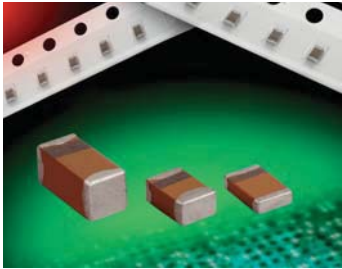


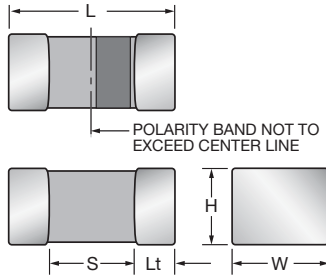
## Low Profile



- The world's smallest surface mount tantalum capacitor
- CV range: 1.0-220µF / 2-16V
- 5 case sizes available in low profile option
- Industrial and hi-rel medical applications



### CASE DIMENSIONS: millimeters (inches)



| Code | EIA Code | EIA Metric | Length (L)   | Width (W)  | Height (H)                | Termination Spacing(S)    | Minimum Termination Length (Lt) | Average Mass |
|------|----------|------------|--|--|---------------------------|---------------------------|---------------------------------|--------------|
| H    | 0805     | 2012-10    | 2.00 <sup>+0.20</sup> <sub>-0.00</sub><br>(0.079 <sup>+0.008</sup> <sub>-0.000</sub> ) | 1.35 <sup>+0.15</sup> <sub>-0.00</sub><br>(0.053 <sup>+0.006</sup> <sub>-0.000</sub> ) | 1.00 max.<br>(0.039 max.) | 0.70 min.<br>(0.027 min.) | 0.15<br>(0.006)                 | 17.1mg       |
| J    | 0603     | 1608-08    | 1.60 <sup>+0.20</sup> <sub>-0.00</sub><br>(0.063 <sup>+0.008</sup> <sub>-0.000</sub> ) | 0.85 <sup>+0.15</sup> <sub>-0.00</sub><br>(0.033 <sup>+0.006</sup> <sub>-0.000</sub> ) | 0.75 max.<br>(0.030 max.) | 0.55 min.<br>(0.022 min.) | 0.15<br>(0.006)                 | 5.8mg        |
| T    | 1210     | 3528-12    | 3.50 <sup>+0.20</sup> <sub>-0.20</sub><br>(0.138 <sup>+0.008</sup> <sub>-0.008</sub> ) | 2.80 <sup>+0.20</sup> <sub>-0.10</sub><br>(0.110 <sup>+0.008</sup> <sub>-0.004</sub> ) | 1.20 max.<br>(0.047 max.) | 2.00 min.<br>(0.079 min.) | 0.15<br>(0.006)                 | 65mg         |
| U    | 0805     | 2012-06    | 2.00 <sup>+0.20</sup> <sub>-0.00</sub><br>(0.079 <sup>+0.008</sup> <sub>-0.000</sub> ) | 1.35 <sup>+0.15</sup> <sub>-0.00</sub><br>(0.053 <sup>+0.006</sup> <sub>-0.000</sub> ) | 0.60 max.<br>(0.024 max.) | 0.70 min.<br>(0.027 min.) | 0.15<br>(0.006)                 | 8.9mg        |
| V    | 1206     | 3216-08    | 3.20 ± 0.20<br>(0.126 ± 0.008)   | 1.60 <sup>+0.20</sup> <sub>-0.10</sub><br>(0.063 <sup>+0.008</sup> <sub>-0.004</sub> ) | 0.75 max.<br>(0.030 max.) | 1.80 min.<br>(0.071 min.) | 0.15<br>(0.006)                 | 19.1mg       |

### HOW TO ORDER

|                       |                              |  |                               |  |   |   |
|-----------------------|------------------------------|--|-------------------------------|--|---|---|
| <b>TAC</b>            | <b>U</b>                     | <b>475</b>   | <b>M</b>                      | <b>004</b>   | <b>R</b>  | <b>TA</b>   |
| Type<br>TACmicrochip® | Case Size<br>See table above | Capacitance Code<br>pF code: 1st two digits represent significant figures, 3rd digit represents multiplier (number of zeros to follow) | Tolerance<br>K=±10%<br>M=±20% | Rated DC Voltage<br>002=2Vdc<br>003=3Vdc<br>004=4Vdc<br>006=6.3Vdc<br>010=10Vdc<br>016=16Vdc | Packaging<br>R = 7" Standard Tin Termination Plastic Tape<br>X = 4 1/4" Standard Tin Termination Plastic Tape<br>A = 7" Gold Termination Plastic Tape<br>F = 4 1/4" Gold Termination Plastic Tape | 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:                 | 1.0 µF to 220 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 |  |
| Category Voltage (V <sub>C</sub> ) | ≤ +125°C:  | 1.3 | 2   | 2.7 | 4   | 7  | 10 |  |
| Surge Voltage (V <sub>S</sub> )    | ≤ +85°C:   | 2.7 | 3.9 | 5.2 | 8   | 13 | 20 |  |
| Surge Voltage (V <sub>S</sub> )    | ≤ +125°C:  | 1.7 | 2.6 | 3.2 | 5   | 8  | 12 |  |
| 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  |     |     |     |     |    |    |  |

## Low Profile

### LOW PROFILE & CUSTOM 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              |
| 1.0         | 105  |   |                  |                  |                  |                  | U <sup>(M)</sup> |
| 1.5         | 155  |   |                  |                  |                  | U <sup>(M)</sup> |                  |
| 2.2         | 225  |   |                  |                  |                  |                  |                  |
| 3.3         | 335  |   |                  |                  | U <sup>(M)</sup> |                  |                  |
| 4.7         | 475  |   |                  | U <sup>(M)</sup> |                  |                  |                  |
| 6.8         | 685  |   |                  |                  |                  |                  |                  |
| 10          | 106  | U <sup>(M)</sup>                            |                  | J <sup>(M)</sup> |                  | H/V              |                  |
| 15          | 156  |   |                  |                  | H                | V <sup>(M)</sup> |                  |
| 22          | 226  |   |                  |                  | H                |                  |                  |
| 33          | 336  |   |                  | H                |                  |                  |                  |
| 47          | 476  |   | H <sup>(M)</sup> |                  |                  | T                |                  |
| 68          | 686  |   |                  |                  |                  | T                |                  |
| 100         | 107  |   |                  |                  |                  | T <sup>(M)</sup> |                  |
| 150         | 157  |   |                  |                  |                  |                  |                  |
| 220         | 227  |   | T <sup>(M)</sup> |                  |                  |                  |                  |

Released codes <sup>(M tolerance only)</sup>

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 Part No.                            | EIA Code | EIA Metric | Case Size | Cap (µF) | Rated Voltage (V) | DCL (µA) Max. | DF % Max. | ESR Max. (Ω) @100kHz | MSL |
|---|----------|------------|-----------|----------|-------------------|---------------|-----------|----------------------|-----|
| <b>2 Volt @ 85°C (1.3 Volt @ 125°C)</b> |          |            |           |          |                   |               |           |                      |     |
| TACU106M002#TA                          | 0805     | 2012-06    | U         | 10       | 2                 | 0.5           | 8         | 5                    | 1   |
| <b>3 Volt @ 40°C (2 Volt @ 125°C)</b>   |          |            |           |          |                   |               |           |                      |     |
| TACH476M003#TA                          | 0805     | 2012-10    | H         | 47       | 3                 | 1.4           | 20        | 5                    | 1   |
| TACT227M003#TA                          | 1210     | 3528-12    | T         | 220      | 3                 | 6.6           | 20        | 1                    | 1   |
| <b>4 Volt @ 85°C (2.7 Volt @ 125°C)</b> |          |            |           |          |                   |               |           |                      |     |
| TACU475M004#TA                          | 0805     | 2012-06    | U         | 4.7      | 4                 | 0.5           | 8         | 5                    | 1   |
| TACJ106M004#TA                          | 0603     | 1608-08    | J         | 10       | 4                 | 0.5           | 20        | 7.5                  | 1   |
| TACH336*004#TA                          | 0805     | 2012-10    | H         | 33       | 4                 | 1.3           | 14        | 5                    | 1   |
| <b>6.3 Volt @ 85°C (4 Volt @ 125°C)</b> |          |            |           |          |                   |               |           |                      |     |
| TACU335M006#TA                          | 0805     | 2012-06    | U         | 3.3      | 6.3               | 0.5           | 8         | 5                    | 1   |
| TACH156*006#TA                          | 0805     | 2012-10    | H         | 15       | 6.3               | 0.9           | 8         | 5                    | 1   |
| TACH226*006#TA                          | 0805     | 2012-10    | H         | 22       | 6.3               | 1.4           | 10        | 5                    | 1   |
| TACT686*006#TA                          | 1210     | 3528-12    | T         | 68       | 6.3               | 4.3           | 15        | 1                    | 1   |
| TACT107M006#TA                          | 1210     | 3528-12    | T         | 100      | 6.3               | 6.3           | 12        | 1                    | 1   |
| <b>10 Volt @ 85°C (7 Volt @ 125°C)</b>  |          |            |           |          |                   |               |           |                      |     |
| TACU225M010#TA                          | 0805     | 2012-06    | U         | 2.2      | 10                | 0.5           | 8         | 5                    | 1   |
| TACH106*010#TA                          | 0805     | 2012-10    | H         | 10       | 10                | 1.0           | 8         | 5                    | 1   |
| TACV106*010#TA                          | 1206     | 3216-08    | V         | 10       | 10                | 1.0           | 10        | 2                    | 1   |
| TACV156M010#TA                          | 1206     | 3216-08    | V         | 15       | 10                | 1.5           | 10        | 2                    | 1   |
| TACT476*010#TA                          | 1210     | 3528-12    | T         | 47       | 10                | 4.7           | 12        | 1                    | 1   |
| <b>16 Volt @ 85°C (10 Volt @ 125°C)</b> |          |            |           |          |                   |               |           |                      |     |
| TACU105M016#TA                          | 0805     | 2012-06    | U         | 1        | 16                | 0.5           | 8         | 5                    | 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 124.

**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.**

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