    |                              |           |       |           |            |       |
| Surge Voltage         | Test temperature: 85°C+3/0°C<br>Test voltage: 1.3 x rated voltage<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 ±10% of initial value |           |       |           |            |       |
|                       |                                                                                                                                                                                                                                                                                                |               |               | DF                 | initial limit                |           |       |           |            |       |
|                       |                                                                                                                                                                                                                                                                                                |               |               | ESR                | initial limit                |           |       |           |            |       |

\*Initial Limit

### QUALIFICATION TABLE – CATEGORY 2

| TEST                  | TAC series (Temperature range -55°C to +125°C)                                                                                                                                                                                                                                                 |               |               |                    |                              |           |       |           |            |       |
|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|---------------|--------------------|------------------------------|-----------|-------|-----------|------------|-------|
|                       | Condition                                                                                                                                                                                                                                                                                      |               |               | Characteristics    |                              |           |       |           |            |       |
| Endurance             | Determine after application of rated voltage for 2000 +48/-0 hours at 85±2°C and then leaving 1-2 hours at room temperature. Also determine of 125°C temperature, category voltage for 2000 +48/-0 hours and then leaving 1-2 hours at room temperature. Power supply impedance to be ≤0.1Ω/V. |               |               | Visual examination | no visible damage            |           |       |           |            |       |
|                       |                                                                                                                                                                                                                                                                                                |               |               | DCL                | 1.25 x initial limit         |           |       |           |            |       |
|                       |                                                                                                                                                                                                                                                                                                |               |               | ΔC/C               | within ±15% of initial value |           |       |           |            |       |
|                       |                                                                                                                                                                                                                                                                                                |               |               | DF                 | 1.5 x initial limit          |           |       |           |            |       |
|                       |                                                                                                                                                                                                                                                                                                |               |               | ESR                | 1.5 x initial limit          |           |       |           |            |       |
| Humidity              | Determine after storage without applied voltage at 40±2°C and 90-95% relative humidity for 1344 +48/-0 hours and then recovery 1-2 hours at room temperature                                                                                                                                   |               |               | Visual examination | no visible damage            |           |       |           |            |       |
|                       |                                                                                                                                                                                                                                                                                                |               |               | DCL                | initial limit                |           |       |           |            |       |
|                       |                                                                                                                                                                                                                                                                                                |               |               | ΔC/C               | within ±10% of initial value |           |       |           |            |       |
|                       |                                                                                                                                                                                                                                                                                                |               |               | DF                 | 1.2 x initial limit          |           |       |           |            |       |
|                       |                                                                                                                                                                                                                                                                                                |               |               | ESR                | 1.2 x initial limit          |           |       |           |            |       |
| Temperature Stability | Step                                                                                                                                                                                                                                                                                           | Temperature°C | Duration(min) |                    | +20°C                        | -55°C     | +20°C | +85°C     | +125°C     | +20°C |
|                       | 1                                                                                                                                                                                                                                                                                              | +20±2         | 15            | DCL                | IL*                          | n/a       | IL*   | 10 x IL*  | 12.5 x IL* | IL*   |
|                       | 2                                                                                                                                                                                                                                                                                              | -55+0/-3      | 15            |                    |                              |           |       |           |            |       |
|                       | 3                                                                                                                                                                                                                                                                                              | +20±2         | 15            | ΔC/C               | n/a                          | +0/-15%   | ±5%   | +15/-0%   | +20/-0%    | ±5%   |
|                       | 4                                                                                                                                                                                                                                                                                              | +85+3/-0      | 15            | DF                 | IL*                          | 1.5 x IL* | IL*   | 1.5 x IL* | 2 x IL*    | IL*   |
|                       | 5                                                                                                                                                                                                                                                                                              | +125+3/-0     | 15            | ESR                | IL*                          | 1.5 x IL* | IL*   | 1.5 x IL* | 2 x IL*    | IL*   |
|                       | 6                                                                                                                                                                                                                                                                                              | +20±2         | 15            |                    |                              |           |       |           |            |       |
| Surge Voltage         | Test temperature: 85°C+3/0°C<br>Test voltage: 1.3 x rated voltage<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                | 1.5 x initial limit          |           |       |           |            |       |
|                       |                                                                                                                                                                                                                                                                                                |               |               | ΔC/C               | within ±15% of initial value |           |       |           |            |       |
|                       |                                                                                                                                                                                                                                                                                                |               |               | DF                 | 1.5 x initial limit          |           |       |           |            |       |
|                       |                                                                                                                                                                                                                                                                                                |               |               | ESR                | 1.5 x initial limit          |           |       |           |            |       |

\*Initial Limit

### QUALIFICATION TABLE – CATEGORY 3

| TEST                  | TAC series (Temperature range -55°C to +125°C)                                                                                                                                                                                                                                                 |               |               |                    |                              |            |       |            |            |           |
|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|---------------|--------------------|------------------------------|------------|-------|------------|------------|-----------|
|                       | Condition                                                                                                                                                                                                                                                                                      |               |               | Characteristics    |                              |            |       |            |            |           |
| Endurance             | Determine after application of rated voltage for 2000 +48/-0 hours at 85±2°C and then leaving 1-2 hours at room temperature. Also determine of 125°C temperature, category voltage for 2000 +48/-0 hours and then leaving 1-2 hours at room temperature. Power supply impedance to be ≤0.1Ω/V. |               |               | Visual examination | no visible damage            |            |       |            |            |           |
|                       |                                                                                                                                                                                                                                                                                                |               |               | DCL                | 1.25 x initial limit         |            |       |            |            |           |
|                       |                                                                                                                                                                                                                                                                                                |               |               | ΔC/C               | within ±30% of initial value |            |       |            |            |           |
|                       |                                                                                                                                                                                                                                                                                                |               |               | DF                 | 1.5 x initial limit          |            |       |            |            |           |
|                       |                                                                                                                                                                                                                                                                                                |               |               | ESR                | 1.5 x initial limit          |            |       |            |            |           |
| Humidity              | Determine after storage without applied voltage at 40±2°C and 90-95% relative humidity for 1344 +48/-0 hours and then recovery 1-2 hours at room temperature                                                                                                                                   |               |               | Visual examination | no visible damage            |            |       |            |            |           |
|                       |                                                                                                                                                                                                                                                                                                |               |               | DCL                | 2 x initial limit            |            |       |            |            |           |
|                       |                                                                                                                                                                                                                                                                                                |               |               | ΔC/C               | within ±30% of initial value |            |       |            |            |           |
|                       |                                                                                                                                                                                                                                                                                                |               |               | DF                 | 1.5 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*   | 12.5 x IL* | IL*       |
|                       | 2                                                                                                                                                                                                                                                                                              | -55+0/-3      | 15            |                    |                              |            |       |            |            |           |
|                       | 3                                                                                                                                                                                                                                                                                              | +20±2         | 15            | ΔC/C               | n/a                          | +0/-25%    | ±5%   | +20/-0%    | +25/-0%    | ±20%      |
|                       | 4                                                                                                                                                                                                                                                                                              | +85+3/-0      | 15            | DF                 | IL*                          | 1.5 x IL*  | IL*   | 1.5 x IL*  | 2 x IL*    | 1.5 x IL* |
|                       | 5                                                                                                                                                                                                                                                                                              | +125+3/-0     | 15            |                    |                              |            |       |            |            |           |
|                       | 6                                                                                                                                                                                                                                                                                              | +20±2         | 15            | ESR                | IL*                          | 1.25 x IL* | IL*   | 1.25 x IL* | 2 x IL*    | 1.5 x IL* |
| Surge Voltage         | Test temperature: 85°C+3/0°C<br>Test voltage: 1.3 x rated voltage<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 ±30% of initial value |            |       |            |            |           |
|                       |                                                                                                                                                                                                                                                                                                |               |               | DF                 | 2 x initial limit            |            |       |            |            |           |
|                       |                                                                                                                                                                                                                                                                                                |               |               | ESR                | 2 x initial limit            |            |       |            |            |           |

\*Initial Limit

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