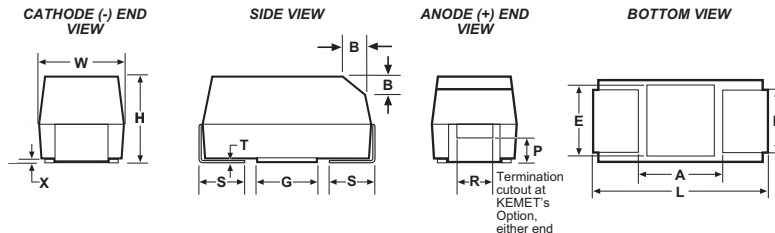


## FEATURES

- Meets or Exceeds EIA Standard 535BAAC
- Taped and Reeled per EIA 481-1
- Symmetrical, Compliant Terminations
- Optional Gold-plated Terminations
- Laser-marked Case
- 100% Surge current test on C, D, E, U, V, X sizes
- Halogen Free Epoxy
- Capacitance: 0.1  $\mu$ F to 1000  $\mu$ F
- Tolerance:  $\pm 10\%$ ,  $\pm 20\%$
- Voltage: 2.5-50 VDC
- Extended Range Values
- Low Profile Case Sizes
- RoHS Compliance & Lead Free Terminations  
(See [www.kemet.com](http://www.kemet.com) for transition information)
- Operating Temperature: -55°C to +125°C

## CAPACITOR OUTLINE DRAWING

STANDARD T491 DIMENSIONS  
Millimeters (inches)

| Case Size |         | Component                  |                            |                            |                      |                      |                          |                              |               |               |                |               |               |               |
|-----------|---------|----------------------------|----------------------------|----------------------------|----------------------|----------------------|--------------------------|------------------------------|---------------|---------------|----------------|---------------|---------------|---------------|
| KEMET     | EIA     | L*                         | W*                         | H*                         | F* ± 0.1<br>± (.004) | S* ± 0.3<br>± (.012) | B ± 0.15<br>(Ref) ± .006 | X<br>(Ref)                   | P<br>(Ref)    | R<br>(Ref)    | T<br>(Ref)     | A<br>(Min)    | G<br>(Ref)    | E<br>(Ref)    |
| A         | 3216-18 | 3.2 ± 0.2<br>(.126 ± .008) | 1.6 ± 0.2<br>(.063 ± .008) | 1.6 ± 0.2<br>(.063 ± .008) | 1.2<br>(.047)        | 0.8<br>(.031)        | 0.4<br>(.016)            | 0.10 ± 0.10<br>(.004 ± .004) | 0.4<br>(.016) | 0.4<br>(.016) | 0.13<br>(.005) | 1.4<br>(.055) | 1.1<br>(.043) | 1.3<br>(.051) |
| B         | 3528-21 | 3.5 ± 0.2<br>(.138 ± .008) | 2.8 ± 0.2<br>(.110 ± .008) | 1.9 ± 0.2<br>(.075 ± .008) | 2.2<br>(.087)        | 0.8<br>(.031)        | 0.4<br>(.016)            | 0.10 ± 0.10<br>(.004 ± .004) | 0.5<br>(.020) | 1.0<br>(.039) | 0.13<br>(.005) | 1.1<br>(.043) | 1.8<br>(.071) | 2.2<br>(.087) |
| C         | 6032-28 | 6.0 ± 0.3<br>(.236 ± .012) | 3.2 ± 0.3<br>(.126 ± .012) | 2.5 ± 0.3<br>(.098 ± .012) | 2.2<br>(.087)        | 1.3<br>(.051)        | 0.5<br>(.020)            | 0.10 ± 0.10<br>(.004 ± .004) | 0.9<br>(.035) | 1.0<br>(.039) | 0.13<br>(.005) | 3.1<br>(.122) | 2.8<br>(.110) | 2.4<br>(.094) |
| D         | 7343-31 | 7.3 ± 0.3<br>(.287 ± .012) | 4.3 ± 0.3<br>(.169 ± .012) | 2.8 ± 0.3<br>(.110 ± .012) | 2.4<br>(.094)        | 1.3<br>(.051)        | 0.5<br>(.020)            | 0.10 ± 0.10<br>(.004 ± .004) | 0.9<br>(.035) | 1.0<br>(.039) | 0.13<br>(.005) | 3.8<br>(.150) | 3.5<br>(.138) | 3.5<br>(.138) |
| X         | 7343-43 | 7.3 ± 0.3<br>(.287 ± .012) | 4.3 ± 0.3<br>(.169 ± .012) | 4.0 ± 0.3<br>(.157 ± .012) | 2.4<br>(.094)        | 1.3<br>(.051)        | 0.5<br>(.020)            | 0.10 ± 0.10<br>(.004 ± .004) | 1.7<br>(.067) | 1.0<br>(.039) | 0.13<br>(.005) | 3.8<br>(.150) | 3.5<br>(.138) | 3.5<br>(.138) |
| E         | 7260-38 | 7.3 ± 0.3<br>(.287 ± .012) | 6.0 ± 0.3<br>(.236 ± .012) | 3.6 ± 0.2<br>(.142 ± .008) | 4.1<br>(.161)        | 1.3<br>(.051)        | 0.5<br>(.020)            | 0.10 ± 0.10<br>(.004 ± .004) | 0.9<br>(.035) | 1.0<br>(.039) | 0.13<br>(.005) | 3.8<br>(.150) | 3.5<br>(.138) | 3.5<br>(.138) |

Notes: 1. Metric dimensions govern  
2. (Ref) Dimensions provided for reference only  
\* Mil-PRF-55365/8 Specified Dimensions

LOW PROFILE T491 DIMENSIONS  
Millimeters (inches)

| Case Size |         | Component                  |                            |               |                      |                      |                |                |               |               |               |
|-----------|---------|----------------------------|----------------------------|---------------|----------------------|----------------------|----------------|----------------|---------------|---------------|---------------|
| KEMET     | EIA     | L*                         | W*                         | H max         | F* ± 0.1<br>± (.004) | S* ± 0.3<br>± (.012) | X (Ref)        | T (Ref)        | A (Min)       | G (Ref)       | E (Ref)       |
| R         | 2012-12 | 2.0 ± 0.2<br>(.079 ± .008) | 1.3 ± 0.2<br>(.051 ± .008) | 1.2<br>(.047) | 0.9<br>(.035)        | 0.5<br>(.020)        | 0.05<br>(.002) | 0.13<br>(.005) | 0.8<br>(.031) | 0.5<br>(.020) | 0.8<br>(.031) |
| S         | 3216-12 | 3.2 ± 0.2<br>(.126 ± .008) | 1.6 ± 0.2<br>(.063 ± .008) | 1.2<br>(.047) | 1.2<br>(.047)        | 0.8<br>(.031)        | 0.05<br>(.002) | 0.13<br>(.005) | 1.4<br>(.055) | 1.1<br>(.043) | 1.3<br>(.051) |
| T         | 3528-12 | 3.5 ± 0.2<br>(.138 ± .008) | 2.8 ± 0.2<br>(.110 ± .008) | 1.2<br>(.047) | 2.2<br>(.087)        | 0.8<br>(.031)        | 0.05<br>(.002) | 0.13<br>(.005) | 1.1<br>(.083) | 1.8<br>(.071) | 2.2<br>(.087) |
| U         | 6032-15 | 6.0 ± 0.3<br>(.236 ± .012) | 3.2 ± 0.3<br>(.126 ± .012) | 1.5<br>(.059) | 2.2<br>(.087)        | 1.3<br>(.051)        | 0.05<br>(.002) | 0.13<br>(.005) | 3.1<br>(.122) | 2.8<br>(.110) | 2.4<br>(.094) |
| V         | 7343-20 | 7.3 ± 0.3<br>(.287 ± .012) | 4.3 ± 0.3<br>(.169 ± .012) | 2.0<br>(.079) | 2.4<br>(.094)        | 1.3<br>(.051)        | 0.05<br>(.002) | 0.13<br>(.005) | 3.8<br>(.150) | 3.5<br>(.138) | 3.5<br>(.138) |

Notes: 1. Metric dimensions govern  
2. (Ref) Dimensions provided for reference only  
3. No dimensions provided for B, P or R because low profile cases do not have a bevel or a notch.

## T491 ORDERING INFORMATION

**T** **491** **S** **685** **K** **004** **A** **I**

Tantalum \_\_\_\_\_  
 Series \_\_\_\_\_  
 491 – Industrial  
 Case Size \_\_\_\_\_  
 A,B,C,D,E,R,S,T,U,V,X  
 Capacitance Picofarad Code \_\_\_\_\_  
 First two digits represent significant figures. Third digit specifies number of zeros.

\_\_\_\_\_ Lead Material  
 T = 100% Matte Tin (Sn) Plated\*  
 H = Standard Solder Coated (SnPb 5% Pb minimum)  
 G = Gold Plated (A,B,C,D,X only)  
 \_\_\_\_\_ Failure Rate  
 A = Not Applicable  
 \_\_\_\_\_ Voltage  
 As Shown  
 \_\_\_\_\_ Capacitance Tolerance  
 M =  $\pm 20\%$   
 K =  $\pm 10\%$

\*Part number example: T491B105M035AT (14 digits - no spaces). See [www.kemet.com](http://www.kemet.com) for Pb Free transition.  
 \*\* "S" Termination codes are converting from 90Sn/10 Pb to 100% tin finishes. Orders including "S" suffix termination codes do not guarantee Pb-free product.

**T491 TANTALUM CHIP CAPACITANCE VALUES**  
**Case Size by Capacitance and Voltage**

| Capacitance |      | Rated Voltage @ +85°C |   |                |                |                  |              |         |       |       |       |
|-------------|------|-----------------------|---|----------------|----------------|------------------|--------------|---------|-------|-------|-------|
| μF          | Code | 2.5                   | 3 | 4              | 6              | 10               | 16           | 20      | 25    | 35    | 50    |
| 0.10        | 104  |                       |   |                |                |                  |              |         |       | A     | A     |
| 0.15        | 154  |                       |   |                |                |                  |              |         |       | A     | A/B   |
| 0.22        | 224  |                       |   |                |                |                  |              |         |       | A     | B     |
| 0.33        | 334  |                       |   |                |                |                  |              |         | A     | A     | B     |
| 0.47        | 474  |                       |   |                |                |                  |              |         | A     | A/B   | B/C   |
| 0.68        | 684  |                       |   |                |                |                  |              | A       | A     | A/B   | B/C   |
| 1.0         | 105  |                       |   |                |                |                  | A            | R/S/A   | A/B   | A/B   | V/B/C |
| 1.5         | 155  |                       |   |                |                | A                | A            | S/A     | R/A/B | B/C   | C/D   |
| 2.2         | 225  |                       |   |                | R/A            | A/B              | R/S/A        | R/A/B   | B/C   | B/C   | C/D   |
| 3.3         | 335  |                       |   | A              | A              | R/S/A            | A/B          | T/A/B   | B/C   | B/C   | D     |
| 4.7         | 475  |                       |   | A              | S/A            | A/B<br>R/S       | A/B/T        | A/B/C   | A/B/C | B/C/D | D     |
| 6.8         | 685  |                       |   | S/A            | R/S<br>A/B     | S/T<br>A/B       | A/B/C        | U/A/B/C | B/C   | C/D   | D/X   |
| 10.0        | 106  |                       |   | R/S<br>A/B     | R/S/T<br>A/B   | S/T/A<br>B/C     | B/C/U<br>T/A | U/B/C   | B/C/D | V/C/D | D/X   |
| 15.0        | 156  |                       |   | S/T<br>A/B     | S/T<br>A/B/C   | T/U<br>A/B/C     | U/A/B/C      | C/D     | C/D   | C/D/X | X     |
| 22.0        | 226  |                       |   | S/T<br>A/B/C   | U/T<br>A/B/C   | T/U<br>A/B/C     | U/B<br>C/D   | V/C/D   | V/C/D | D/X   |       |
| 33.0        | 336  |                       | A | T/U<br>A/B/C   | T/U<br>A/B/C   | U/V/A<br>T/B/C/D | U/C/D        | V/C/D   | D/X   | X     |       |
| 47.0        | 476  |                       |   | T/U<br>A/B/C   | T/U/A<br>B/C/D | U/V<br>B/C/D     | V/C/D        | D       | D/X   | X/E   |       |
| 68.0        | 686  |                       |   | U/A<br>B/C/D   | U/B<br>C/D     | U/V<br>B/C/D     | V/C/D        | D/X     | D/X   |       |       |
| 100.0       | 107  | T                     |   | T/U/A<br>B/C/D | U/V<br>B/C/D   | V/C/D            | V/D/X        | D/X/E   |       |       |       |
| 150.0       | 157  |                       |   | V/B<br>C/D     | V/C/D          | V/C<br>D/X       | D/X          |         |       |       |       |
| 220.0       | 227  |                       |   | V/B            | V/C<br>D/X     | V/D/X            | X            |         |       |       |       |
| 330.0       | 337  |                       |   | V/C/D          | D/X            | D/X/E            |              |         |       |       |       |
| 470.0       | 477  |                       |   | D/X            | D/X/E          | X/E              |              |         |       |       |       |
| 680.0       | 687  |                       |   | D/X            | E              |                  |              |         |       |       |       |
| 1000.0      | 108  |                       |   | X/E            |                |                  |              |         |       |       |       |

## T491 RATINGS &amp; PART NUMBER REFERENCE

| Capacitance<br>μF                                           | Case<br>Size | KEMET<br>Part Number | DC<br>Leakage<br>μA @ 25°C<br>Max | DF %<br>@ +25°C<br>120 Hz<br>Max | ESR Ω<br>@ +25°C<br>100 kHz<br>Max |
|-------------------------------------------------------------|--------------|----------------------|-----------------------------------|----------------------------------|------------------------------------|
| <b>2.5 Volt Rating at +85°C (1.7 Volt Rating at +125°C)</b> |              |                      |                                   |                                  |                                    |
| 100.0                                                       | T            | T491T107(1)2R5A(2)   | 2.5                               | 24.0                             | 3.9                                |
| 220.0                                                       | D            | T491D227(1)2R5A(2)   | 5.5                               | 8.0                              | 0.3                                |
| <b>3 Volt Rating at +85°C (2 Volt Rating at +125°C)</b>     |              |                      |                                   |                                  |                                    |
| #33.0                                                       | A            | T491A336(1)003A(2)   | 1.0                               | 6.0                              | 4.0                                |
| <b>4 Volt Rating at +85°C (2.7 Volt Rating at +125°C)</b>   |              |                      |                                   |                                  |                                    |
| 3.3                                                         | A            | T491A335(1)004A(2)   | 0.5                               | 6.0                              | 8.0                                |
| 4.7                                                         | A            | T491A475(1)004A(2)   | 0.5                               | 6.0                              | 8.0                                |
| 6.8                                                         | A            | T491A685(1)004A(2)   | 0.5                               | 6.0                              | 6.0                                |
| 6.8                                                         | S            | T491S685(1)004A(2)   | 0.5                               | 6.0                              | 15.0                               |
| 10.0                                                        | B            | T491B106(1)004A(2)   | 0.5                               | 6.0                              | 3.5                                |
| 10.0                                                        | A            | T491A106(1)004A(2)   | 0.5                               | 6.0                              | 6.0                                |
| #10.0                                                       | S            | T491S106(1)004A(2)   | 0.5                               | 6.0                              | 15.0                               |
| #10.0                                                       | R            | T491R106(1)004A(2)   | 0.5                               | 8.0                              | 10.0                               |
| 15.0                                                        | B            | T491B156(1)004A(2)   | 0.6                               | 6.0                              | 3.5                                |
| 15.0                                                        | A            | T491A156(1)004A(2)   | 0.6                               | 6.0                              | 4.0                                |
| 15.0                                                        | T            | T491T156(1)004A(2)   | 0.6                               | 6.0                              | 5.0                                |
| #15.0                                                       | S            | T491S156(1)004A(2)   | 0.6                               | 10.0                             | 15.0                               |
| 22.0                                                        | C            | T491C226(1)004A(2)   | 0.9                               | 6.0                              | 1.8                                |
| 22.0                                                        | B            | T491B226(1)004A(2)   | 0.9                               | 6.0                              | 3.5                                |
| #22.0                                                       | A            | T491A226(1)004A(2)   | 0.9                               | 6.0                              | 4.0                                |
| #22.0                                                       | T            | T491T226(1)004A(2)   | 0.9                               | 6.0                              | 5.0                                |
| 22.0                                                        | S            | T491S226(1)004A(2)   | 0.9                               | 10.0                             | 10.0                               |
| 33.0                                                        | C            | T491C336(1)004A(2)   | 1.3                               | 6.0                              | 1.8                                |
| 33.0                                                        | U            | T491U336(1)004A(2)   | 1.3                               | 6.0                              | 1.8                                |
| 33.0                                                        | B            | T491B336(1)004A(2)   | 1.3                               | 6.0                              | 3.5                                |
| #33.0                                                       | A            | T491A336(1)004A(2)   | 1.3                               | 6.0                              | 4.0                                |
| #33.0                                                       | T            | T491T336(1)004A(2)   | 1.3                               | 8.0                              | 5.0                                |
| 47.0                                                        | C            | T491C476(1)004A(2)   | 1.9                               | 6.0                              | 1.8                                |
| 47.0                                                        | U            | T491U476(1)004A(2)   | 1.9                               | 6.0                              | 1.8                                |
| #47.0                                                       | B            | T491B476(1)004A(2)   | 1.9                               | 6.0                              | 3.0                                |
| #47.0                                                       | A            | T491A476M004A(2)     | 1.9                               | 12.0                             | 2.5                                |
| #47.0                                                       | T            | T491T476M004A(2)     | 1.9                               | 12.0                             | 6.0                                |
| 68.0                                                        | D            | T491D686(1)004A(2)   | 2.7                               | 6.0                              | 0.8                                |
| 68.0                                                        | C            | T491C686(1)004A(2)   | 2.7                               | 6.0                              | 1.6                                |
| #68.0                                                       | U            | T491U686(1)004A(2)   | 2.7                               | 6.0                              | 1.8                                |
| #68.0                                                       | B            | T491B686(1)004A(2)   | 2.7                               | 6.0                              | 3.5                                |
| #68.0                                                       | A            | T491A686(1)004A(2)   | 2.8                               | 30.0                             | 4.0                                |
| 100.0                                                       | D            | T491D107(1)004A(2)   | 4.0                               | 8.0                              | 0.8                                |
| #100.0                                                      | C            | T491C107(1)004A(2)   | 4.0                               | 8.0                              | 1.2                                |
| #100.0                                                      | U            | T491U107(1)004A(2)   | 4.0                               | 10.0                             | 1.8                                |
| #100.0                                                      | B            | T491B107M004A(2)     | 4.0                               | 8.0                              | 0.9                                |
| †100.0                                                      | A            | T491A107M004A(2)     | 4.0                               | 30.0                             | 4.0                                |
| †100.0                                                      | T            | T491T107M004A(2)     | 4.0                               | 30.0                             | 5.0                                |
| 150.0                                                       | D            | T491D157(1)004A(2)   | 6.0                               | 8.0                              | 0.8                                |
| 150.0                                                       | V            | T491V157(1)004A(2)   | 6.0                               | 8.0                              | 0.7                                |
| #150.0                                                      | C            | T491C157(1)004A(2)   | 6.0                               | 8.0                              | 1.2                                |
| †150.0                                                      | B            | T491B157M004A(2)     | 6.0                               | 12.0                             | 2.0                                |
| #220.0                                                      | V            | T491V227(1)004A(2)   | 8.8                               | 8.0                              | 0.7                                |
| #220.0                                                      | B            | T491B227M004A(2)     | 8.8                               | 18.0                             | 0.5                                |
| 330.0                                                       | D            | T491D337(1)004A(2)   | 13.2                              | 8.0                              | 0.7                                |
| †330.0                                                      | V            | T491V337(1)004A(2)   | 13.2                              | 12.0                             | 0.7                                |
| #330.0                                                      | C            | T491C337(1)004A(2)   | 13.2                              | 10.0                             | 0.9                                |
| #470.0                                                      | X            | T491X477(1)004A(2)   | 18.8                              | 8.0                              | 0.5                                |
| #470.0                                                      | D            | T491D477(1)004A(2)   | 18.8                              | 8.0                              | 0.8                                |
| #680.0                                                      | X            | T491X687(1)004A(2)   | 27.2                              | 12.0                             | 0.5                                |
| #680.0                                                      | D            | T491D687(1)004A(2)   | 27.2                              | 12.0                             | 0.5                                |
| #1000.0                                                     | X            | T491X108(1)004A(2)   | 40.0                              | 12.0                             | 0.5                                |
| #1000.0                                                     | E            | T491E108M004A(2)     | 40.0                              | 15.0                             | 0.2                                |
| <b>**6.3 Volt Rating at +85°C (4 Volt Rating at +125°C)</b> |              |                      |                                   |                                  |                                    |
| 2.2                                                         | R            | T491R225(1)006A(2)   | 0.5                               | 6.0                              | 25.0                               |
| 2.2                                                         | A            | T491A225(1)006A(2)   | 0.5                               | 6.0                              | 8.0                                |
| 3.3                                                         | A            | T491A335(1)006A(2)   | 0.5                               | 6.0                              | 8.0                                |
| 4.7                                                         | A            | T491A475(1)006A(2)   | 0.5                               | 6.0                              | 6.0                                |
| 4.7                                                         | S            | T491S475(1)006A(2)   | 0.5                               | 6.0                              | 15.0                               |
| 6.8                                                         | B            | T491B685(1)006A(2)   | 0.5                               | 6.0                              | 3.5                                |
| 6.8                                                         | A            | T491A685(1)006A(2)   | 0.5                               | 6.0                              | 6.0                                |
| #6.8                                                        | S            | T491S685(1)006A(2)   | 0.5                               | 6.0                              | 15.0                               |
| #6.8                                                        | R            | T491R685(1)006A(2)   | 0.5                               | 8.0                              | 15.0                               |
| 10.0                                                        | B            | T491B106(1)006A(2)   | 0.6                               | 6.0                              | 3.5                                |
| 10.0                                                        | A            | T491A106(1)006A(2)   | 0.6                               | 6.0                              | 4.0                                |
| 10.0                                                        | T            | T491T106(1)006A(2)   | 0.6                               | 6.0                              | 5.0                                |
| #10.0                                                       | S            | T491S106(1)006A(2)   | 0.6                               | 10.0                             | 15.0                               |
| #10.0                                                       | R            | T491R106(1)006A(2)   | 0.6                               | 8.0                              | 10.0                               |

| Capacitance<br>μF                                         | Case<br>Size | KEMET<br>Part Number | DC<br>Leakage<br>μA @ 25°C<br>Max | DF %<br>@ +25°C<br>120 Hz<br>Max | ESR Ω<br>@ +25°C<br>100 kHz<br>Max |
|-----------------------------------------------------------|--------------|----------------------|-----------------------------------|----------------------------------|------------------------------------|
| <b>**6 Volt Rating at +85°C (4 Volt Rating at +125°C)</b> |              |                      |                                   |                                  |                                    |
| 15.0                                                      | C            | T491C156(1)006A(2)   | 0.9                               | 6.0                              | 1.8                                |
| 15.0                                                      | B            | T491B156(1)006A(2)   | 0.9                               | 6.0                              | 3.5                                |
| #15.0                                                     | A            | T491A156(1)006A(2)   | 0.9                               | 6.0                              | 3.5                                |
| #15.0                                                     | T            | T491T156(1)006A(2)   | 0.9                               | 6.0                              | 5.0                                |
| #15.0                                                     | S            | T491S156(1)006A(2)   | 0.9                               | 15.0                             | 10.0                               |
| 22.0                                                      | C            | T491C226(1)006A(2)   | 1.4                               | 6.0                              | 1.8                                |
| 22.0                                                      | U            | T491U226(1)006A(2)   | 1.4                               | 6.0                              | 1.8                                |
| 22.0                                                      | B            | T491B226(1)006A(2)   | 1.4                               | 6.0                              | 3.5                                |
| #22.0                                                     | A            | T491A226(1)006A(2)   | 1.4                               | 6.0                              | 4.0                                |
| #22.0                                                     | T            | T491T226(1)006A(2)   | 1.4                               | 8.0                              | 5.0                                |
| 33.0                                                      | C            | T491C336(1)006A(2)   | 2.0                               | 6.0                              | 1.8                                |
| 33.0                                                      | U            | T491U336(1)006A(2)   | 2.0                               | 6.0                              | 1.8                                |
| #33.0                                                     | B            | T491B336(1)006A(2)   | 2.0                               | 6.0                              | 3.0                                |
| #33.0                                                     | A            | T491A336(1)006A(2)   | 2.0                               | 12.0                             | 2.5                                |
| #33.0                                                     | T            | T491T336(1)006A(2)   | 2.0                               | 12.0                             | 6.0                                |
| 47.0                                                      | D            | T491D476(1)006A(2)   | 2.9                               | 6.0                              | 0.8                                |
| 47.0                                                      | C            | T491C476(1)006A(2)   | 2.9                               | 6.0                              | 1.6                                |
| #47.0                                                     | U            | T491U476(1)006A(2)   | 2.9                               | 6.0                              | 1.8                                |
| #47.0                                                     | B            | T491B476(1)006A(2)   | 2.9                               | 6.0                              | 2.0                                |
| †47.0                                                     | A            | T491A476M006A(2)     | 3.0                               | 12.0                             | 3.5                                |
| *47.0                                                     | T            | T491T476(1)006A(2)   | 3.0                               | 24.0                             | 4.4                                |
| 68.0                                                      | D            | T491D686(1)006A(2)   | 4.1                               | 6.0                              | 0.8                                |
| #68.0                                                     | C            | T491C686(1)006A(2)   | 4.1                               | 6.0                              | 1.2                                |
| #68.0                                                     | U            | T491U686(1)006A(2)   | 4.1                               | 10.0                             | 1.8                                |
| #68.0                                                     | B            | T491B686(1)006A(2)   | 4.1                               | 8.0                              | 0.9                                |
| #68.0                                                     | A            | T491A686(1)006A(2)   | 5.0                               | 30.0                             | 4.0                                |
| 100.0                                                     | D            | T491D107(1)006A(2)   | 6.0                               | 8.0                              | 0.8                                |
| 100.0                                                     | V            | T491V107(1)006A(2)   | 6.0                               | 8.0                              | 0.7                                |
| #100.0                                                    | C            | T491C107(1)006A(2)   | 6.0                               | 8.0                              | 0.9                                |
| #100.0                                                    | U            | T491U107(1)006A(2)   | 6.0                               | 10.0                             | 1.8                                |
| #100.0                                                    | B            | T491B107(1)006A(2)   | 6.3                               | 15.0                             | 3.0                                |
| 150.0                                                     | D            | T491D157(1)006A(2)   | 9.0                               | 8.0                              | 0.7                                |
| #150.0                                                    | C            | T491C157(1)006A(2)   | 9.0                               | 8.0                              | 1.2                                |
| #150.0                                                    | V            | T491V157(1)006A(2)   | 9.0                               | 8.0                              | 0.7                                |
| 220.0                                                     | X            | T491X227(1)006A(2)   | 13.2                              | 8.0                              | 0.7                                |
| #220.0                                                    | D            | T491D227(1)006A(2)   | 13.2                              | 8.0                              | 0.7                                |
| #220.0                                                    | C            | T491C227M006A(2)     | 13.2                              | 10.0                             | 1.2                                |
| #220.0                                                    | V            | T491V227(1)006A(2)   | 13.2                              | 12.0                             | 0.7                                |
| 330.0                                                     | X            | T491X337(1)006A(2)   | 19.8                              | 8.0                              | 0.4                                |
| 330.0                                                     | D            | T491D337(1)006A(2)   | 19.8                              | 8.0                              | 0.4                                |
| 330.0                                                     | E            | T491E337(1)006A(2)   | 20.8                              | 8.0                              | 0.5                                |
| 470.0                                                     | X            | T491X477(1)006A(2)   | 28.2                              | 10.0                             | 0.4                                |
| 470.0                                                     | D            | T491D477M006A(2)     | 28.2                              | 12.0                             | 0.4                                |
| 470.0                                                     | E            | T491E477(1)006A(2)   | 29.6                              | 10.0                             | 0.4                                |
| 680.0                                                     | E            | T491E687M006A(2)     | 40.8                              | 12.0                             | 0.5                                |
| <b>10 Volt Rating at +85°C (7 Volt Rating at +125°C)</b>  |              |                      |                                   |                                  |                                    |
| 1.5                                                       | A            | T491A155(1)010A(2)   | 0.5                               | 6.0                              | 8.0                                |
| 2.2                                                       | B            | T491B225(1)010A(2)   | 0.5                               | 6.0                              | 3.5                                |
| 2.2                                                       | A            | T491A225(1)010A(2)   | 0.5                               | 6.0                              | 8.0                                |
| 3.3                                                       | A            | T491A335(1)010A(2)   | 0.5                               | 6.0                              | 6.0                                |
| 3.3                                                       | S            | T491S335(1)010A(2)   | 0.5                               | 6.0                              | 15.0                               |
| #3.3                                                      | R            | T491R335(1)010A(2)   | 0.3                               | 8.0                              | 15.0                               |
| 4.7                                                       | B            | T491B475(1)010A(2)   | 0.5                               | 6.0                              | 3.5                                |
| 4.7                                                       | A            | T491A475(1)010A(2)   | 0.5                               | 6.0                              | 5.0                                |
| #4.7                                                      | S            | T491S475(1)010A(2)   | 0.5                               | 6.0                              | 15.0                               |
| #4.7                                                      | R            | T491R475(1)010A(2)   | 0.5                               | 8.0                              | 10.0                               |
| 6.8                                                       | B            | T491B685(1)010A(2)   | 0.7                               | 6.0                              | 3.5                                |
| 6.8                                                       | A            | T491A685(1)010A(2)   | 0.7                               | 6.0                              | 4.0                                |
| 6.8                                                       | T            | T491T685(1)010A(2)   | 0.7                               | 6.0                              | 5.0                                |
| #6.8                                                      | S            | T491S685(1)010A(2)   | 0.7                               | 10.0                             | 15.0                               |
| 10.0                                                      | C            | T491C106(1)010A(2)   | 1.0                               | 6.0                              | 1.8                                |
| 10.0                                                      | B            | T491B106(1)010A(2)   | 1.0                               | 6.0                              | 3.5                                |
| #10.0                                                     | A            | T491A106(1)010A(2)   | 1.0                               | 6.0                              | 4.0                                |
| #10.0                                                     | T            | T491T106(1)010A(2)   | 1.0                               | 6.0                              | 5.0                                |
| #10.0                                                     | S            | T491S106(1)010A(2)   | 1.0                               | 10.0                             | 15.0                               |
| #10.0                                                     | R            | T491R106(1)010A(2)   | 1.0                               | 24.0                             | 30.0                               |
| 15.0                                                      | C            | T491C156(1)010A(2)   | 1.5                               | 6.0                              | 1.8                                |
| 15.0                                                      | U            | T491U156(1)010A(2)   | 1.5                               | 6.0                              | 1.8                                |
| 15.0                                                      | B            | T491B156(1)010A(2)   | 1.5                               | 6.0                              | 2.8                                |
| #15.0                                                     | A            | T491A156(1)010A(2)   | 1.5                               | 8.0                              | 6.0                                |
| #15.0                                                     | T            | T491T156(1)010A(2)   | 1.5                               | 8.0                              | 5.0                                |

- (1) To complete KEMET Part Number, insert M for ±20% tolerance or K for ±10% tolerance.  
 (2) To complete KEMET Part Number, insert T, H, G lead material designation as shown on page 15.

\*Extended Values

\*\*6 Volt product equivalent to 6.3 volt product.

#Maximum Capacitance Change @ 125°C=+15%.

†Maximum Capacitance Change @ 125°C=+20%.

Higher voltage ratings and tighter tolerance product may be substituted within the same size at KEMET's option.

Voltage substitutions will be marked with the higher voltage rating.

# SOLID TANTALUM CHIP CAPACITORS

## T491 SERIES—Precision Molded Chip

### T491 RATINGS & PART NUMBER REFERENCE

| Capacitance<br>µF                                         | Case<br>Size | KEMET<br>Part Number | DC<br>Leakage<br>µA @ 25°C<br>Max | DF %<br>@ +25°C<br>120 Hz<br>Max | ESR Ω<br>@ +25°C<br>100 kHz<br>Max |
|-----------------------------------------------------------|--------------|----------------------|-----------------------------------|----------------------------------|------------------------------------|
| <b>10 Volt Rating at +85°C (7 Volt Rating at +125°C)</b>  |              |                      |                                   |                                  |                                    |
| 22.0                                                      | C            | T491C226(1)010A(2)   | 2.2                               | 6.0                              | 1.8                                |
| 22.0                                                      | U            | T491U226(1)010A(2)   | 2.2                               | 6.0                              | 1.8                                |
| #22.0                                                     | B            | T491B226(1)010A(2)   | 2.2                               | 6.0                              | 2.4                                |
| #22.0                                                     | A            | T491A226M010A(2)     | 2.2                               | 10.0                             | 6.0                                |
| #22.0                                                     | T            | T491T226(1)010A(2)   | 2.2                               | 12.0                             | 8.0                                |
| 33.0                                                      | D            | T491D336(1)010A(2)   | 3.3                               | 6.0                              | 0.8                                |
| 33.0                                                      | V            | T491V336(1)010A(2)   | 3.3                               | 6.0                              | 0.7                                |
| 33.0                                                      | C            | T491C336(1)010A(2)   | 3.3                               | 6.0                              | 1.6                                |
| #33.0                                                     | U            | T491U336(1)010A(2)   | 3.3                               | 6.0                              | 1.8                                |
| #33.0                                                     | B            | T491B336(1)010A(2)   | 3.3                               | 6.0                              | 1.8                                |
| #33.0                                                     | T            | T491T336(1)010A(2)   | 3.3                               | 24.0                             | 5.0                                |
| #33.0                                                     | A            | T491A336(1)010A(2)   | 3.3                               | 15.0                             | 6.0                                |
| 47.0                                                      | D            | T491D476(1)010A(2)   | 4.7                               | 6.0                              | 0.8                                |
| 47.0                                                      | V            | T491V476(1)010A(2)   | 4.7                               | 6.0                              | 0.7                                |
| #47.0                                                     | C            | T491C476(1)010A(2)   | 4.7                               | 6.0                              | 1.2                                |
| #47.0                                                     | U            | T491U476(1)010A(2)   | 4.7                               | 10.0                             | 2.2                                |
| #47.0                                                     | B            | T491B476(1)010A(2)   | 4.7                               | 8.0                              | 1.0                                |
| 68.0                                                      | D            | T491D686(1)010A(2)   | 6.8                               | 6.0                              | 0.8                                |
| 68.0                                                      | V            | T491V686(1)010A(2)   | 6.8                               | 6.0                              | 0.7                                |
| #68.0                                                     | C            | T491C686(1)010A(2)   | 6.8                               | 6.0                              | 1.2                                |
| #68.0                                                     | U            | T491U686(1)010A(2)   | 6.8                               | 10.0                             | 1.8                                |
| #68.0                                                     | B            | T491B686M010A(2)     | 6.8                               | 10.0                             | 3.0                                |
| 100.0                                                     | D            | T491D107(1)010A(2)   | 10.0                              | 8.0                              | 0.7                                |
| #100.0                                                    | C            | T491C107(1)010A(2)   | 10.0                              | 8.0                              | 1.2                                |
| #100.0                                                    | V            | T491V107(1)010A(2)   | 10.0                              | 8.0                              | 0.7                                |
| 150.0                                                     | X            | T491X157(1)010A(2)   | 15.0                              | 8.0                              | 0.7                                |
| #150.0                                                    | D            | T491D157(1)010A(2)   | 15.0                              | 8.0                              | 0.7                                |
| #150.0                                                    | C            | T491C157(1)010A(2)   | 15.0                              | 10.0                             | 0.9                                |
| #150.0                                                    | V            | T491V157(1)010A(2)   | 15.0                              | 8.0                              | 0.7                                |
| #220.0                                                    | X            | T491X227(1)010A(2)   | 22.0                              | 8.0                              | 0.5                                |
| #220.0                                                    | D            | T491D227(1)010A(2)   | 22.0                              | 8.0                              | 0.5                                |
| #330.0                                                    | D            | T491D337M010A(2)     | 33.0                              | 10.0                             | 0.5                                |
| #330.0                                                    | X            | T491X337(1)010A(2)   | 33.0                              | 10.0                             | 0.5                                |
| #330.0                                                    | E            | T491E337(1)010A(2)   | 33.0                              | 10.0                             | 0.5                                |
| #470.0                                                    | X            | T491X477M010A(2)     | 47.0                              | 10.0                             | 0.2                                |
| #470.0                                                    | E            | T491E477M010A(2)     | 47.0                              | 12.0                             | 0.5                                |
| <b>16 Volt Rating at +85°C (10 Volt Rating at +125°C)</b> |              |                      |                                   |                                  |                                    |
| 1.0                                                       | A            | T491A105(1)016A(2)   | 0.5                               | 4.0                              | 10.0                               |
| 1.5                                                       | A            | T491A155(1)016A(2)   | 0.5                               | 6.0                              | 8.0                                |
| 2.2                                                       | A            | T491A225(1)016A(2)   | 0.5                               | 6.0                              | 6.0                                |
| 2.2                                                       | S            | T491S225(1)016A(2)   | 0.5                               | 6.0                              | 15.0                               |
| #2.2                                                      | R            | T491R225(1)016A(2)   | 0.5                               | 8.0                              | 25.0                               |
| 3.3                                                       | B            | T491B335(1)016A(2)   | 0.5                               | 6.0                              | 3.5                                |
| 3.3                                                       | A            | T491A335(1)016A(2)   | 0.5                               | 6.0                              | 5.0                                |
| 4.7                                                       | C            | T491C475(1)016A(2)   | 0.75                              | 6.0                              | 2.4                                |
| 4.7                                                       | B            | T491B475(1)016A(2)   | 0.8                               | 6.0                              | 3.5                                |
| 4.7                                                       | A            | T491A475(1)016A(2)   | 0.8                               | 6.0                              | 4.0                                |
| 4.7                                                       | T            | T491T475(1)016A(2)   | 0.8                               | 6.0                              | 5.0                                |
| 6.8                                                       | C            | T491C685(1)016A(2)   | 1.1                               | 6.0                              | 1.9                                |
| 6.8                                                       | B            | T491B685(1)016A(2)   | 1.1                               | 6.0                              | 2.5                                |
| #6.8                                                      | A            | T491A685(1)016A(2)   | 1.1                               | 6.0                              | 3.5                                |
| 10.0                                                      | C            | T491C106(1)016A(2)   | 1.6                               | 6.0                              | 1.8                                |
| 10.0                                                      | U            | T491U106(1)016A(2)   | 1.6                               | 6.0                              | 1.8                                |
| 10.0                                                      | B            | T491B106(1)016A(2)   | 1.6                               | 6.0                              | 2.8                                |
| #10.0                                                     | A            | T491A106(1)016A(2)   | 1.6                               | 8.0                              | 7.0                                |
| #10.0                                                     | T            | T491T106(1)016A(2)   | 1.6                               | 8.0                              | 8.0                                |
| 15.0                                                      | C            | T491C156(1)016A(2)   | 2.4                               | 6.0                              | 1.8                                |
| 15.0                                                      | U            | T491U156(1)016A(2)   | 2.4                               | 6.0                              | 1.8                                |
| 15.0                                                      | B            | T491B156(1)016A(2)   | 2.4                               | 6.0                              | 2.5                                |
| #15.0                                                     | A            | T491A156(1)016A(2)   | 2.4                               | 8.0                              | 3.5                                |
| 22.0                                                      | D            | T491D226(1)016A(2)   | 3.6                               | 6.0                              | 0.8                                |
| 22.0                                                      | C            | T491C226(1)016A(2)   | 3.6                               | 6.0                              | 1.6                                |
| #22.0                                                     | U            | T491U226(1)016A(2)   | 3.6                               | 10.0                             | 3.0                                |
| #22.0                                                     | B            | T491B226(1)016A(2)   | 3.6                               | 6.0                              | 2.2                                |
| 33.0                                                      | D            | T491D336(1)016A(2)   | 5.3                               | 6.0                              | 0.8                                |
| #33.0                                                     | C            | T491C336(1)016A(2)   | 5.3                               | 6.0                              | 1.2                                |
| #33.0                                                     | U            | T491U336(1)016A(2)   | 5.3                               | 12.0                             | 3.0                                |
| 47.0                                                      | D            | T491D476(1)016A(2)   | 7.5                               | 6.0                              | 0.8                                |
| 47.0                                                      | V            | T491V476(1)016A(2)   | 7.5                               | 6.0                              | 0.7                                |
| #47.0                                                     | C            | T491C476(1)016A(2)   | 7.5                               | 6.0                              | 1.2                                |
| 68.0                                                      | V            | T491V686(1)016A(2)   | 10.9                              | 6.0                              | 0.7                                |
| 68.0                                                      | D            | T491D686(1)016A(2)   | 10.9                              | 6.0                              | 0.7                                |
| 68.0                                                      | C            | T491C686(1)016A(2)   | 10.9                              | 12.0                             | 1.2                                |

| Capacitance<br>µF                                         | Case<br>Size | KEMET<br>Part Number | DC<br>Leakage<br>µA @ 25°C<br>Max | DF %<br>@ +25°C<br>120 Hz<br>Max | ESR Ω<br>@ +25°C<br>100 kHz<br>Max |
|-----------------------------------------------------------|--------------|----------------------|-----------------------------------|----------------------------------|------------------------------------|
| <b>16 Volt Rating at +85°C (10 Volt Rating at +125°C)</b> |              |                      |                                   |                                  |                                    |
| 100.0                                                     | X            | T491X107(1)016A(2)   | 16.0                              | 8.0                              | 0.7                                |
| †100.0                                                    | V            | T491V107(1)016A(2)   | 16.0                              | 12.0                             | 0.7                                |
| #100.0                                                    | D            | T491D107(1)016A(2)   | 16.0                              | 8.0                              | 0.7                                |
| #150.0                                                    | X            | T491X157(1)016A(2)   | 24.0                              | 8.0                              | 0.5                                |
| #150.0                                                    | D            | T491D157(1)016A(2)   | 24.0                              | 12.0                             | 0.7                                |
| #220.0                                                    | X            | T491X227(1)016A(2)   | 35.2                              | 10.0                             | 0.5                                |
| #220.0                                                    | E            | T491E227(1)016A(2)   | 35.2                              | 7.2                              | 0.9                                |
| <b>20 Volt Rating at +85°C (13 Volt Rating at +125°C)</b> |              |                      |                                   |                                  |                                    |
| 0.47                                                      | R            | T491R474(1)020A(2)   | 0.1                               | 4.0                              | 35.0                               |
| 0.68                                                      | A            | T491A684(1)020A(2)   | 0.5                               | 4.0                              | 12.0                               |
| 1.0                                                       | A            | T491A105(1)020A(2)   | 0.5                               | 4.0                              | 9.0                                |
| 1.0                                                       | S            | T491S105(1)020A(2)   | 0.5                               | 6.0                              | 18.0                               |
| #1.0                                                      | R            | T491R105(1)020A(2)   | 0.5                               | 6.0                              | 20.0                               |
| 1.5                                                       | A            | T491A155(1)020A(2)   | 0.5                               | 6.0                              | 6.5                                |
| 1.5                                                       | S            | T491S155(1)020A(2)   | 0.5                               | 6.0                              | 15.0                               |
| 2.2                                                       | B            | T491B225(1)020A(2)   | 0.5                               | 6.0                              | 3.5                                |
| 2.2                                                       | A            | T491A225(1)020A(2)   | 0.5                               | 0.6                              | 7.0                                |
| 2.2                                                       | R            | T491R225(1)020A(2)   | 0.4                               | 8.0                              | 8.0                                |
| 3.3                                                       | B            | T491B335(1)020A(2)   | 0.7                               | 6.0                              | 3.0                                |
| #3.3                                                      | A            | T491A335(1)020A(2)   | 0.7                               | 6.0                              | 4.5                                |
| 3.3                                                       | T            | T491T335(1)020A(2)   | 0.7                               | 6.0                              | 5.0                                |
| 4.7                                                       | C            | T491C475(1)020A(2)   | 1.0                               | 6.0                              | 2.4                                |
| 4.7                                                       | B            | T491B475(1)020A(2)   | 1.0                               | 6.0                              | 3.0                                |
| #4.7                                                      | A            | T491A475(1)020A(2)   | 1.0                               | 6.0                              | 4.0                                |
| 6.8                                                       | C            | T491C685(1)020A(2)   | 1.4                               | 6.0                              | 1.9                                |
| 6.8                                                       | U            | T491U685(1)020A(2)   | 1.4                               | 6.0                              | 1.9                                |
| #6.8                                                      | B            | T491B685(1)020A(2)   | 1.4                               | 6.0                              | 2.5                                |
| #6.8                                                      | A            | T491A685M020A(2)     | 1.4                               | 8.0                              | 6.0                                |
| 10.0                                                      | C            | T491C106(1)020A(2)   | 2.0                               | 6.0                              | 1.8                                |
| 10.0                                                      | U            | T491U106(1)020A(2)   | 2.0                               | 6.0                              | 1.8                                |
| #10.0                                                     | B            | T491B106(1)020A(2)   | 2.0                               | 6.0                              | 2.1                                |
| #10.0                                                     | A            | T491A106M020A(2)     | 2.0                               | 10.0                             | 5.0                                |
| 15.0                                                      | D            | T491D156(1)020A(2)   | 3.0                               | 6.0                              | 1.0                                |
| 15.0                                                      | C            | T491C156(1)020A(2)   | 3.0                               | 6.0                              | 1.7                                |
| 22.0                                                      | D            | T491D226(1)020A(2)   | 4.4                               | 6.0                              | 0.8                                |
| 22.0                                                      | V            | T491V226(1)020A(2)   | 4.4                               | 6.0                              | 0.7                                |
| #22.0                                                     | C            | T491C226(1)020A(2)   | 4.4                               | 6.0                              | 1.2                                |
| #22.0                                                     | B            | T491B226(1)020A(2)   | 4.4                               | 8.0                              | 4.0                                |
| 33.0                                                      | D            | T491D336(1)020A(2)   | 6.6                               | 6.0                              | 0.8                                |
| #33.0                                                     | C            | T491C336M020A(2)     | 6.6                               | 6.0                              | 1.2                                |
| †33.0                                                     | V            | T491V336(1)020A(2)   | 6.6                               | 8.0                              | 0.7                                |
| 47.0                                                      | C            | T491C476M020A(2)     | 9.4                               | 10.0                             | 0.9                                |
| 47.0                                                      | D            | T491D476(1)020A(2)   | 9.4                               | 6.0                              | 0.7                                |
| 68.0                                                      | X            | T491X686(1)020A(2)   | 13.6                              | 6.0                              | 0.7                                |
| #68.0                                                     | D            | T491D686(1)020A(2)   | 13.6                              | 8.0                              | 0.7                                |
| #100.0                                                    | X            | T491X107(1)020A(2)   | 20.0                              | 8.0                              | 0.5                                |
| #100.0                                                    | E            | T491E107(1)020A(2)   | 20.0                              | 8.0                              | 0.5                                |
| #150.0                                                    | X            | T491X157(1)020A(2)   | 30.0                              | 10.0                             | 0.5                                |
| <b>25 Volt Rating at +85°C (17 Volt Rating at +125°C)</b> |              |                      |                                   |                                  |                                    |
| 0.33                                                      | A            | T491A334(1)025A(2)   | 0.5                               | 4.0                              | 15.0                               |
| 0.47                                                      | A            | T491A474(1)025A(2)   | 0.5                               | 4.0                              | 14.0                               |
| 0.68                                                      | A            | T491A684(1)025A(2)   | 0.5                               | 4.0                              | 10.0                               |
| 1.0                                                       | B            | T491B105(1)025A(2)   | 0.5                               | 4.0                              | 5.0                                |
| 1.0                                                       | A            | T491A105(1)025A(2)   | 0.5                               | 4.0                              | 8.0                                |
| 1.0                                                       | S            | T491S105(1)025A(2)   | 0.25                              | 6.0                              | 18.0                               |
| 1.5                                                       | B            | T491B155(1)025A(2)   | 0.5                               | 6.0                              | 5.0                                |
| 1.5                                                       | A            | T491A155(1)025A(2)   | 0.5                               | 6.0                              | 7.5                                |
| 1.5                                                       | R            | T491R155(1)025A(2)   | 0.4                               | 8.0                              | 8.0                                |
| 2.2                                                       | C            | T491C225(1)025A(2)   | 0.6                               | 6.0                              | 3.5                                |
| 2.2                                                       | B            | T491B225(1)025A(2)   | 0.6                               | 6.0                              | 4.5                                |
| 3.3                                                       | C            | T491C335(1)025A(2)   | 0.9                               | 6.0                              | 2.5                                |
| 3.3                                                       | B            | T491B335(1)025A(2)   | 0.9                               | 6.0                              | 3.5                                |
| 4.7                                                       | C            | T491C475(1)025A(2)   | 1.2                               | 6.0                              | 2.4                                |
| #4.7                                                      | B            | T491B475(1)025A(2)   | 1.2                               | 6.0                              | 1.5                                |
| #4.7                                                      | A            | T491A475M025A(2)     | 1.2                               | 8.0                              | 6.0                                |
| 6.8                                                       | C            | T491C685(1)025A(2)   | 1.7                               | 6.0                              | 1.9                                |
| 6.8                                                       | B            | T491B685(1)025A(2)   | 1.7                               | 8.0                              | 2.8                                |
| 10.0                                                      | D            | T491D106(1)025A(2)   | 2.5                               | 6.0                              | 1.0                                |
| 10.0                                                      | C            | T491C106(1)025A(2)   | 2.5                               | 6.0                              | 1.5                                |
| 10.0                                                      | B            | T491B106(1)025A(2)   | 2.5                               | 8.0                              | 3.0                                |
| 15.0                                                      | D            | T491D156(1)025A(2)   | 3.8                               | 6.0                              | 1.0                                |
| #15.0                                                     | C            | T491C156(1)025A(2)   | 3.8                               | 6.0                              | 1.5                                |
| #15.0                                                     | B            | T491B156(1)025A(2)   | 3.8                               | 8.0                              | 4.0                                |
| 22.0                                                      | D            | T491D226(1)025A(2)   | 5.5                               | 6.0                              | 0.8                                |
| 22.0                                                      | C            | T491C226(1)025A(2)   | 5.5                               | 6.0                              | 1.4                                |
| 22.0                                                      | V            | T491V226(1)025A(2)   | 5.5                               | 6.0                              | 0.7                                |
| 33.0                                                      | X            | T491X336(1)025A(2)   | 8.3                               | 6.0                              | 0.7                                |
| #33.0                                                     | D            | T491D336(1)025A(2)   | 8.3                               | 6.0                              | 0.7                                |
| #33.0                                                     | C            | T491C336(1)025A(2)   | 8.3                               | 10.0                             | 1.2                                |
| #47.0                                                     | X            | T491X476(1)025A(2)   | 11.8                              | 6.0                              | 0.7                                |
| †47.0                                                     | D            | T491D476(1)025A(2)   | 11.8                              | 10.0                             | 0.7                                |
| †68.0                                                     | X            | T491X686M025A(2)     | 17.0                              | 8.0                              | 0.7                                |
| †68.0                                                     | D            | T491D686M025A(2)     | 17.0                              | 10.0                             | 0.7                                |
| 100.0                                                     | X            | T491X107(1)025A(2)   | 25.0                              | 8.0                              | 0.3                                |

(1) To complete KEMET Part Number, insert M for ±20% tolerance or K for ±10% tolerance.

(2) To complete KEMET Part Number, insert T, H, G lead material designation as shown on page 15.

\*Extended Values

\*\*6 Volt product equivalent to 6.3 volt product.

#Maximum Capacitance Change @ 125°C=±15%.

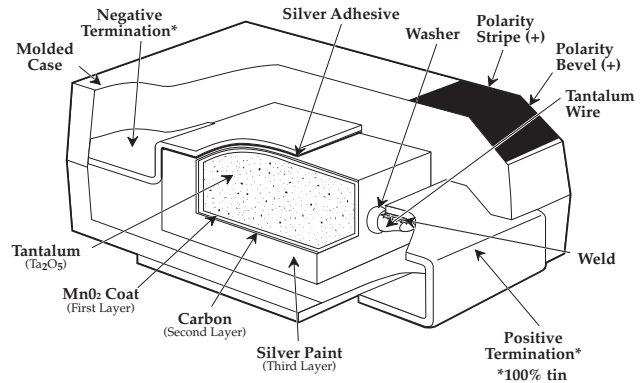
†Maximum Capacitance Change @ 125°C=±20%.

Higher voltage ratings and tighter tolerance product may be substituted within the same size at KEMET's option. Voltage substitutions will be marked with the higher voltage rating.

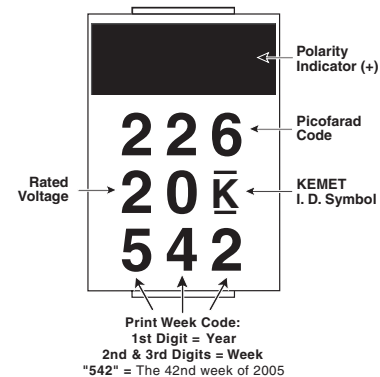
## T491 RATINGS &amp; PART NUMBER REFERENCE

| Capacitance<br>μF                                         | Case<br>Size | KEMET<br>Part Number | DC<br>Leakage<br>μA @ 25°C<br>Max | DF %<br>@ +25°C<br>120 Hz<br>Max | ESR Ω<br>@ +25°C<br>100 kHz<br>Max |
|-----------------------------------------------------------|--------------|----------------------|-----------------------------------|----------------------------------|------------------------------------|
| <b>35 Volt Rating at +85°C (23 Volt Rating at +125°C)</b> |              |                      |                                   |                                  |                                    |
| 0.10                                                      | A            | T491A104(1)035A(2)   | 0.5                               | 4.0                              | 20.0                               |
| 0.15                                                      | A            | T491A154(1)035A(2)   | 0.5                               | 4.0                              | 19.0                               |
| 0.22                                                      | A            | T491A224(1)035A(2)   | 0.5                               | 4.0                              | 18.0                               |
| 0.33                                                      | A            | T491A334(1)035A(2)   | 0.5                               | 4.0                              | 15.0                               |
| 0.47                                                      | B            | T491B474(1)035A(2)   | 0.5                               | 4.0                              | 8.0                                |
| 0.47                                                      | A            | T491A474(1)035A(2)   | 0.5                               | 4.0                              | 12.0                               |
| 0.68                                                      | B            | T491B684(1)035A(2)   | 0.5                               | 4.0                              | 6.5                                |
| 0.68                                                      | A            | T491A684(1)035A(2)   | 0.5                               | 4.0                              | 8.0                                |
| 1.0                                                       | B            | T491B105(1)035A(2)   | 0.5                               | 4.0                              | 5.0                                |
| 1.0                                                       | A            | T491A105(1)035A(2)   | 0.5                               | 4.0                              | 7.5                                |
| 1.5                                                       | C            | T491C155(1)035A(2)   | 0.5                               | 6.0                              | 4.5                                |
| 1.5                                                       | B            | T491B155(1)035A(2)   | 0.5                               | 6.0                              | 5.0                                |
| 2.2                                                       | C            | T491C225(1)035A(2)   | 0.8                               | 6.0                              | 3.5                                |
| 2.2                                                       | B            | T491B225(1)035A(2)   | 0.8                               | 6.0                              | 4.0                                |
| 3.3                                                       | C            | T491C335(1)035A(2)   | 1.2                               | 6.0                              | 2.5                                |
| #3.3                                                      | B            | T491B335(1)035A(2)   | 1.2                               | 6.0                              | 3.5                                |
| 4.7                                                       | D            | T491D475(1)035A(2)   | 1.7                               | 6.0                              | 1.5                                |
| 4.7                                                       | C            | T491C475(1)035A(2)   | 1.7                               | 6.0                              | 2.2                                |
| 6.8                                                       | D            | T491D685(1)035A(2)   | 2.4                               | 6.0                              | 1.3                                |
| 6.8                                                       | C            | T491C685(1)035A(2)   | 2.4                               | 6.0                              | 1.8                                |
| 10.0                                                      | D            | T491D106(1)035A(2)   | 3.5                               | 6.0                              | 1.0                                |
| #10.0                                                     | C            | T491C106M035A(2)     | 3.5                               | 6.0                              | 1.6                                |
| #10.0                                                     | V            | T491V106(1)035A(2)   | 3.5                               | 6.0                              | 2.0                                |
| 15.0                                                      | X            | T491X156(1)035A(2)   | 5.3                               | 6.0                              | 0.9                                |
| 15.0                                                      | D            | T491D156(1)035A(2)   | 5.3                               | 6.0                              | 0.8                                |
| 22.0                                                      | X            | T491X226(1)035A(2)   | 7.7                               | 6.0                              | 0.7                                |
| #22.0                                                     | D            | T491D226(1)035A(2)   | 7.7                               | 6.0                              | 0.7                                |
| #33.0                                                     | X            | T491X336(1)035A(2)   | 11.6                              | 6.0                              | 0.6                                |
| †47.0                                                     | X            | T491X476(1)035A(2)   | 16.5                              | 8.0                              | 0.6                                |
| #47.0                                                     | E            | T491E476(1)035A(2)   | 16.5                              | 10.0                             | 0.5                                |
| <b>50 Volt Rating at +85°C (33 Volt Rating at +125°C)</b> |              |                      |                                   |                                  |                                    |
| 0.10                                                      | A            | T491A104(1)050A(2)   | 0.5                               | 4.0                              | 20.0                               |
| 0.15                                                      | B            | T491B154(1)050A(2)   | 0.5                               | 4.0                              | 16.0                               |
| 0.15                                                      | A            | T491A154(1)050A(2)   | 0.5                               | 4.0                              | 15.0                               |
| 0.22                                                      | B            | T491B224(1)050A(2)   | 0.5                               | 4.0                              | 14.0                               |
| 0.33                                                      | B            | T491B334(1)050A(2)   | 0.5                               | 4.0                              | 10.0                               |
| 0.47                                                      | C            | T491C474(1)050A(2)   | 0.5                               | 4.0                              | 8.0                                |
| 0.47                                                      | B            | T491B474(1)050A(2)   | 0.5                               | 4.0                              | 9.0                                |
| 0.68                                                      | C            | T491C684(1)050A(2)   | 0.5                               | 4.0                              | 7.0                                |
| 0.68                                                      | B            | T491B684(1)050A(2)   | 0.5                               | 4.0                              | 8.0                                |
| 1.0                                                       | C            | T491C105(1)050A(2)   | 0.5                               | 4.0                              | 5.5                                |
| 1.0                                                       | B            | T491B105(1)050A(2)   | 0.5                               | 6.0                              | 6.0                                |
| 1.0                                                       | V            | T491V105(1)050A(2)   | 0.5                               | 4.0                              | 6.0                                |
| 1.5                                                       | D            | T491D155(1)050A(2)   | 0.8                               | 6.0                              | 3.5                                |
| 1.5                                                       | C            | T491C155(1)050A(2)   | 0.8                               | 6.0                              | 4.5                                |
| 2.2                                                       | D            | T491D225(1)050A(2)   | 1.1                               | 6.0                              | 2.5                                |
| 2.2                                                       | C            | T491C225(1)050A(2)   | 1.1                               | 6.0                              | 3.0                                |
| 3.3                                                       | D            | T491D335(1)050A(2)   | 1.7                               | 6.0                              | 2.0                                |
| 4.7                                                       | D            | T491D475(1)050A(2)   | 2.4                               | 6.0                              | 1.4                                |
| 6.8                                                       | X            | T491X685(1)050A(2)   | 3.5                               | 6.0                              | 1.0                                |
| #6.8                                                      | D            | T491D685(1)050A(2)   | 3.4                               | 6.0                              | 1.0                                |
| #10.0                                                     | X            | T491X106M050A(2)     | 5.0                               | 6.0                              | 0.7                                |
| #10.0                                                     | D            | T491D106(1)050A(2)   | 5.0                               | 6.0                              | 0.8                                |
| 15.0                                                      | X            | T491X156(1)050A(2)   | 7.5                               | 8.0                              | 0.7                                |
| 22.0                                                      | X            | T491X226(1)050A(2)   | 11.0                              | 10.0                             | 0.6                                |

## CONSTRUCTION



## CAPACITOR MARKINGS



- (1) To complete KEMET Part Number, insert M for ±20% tolerance or K for ±10% tolerance.  
 (2) To complete KEMET Part Number, insert T, H, G lead material designation as shown on page 15.  
 \*Extended Values

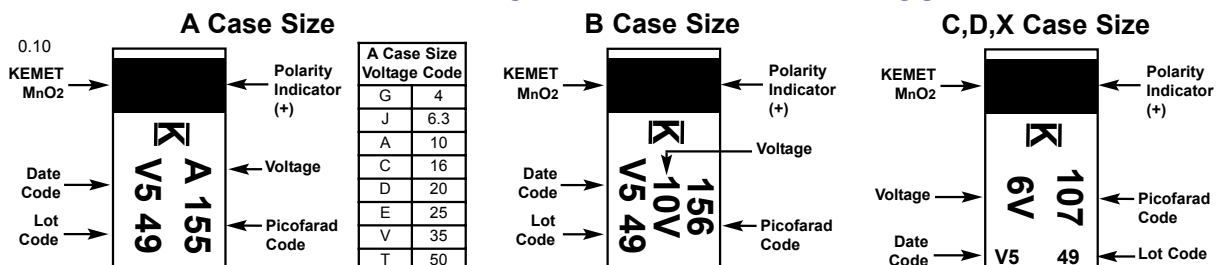
\*\*6 Volt product equivalent to 6.3 volt product.

#Maximum Capacitance Change @ 125°C=+15%.

†Maximum Capacitance Change @ 125°C=+20%.

Higher voltage ratings and tighter tolerance product may be substituted within the same size at KEMET's option.  
 Voltage substitutions will be marked with the higher voltage rating.

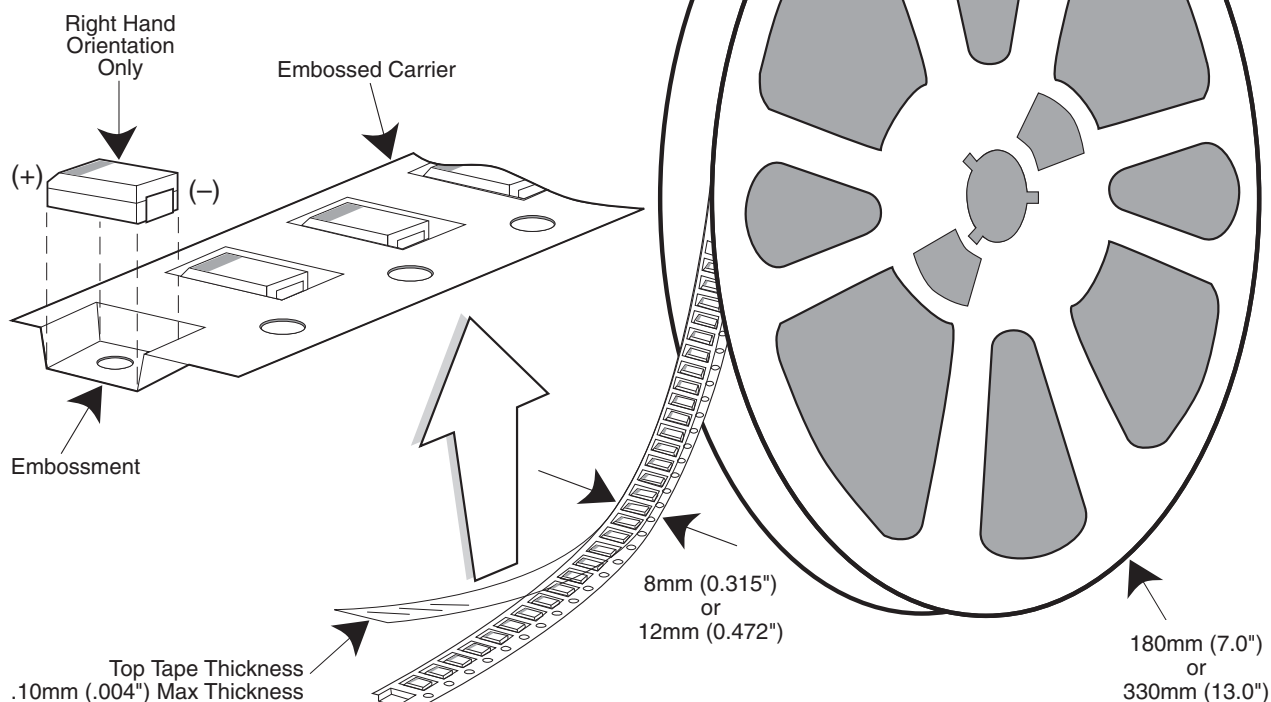
## CAPACITOR ALTERNATE MARKINGS



| Date Code - Year |          | Date Code - Month |           |               |               |
|------------------|----------|-------------------|-----------|---------------|---------------|
| S = 2004         | V = 2007 | 1 = January       | 4 = April | 7 = July      | 10 = October  |
| T = 2005         | W = 2008 | 2 = February      | 5 = May   | 8 = August    | 11 = November |
| U = 2006         | X = 2009 | 3 = March         | 6 = June  | 9 = September | 12 = December |

## Tape & Reel Packaging

KEMET's Molded Tantalum and Aluminum Chip Capacitor families are packaged in 8 mm and 12 mm plastic tape on 7" and 13" reels, in accordance with EIA Standard 481-1: Taping of Surface Mount Components for Automatic Handling. This packaging system is compatible with all tape fed automatic pick and place systems.



**Labeling:** Bar code labeling (standard or custom) shall be on the side of the reel opposite the sprocket holes. Refer to EIA-556.

### QUANTITIES PACKAGED PER REEL

| Case Code |         | Tape Width-mm | 7" Reel* | 13" Reel |
|-----------|---------|---------------|----------|----------|
| KEMET     | EIA     |               |          |          |
| R         | 2012-12 | 8             | 2,500    | 10,000   |
| I         | 3216-10 | 8             | 3,000    | 12,000   |
| S         | 3216-12 | 8             | 2,500    | 10,000   |
| T         | 3528-12 | 8             | 2,500    | 10,000   |
| M         | 3528-15 | 8             | 2,000    | 8,000    |
| U         | 6032-15 | 12            | 1,000    | 5,000    |
| L         | 6032-19 | 12            | 1,000    | 5,000    |
| W         | 7343-15 | 12            | 1,000    | 3,000    |
| Z         | 7343-17 | 12            | 1,000    | 3,000    |
| V         | 7343-20 | 12            | 1,000    | 3,000    |
| A         | 3216-18 | 8             | 2,000    | 9,000    |
| B         | 3528-21 | 8             | 2,000    | 8,000    |
| C         | 6032-28 | 12            | 500      | 3,000    |
| D         | 7343-31 | 12            | 500      | 2,500    |
| Y         | 7343-40 | 12            | 500      | 2,000    |
| X         | 7343-43 | 12            | 500      | 2,000    |
| E         | 7260-38 | 12            | 500      | 2,000    |

\* No c-spec required for 7" reel packaging. C-7280 required for 13" reel packaging.

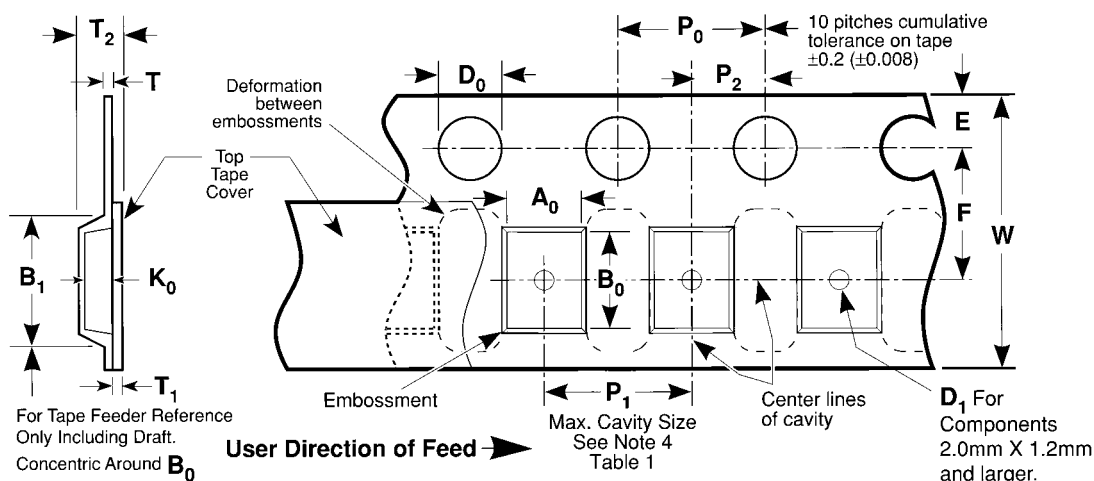
- Cover Tape Break Force:** 1.0 Kg Minimum.
- Cover Tape Peel Strength:** The total peel strength of the cover tape from the carrier tape shall be:

| Tape Width | Peel Strength                          |
|------------|----------------------------------------|
| 8 mm       | 0.1 Newton to 1.0 Newton (10g to 100g) |
| 12 mm      | 0.1 Newton to 1.3 Newton (10g to 130g) |

The direction of the pull shall be opposite the direction of the carrier tape travel. The pull angle of the carrier tape shall be 165° to 180° from the plane of the carrier tape. During peeling, the carrier and/or cover tape shall be pulled at a velocity of 300 ±10 mm/minute.

- Reel Sizes:** Molded tantalum capacitors are available on either 180 mm (7") reels (standard) or 330 mm (13") reels (with C-7280). Note that 13" reels are preferred.
- Labeling:** Bar code labeling (standard or custom) shall be on the side of the reel opposite the sprocket holes. Refer to EIA-556.

### Embossed Carrier Tape Configuration: Figure 1



**Table 1 — EMBOSSED TAPE DIMENSIONS** (Metric will govern)

| Constant Dimensions — Millimeters (Inches) |                                              |                               |                               |                             |                             |                    |                    |                              |                                                        |
|--------------------------------------------|----------------------------------------------|-------------------------------|-------------------------------|-----------------------------|-----------------------------|--------------------|--------------------|------------------------------|--------------------------------------------------------|
| Tape Size                                  | D <sub>0</sub>                               | E                             | P <sub>0</sub>                | P <sub>2</sub>              | T Max                       | T <sub>1</sub> Max |                    |                              |                                                        |
| 8 mm<br>and<br>12 mm                       | 1.5<br>+0.10 -0.0<br>(0.059<br>+0.004, -0.0) | 1.75 ±0.10<br>(0.069 ±0.004)  | 4.0 ±0.10<br>(0.157 ±0.004)   | 2.0 ±0.05<br>(0.079 ±0.002) | 0.600<br>(0.024)            | 0.100<br>(0.004)   |                    |                              |                                                        |
| Variable Dimensions — Millimeters (Inches) |                                              |                               |                               |                             |                             |                    |                    |                              |                                                        |
| Tape Size                                  | Pitch                                        | B <sub>1</sub> Max.<br>Note 1 | D <sub>1</sub> Min.<br>Note 2 | F                           | P <sub>1</sub>              | R Min.<br>Note 3   | T <sub>2</sub> Max | W                            | A <sub>0</sub> B <sub>0</sub> K <sub>0</sub><br>Note 4 |
| 8 mm                                       | Single<br>(4 mm)                             | 4.4<br>(0.173)                | 1.0<br>(0.039)                | 3.5 ±0.05<br>(0.138 ±0.002) | 4.0 ±0.10<br>(0.157 ±0.004) | 25.0<br>(0.984)    | 2.5<br>(0.098)     | 8.0 ±0.30<br>(.315 ±0.012)   |                                                        |
| 12 mm                                      | Double<br>(8 mm)                             | 8.2<br>(0.323)                | 1.5<br>(0.059)                | 5.5 ±0.05<br>(0.217 ±0.002) | 8.0 ±0.10<br>(0.315 ±0.004) | 30.0<br>(1.181)    | 4.6<br>(0.181)     | 12.0 ±0.30<br>(0.472 ±0.012) |                                                        |

### NOTES

- B<sub>1</sub> dimension is a reference dimension for tape feeder clearance only.
- The embossment hole location shall be measured from the sprocket hole controlling the location of the embossment. Dimensions of embossment location and hole location shall be applied independent of each other.
- Tape with components shall pass around radius "R" without damage (see sketch A). The minimum trailer length (Fig. 2) may require additional length to provide R min. for 12 mm embossed tape for reels with hub diameters approaching N min. (Table 2)
- The cavity defined by A<sub>0</sub>, B<sub>0</sub>, and K<sub>0</sub> shall be configured to surround the part with sufficient clearance such that the chip does not protrude beyond the sealing plane of the cover tape, the chip can be removed from the cavity in a vertical direction without mechanical restriction, rotation of the chip is limited to 20 degrees maximum in all 3 planes, and lateral movement of the chip is restricted to 0.5 mm maximum in the pocket (not applicable to vertical clearance.)

### Embossed Carrier Tape Configuration (cont.)



### Sketch D: Tape Camber (Top View)

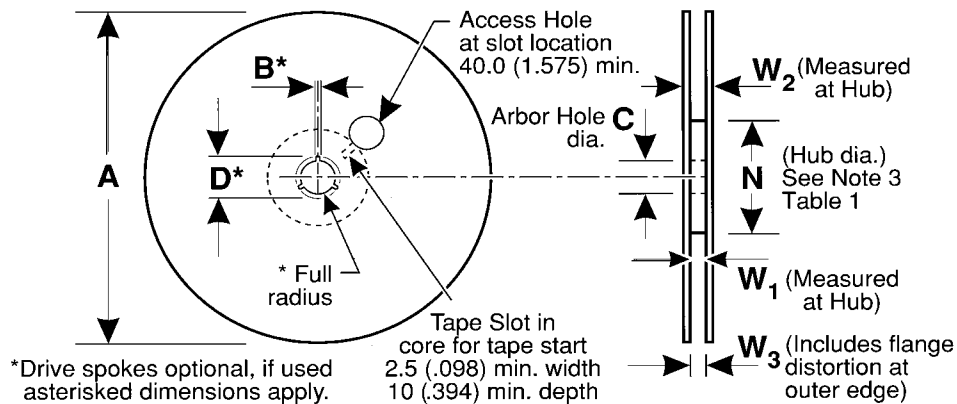
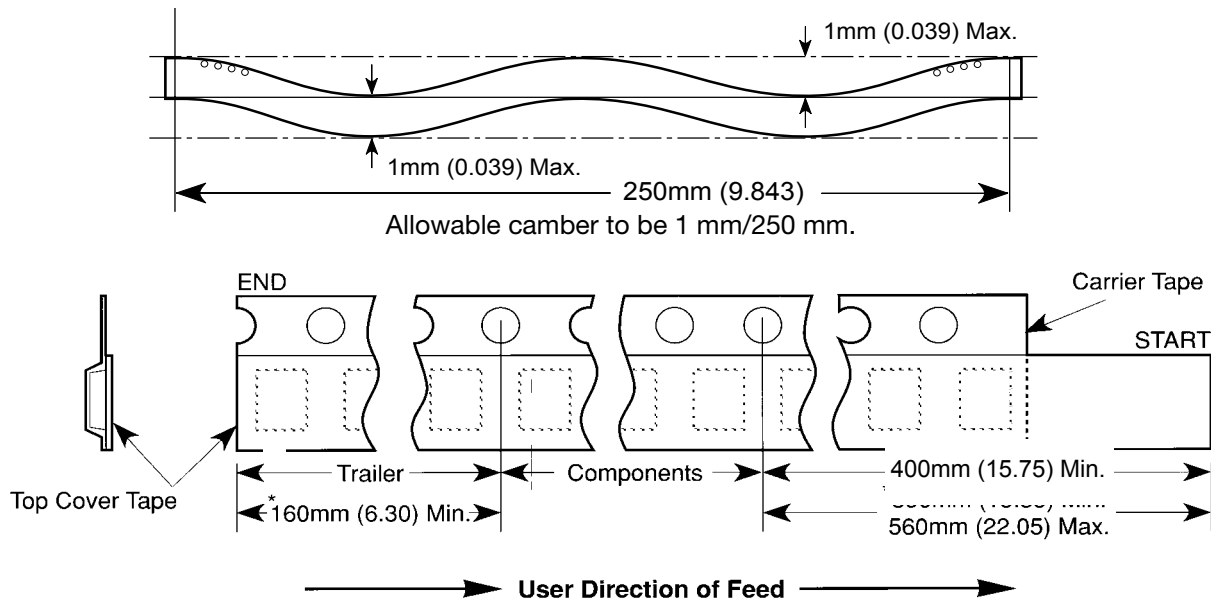


Figure 3: Reel Dimensions (Metric Dimensions will govern)

Table 2 – REEL DIMENSIONS (Metric will govern)

| Tape Size | A Max             | B* Min         | C                              | D* Min          | N Min                                       | W <sub>1</sub>                                | W <sub>2</sub> Max | W <sub>3</sub>                             |
|-----------|-------------------|----------------|--------------------------------|-----------------|---------------------------------------------|-----------------------------------------------|--------------------|--------------------------------------------|
| 8 mm      | 330.0<br>(12.992) | 1.5<br>(0.059) | 13.0 ± 0.20<br>(0.512 ± 0.008) | 20.2<br>(0.795) | 50.0<br>(1.969)<br>See<br>Note 3<br>Table 1 | 8.4<br>+1.5, -0.0<br>(0.331<br>+0.059, -0.0)  | 14.4<br>(0.567)    | 7.9 Min<br>(0.311)<br>10.9 Max<br>(0.429)  |
| 12 mm     | 330.0<br>(12.992) | 1.5<br>(0.059) | 13.0 ± 0.20<br>(0.512 ± 0.008) | 20.2<br>(0.795) |                                             | 12.4<br>+2.0, -0.0<br>(0.488<br>+0.078, -0.0) | 18.4<br>(0.724)    | 11.9 Min<br>(0.469)<br>15.4 Max<br>(0.606) |