

# TPS Series



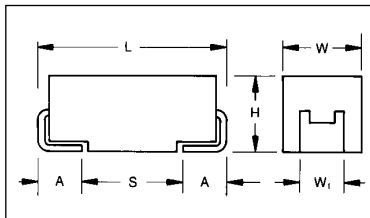
## Low ESR



The TPS surface mount products have inherently low ESR (equivalent series resistance) and are capable of higher ripple current handling, producing lower ripple voltages, less power and heat dissipation than standard product for the most efficient use of circuit power. TPS has been designed, manufactured, and

preconditioned for optimum performance in typical power supply applications. By combining the latest improvements in tantalum powder technology, improved manufacturing processes, and application specific preconditioning tests, AVX is able to provide a technologically superior alternative to the standard range.

### CASE DIMENSIONS: millimeters (inches)



For part marking see pages 12 & 48

| Code | EIA Code | L±0.2 (0.008) | W+0.2 (0.008)<br>-0.1 (0.004) | H+0.2 (0.008)<br>-0.1 (0.004) | W <sub>1</sub> ±0.2 (0.008) | A+0.3 (0.012)<br>-0.2 (0.008) | S Min.      |
|------|----------|---------------|-------------------------------|-------------------------------|-----------------------------|-------------------------------|-------------|
| A    | 3216     | 3.2 (0.126)   | 1.6 (0.063)                   | 1.6 (0.063)                   | 1.2 (0.047)                 | 0.8 (0.031)                   | 1.1 (0.043) |
| B    | 3528     | 3.5 (0.138)   | 2.8 (0.110)                   | 1.9 (0.075)                   | 2.2 (0.087)                 | 0.8 (0.031)                   | 1.4 (0.055) |
| C    | 6032     | 6.0 (0.236)   | 3.2 (0.126)                   | 2.6 (0.102)                   | 2.2 (0.087)                 | 1.3 (0.051)                   | 2.9 (0.114) |
| D    | 7343     | 7.3 (0.287)   | 4.3 (0.169)                   | 2.9 (0.114)                   | 2.4 (0.094)                 | 1.3 (0.051)                   | 4.4 (0.173) |
| E    | 7343H    | 7.3 (0.287)   | 4.3 (0.169)                   | 4.1 (0.162)                   | 2.4 (0.094)                 | 1.3 (0.051)                   | 4.4 (0.173) |
| V    | 7361     | 7.3 (0.287)   | 6.1 (0.240)                   | 3.45 ±0.3<br>(0.136±0.012)    | 3.1 (0.120)                 | 1.4 (0.055)                   | 4.4 (0.173) |
| W*   | 6032L    | 6.0 (0.236)   | 3.2 (0.126)                   | 1.5 (0.059) max.              | 2.2 (0.087)                 | 1.3 (0.051)                   | 2.9 (0.114) |
| Y**  | 7343L    | 7.3 (0.287)   | 4.3 (0.169)                   | 2.0 (0.079) max.              | 2.4 (0.094)                 | 1.3 (0.051)                   | 4.4 (0.173) |

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

\* Low Profile Version of C Case (max. height 1.5mm)  
 \*\* Low Profile Version of D Case (max. height 2mm)

### HOW TO ORDER

**TPS**

Type

**C**

Case Size  
See table above

**107**

Capacitor Code  
pF code: 1st two digits represent significant figures, 3rd digit represents multiplier (number of zeros to follow)

**M**

Tolerance  
K=±10%  
M=±20%

**010**

Rated DC Voltage  
006=6.3Vdc  
010=10Vdc  
016=16Vdc  
020=20Vdc  
025=25Vdc  
035=35Vdc  
050=50Vdc

**R**

Packaging  
See Tape and Reel  
Packaging  
R=7" T/R  
S=13" T/R  
(see page 47)

**100**

Maximum ESR in Milliohms  
See note below

**NOTE:** The EIA & CECC standards for low ESR Solid Tantalum Capacitors allow an ESR movement to 1.25 times catalog limit post mounting.

### TECHNICAL SPECIFICATIONS

Technical Data:

All technical data relate to an ambient temperature of +25°C

Capacitance Range: 1.0µF to 470µF

Capacitance Tolerance: ±10%; ±20%

| Rated Voltage (V <sub>R</sub> )    | ≤ +85°C:  | 6.3 | 10 | 16 | 20 | 25 | 35 | 50 |
|------------------------------------|-----------|-----|----|----|----|----|----|----|
| Category Voltage (V <sub>C</sub> ) | ≤ +125°C: | 4   | 7  | 10 | 13 | 17 | 23 | 33 |
| Surge Voltage (V <sub>S</sub> )    | ≤ +85°C:  | 8   | 13 | 20 | 26 | 32 | 46 | 65 |
| Surge Voltage (V <sub>S</sub> )    | ≤ +125°C: | 5   | 8  | 12 | 16 | 20 | 28 | 40 |

Temperature Range: -55°C to +125°C

Environmental Classification: 55/125/56 (IEC 68-2)

Reliability: 1% per 1000 hours at 85°C with 0.1Ω/V series impedance, 60% confidence level



### CAPACITANCE AND RATED VOLTAGE, $V_R$ (VOLTAGE CODE) RANGE (LETTER DENOTES CASE SIZE)

| Capacitance |      | Rated voltage ( $V_R$ ) to 85°C |                                      |                                       |                                |                          |                         |                      |            |
|-------------|------|---------------------------------|--------------------------------------|---------------------------------------|--------------------------------|--------------------------|-------------------------|----------------------|------------|
| $\mu F$     | Code | 4V<br>(G)                       | 6.3V<br>(J)                          | 10V<br>(A)                            | 16V<br>(C)                     | 20V<br>(D)               | 25V<br>(E)              | 35V<br>(V)           | 50V<br>(T) |
| 1           | 105  |                                 |                                      |                                       |                                |                          |                         | A(3000)<br>B(2000)   |            |
| 1.5         | 155  |                                 |                                      |                                       |                                |                          | A(3000)                 | B(2500)              |            |
| 2.2         | 225  |                                 |                                      | A(1800)                               | A(3500)                        | A(3000)                  | B(2500)                 | B(2000)              |            |
| 3.3         | 335  |                                 |                                      |                                       | A(3500)                        | A(2500)                  | B(2000)                 | C(700)               |            |
| 4.7         | 475  |                                 |                                      | A(1400)                               | A(2000)                        | A(1800)                  | B(1500)                 | C(600)               | D(700)     |
| 6.8         | 685  |                                 | A(1800)                              | A(1800)                               | B(1200)                        | C(700)                   | C(600/700)              | D(500)               | D(600)     |
| 10          | 106  |                                 | A(1500)                              | A(1800)                               | B(800)<br>W(600)               | B(1000)<br>C(700)        | C(500)                  | D(300)<br>E(200)     |            |
| 15          | 156  |                                 | A(1500)                              | A(1000)                               | B(800)                         | C(450)                   | D(300)                  | C(450)<br>D(300)     |            |
| 22          | 226  |                                 | A(900)<br>B(600)                     | B(500/700)                            | B(600)<br>C(375)               | C(400)<br>D(300)         | D(200)                  | D(400)<br>E(200/300) |            |
| 33          | 336  |                                 | A(600)<br>B(600)                     | W(350)<br>B(500/650)<br>C(375/500)    | C(300)<br>W(400/500)           | D(200)                   | D(300)<br>E(175/300)    | D(300)               |            |
| 47          | 476  |                                 | B(500)<br>C(300)                     | B(500/650)<br>C(350)                  | C(350)<br>D(150/200)           | D(200)<br>E(150/250)     | D(150/250)              | E(200/250)           |            |
| 68          | 686  |                                 | B(500)<br>C(150/200)<br>W(250)       | D(100/150)<br>Y(150/200)              | C(200)<br>D(150)<br>Y(200/250) | D(200/300)<br>E(125/150) | E(125/200)<br>V(95/150) |                      |            |
| 100         | 107  |                                 | C(150)                               | C(100/200)<br>D(65/100)<br>Y(150/200) | D(100/200)<br>E(100/150)       | E(150/200)<br>V(85/200)  |                         |                      |            |
| 150         | 157  |                                 | C(150/250)<br>D(125)                 | D(100/150)<br>Y(150/200)              | D(125/150)                     |                          |                         |                      |            |
| 220         | 227  |                                 | C(125/250)<br>D(100)<br>E(100)       | D(100/150)<br>E(60/100)               | E(100/150)<br>V(75/150)        |                          |                         |                      |            |
| 330         | 337  |                                 | D(100)<br>E(100/150)                 | D(100/150)<br>E(60/100)<br>V(60/100)  |                                |                          |                         |                      |            |
| 470         | 477  |                                 | D(100/200)<br>E(50/100)<br>V(55/100) | E(50/100)<br>V(60/100)                |                                |                          |                         |                      |            |
| 680         | 687  | E(100)                          |                                      |                                       |                                |                          |                         |                      |            |

For TPS series and the case sizes C, D and E the ESR limits are printed on capacitor side in the following format:

T x x x -where x x x is ESR limit in milliohms i.e. T100 represents max. ESR of 100 milliohms.

ESR limits quoted in brackets are in milliohms

**NOTE: The EIA & CECC standards for low ESR Solid Tantalum Capacitors allow an ESR movement to 1.25 times catalog limit post mounting.**

### RATINGS & PART NUMBER REFERENCE

| AVX<br>Part No.                                   | Case<br>Size | Capacitance<br>μF | Rated<br>Voltage<br>(Voltage Code) | DCL<br>(μA)<br>Max. | DF<br>%<br>Max. | ESR<br>Max. (mΩ)<br>@100kHz | 100kHz Ripple Current (mA) Ratings |       |       |
|---------------------------------------------------|--------------|-------------------|------------------------------------|---------------------|-----------------|-----------------------------|------------------------------------|-------|-------|
|                                                   |              |                   |                                    |                     |                 |                             | 25°C                               | 85°C  | 125°C |
| Voltage/Code4 volt @ 85°C (2.5 volt @ 125°C) / G  |              |                   |                                    |                     |                 |                             |                                    |       |       |
| TPSE687*004#0100                                  | E            | 680               | 4                                  | 27.2                | 14              | 100                         | 1.284                              | 1.156 | 0.513 |
| Voltage/Code6.3 volt @ 85°C (4 volt @ 125°C) / J  |              |                   |                                    |                     |                 |                             |                                    |       |       |
| TPSA685*006#1800                                  | A            | 6.8               | 6.3                                | 0.5                 | 6               | 1800                        | 0.204                              | 0.184 | 0.082 |
| TPSA106*006#1500                                  | A            | 10                | 6.3                                | 0.6                 | 6               | 1500                        | 0.224                              | 0.200 | 0.089 |
| TPSA156*006#1500                                  | A            | 15                | 6.3                                | 0.9                 | 6               | 1500                        | 0.224                              | 0.200 | 0.089 |
| TPSA226*006#0900                                  | A            | 22                | 6.3                                | 1.4                 | 6               | 900                         | 0.289                              | 0.260 | 0.115 |
| TPSB226*006#0600                                  | B            | 22                | 6.3                                | 1.4                 | 6               | 600                         | 0.376                              | 0.339 | 0.151 |
| TPSA336*006R0600                                  | A            | 33                | 6.3                                | 2.1                 | 6               | 600                         | 0.353                              | 0.318 | 0.141 |
| TPSB336*006#0600                                  | B            | 33                | 6.3                                | 2.1                 | 6               | 600                         | 0.376                              | 0.337 | 0.151 |
| TPSW336*006#0400                                  | W            | 33                | 6.3                                | 2.1                 | 6               | 400                         | 0.474                              | 0.427 | 0.190 |
| TPSB476*006#0500                                  | B            | 47                | 6.3                                | 3.0                 | 6               | 500                         | 0.412                              | 0.371 | 0.165 |
| TPSC476*006#0300                                  | C            | 47                | 6.3                                | 3.0                 | 6               | 300                         | 0.606                              | 0.545 | 0.242 |
| TPSB686*006#0500                                  | B            | 68                | 6.3                                | 4.3                 | 6               | 500                         | 0.412                              | 0.371 | 0.165 |
| TPSC686*006#0200                                  | C            | 68                | 6.3                                | 4.3                 | 6               | 200                         | 0.742                              | 0.667 | 0.297 |
| TPSC686*006#0150                                  | C            | 68                | 6.3                                | 4.3                 | 6               | 150                         | 0.856                              | 0.766 | 0.343 |
| TPSW686*006#0250                                  | W            | 68                | 6.3                                | 4.3                 | 6               | 250                         | 0.600                              | 0.540 | 0.240 |
| TPSC107*006#0150                                  | C            | 100               | 6.3                                | 6.3                 | 6               | 150                         | 0.856                              | 0.766 | 0.343 |
| TPSC157*006#0250                                  | C            | 150               | 6.3                                | 9.5                 | 6               | 250                         | 0.663                              | 0.597 | 0.265 |
| TPSC157*006#0150                                  | C            | 150               | 6.3                                | 9.5                 | 6               | 150                         | 0.856                              | 0.771 | 0.343 |
| TPSD157*006#0125                                  | D            | 150               | 6.3                                | 9.5                 | 6               | 125                         | 1.095                              | 0.980 | 0.438 |
| TPSC227*006#0250                                  | C            | 220               | 6.3                                | 13.9                | 10              | 250                         | 0.663                              | 0.597 | 0.265 |
| TPSC227*006#0125                                  | C            | 220               | 6.3                                | 13.9                | 10              | 125                         | 0.938                              | 0.844 | 0.375 |
| TPSD227*006#0100                                  | D            | 220               | 6.3                                | 13.9                | 8               | 100                         | 1.125                              | 1.102 | 0.490 |
| TPSE227*006#0100                                  | E            | 220               | 6.3                                | 13.9                | 8               | 100                         | 1.285                              | 1.156 | 0.514 |
| TPSD337M006#0100                                  | D            | 330               | 6.3                                | 20.8                | 8               | 100                         | 1.125                              | 1.102 | 0.490 |
| TPSE337*006#0150                                  | E            | 330               | 6.3                                | 20.8                | 8               | 150                         | 1.049                              | 0.938 | 0.420 |
| TPSE337*006#0100                                  | E            | 330               | 6.3                                | 20.8                | 8               | 100                         | 1.285                              | 1.149 | 0.514 |
| TPSD477M006#0200                                  | D            | 470               | 6.3                                | 29.6                | 12              | 200                         | 0.866                              | 0.779 | 0.346 |
| TPSD477M006#0100                                  | D            | 470               | 6.3                                | 29.6                | 12              | 100                         | 1.225                              | 1.102 | 0.490 |
| TPSE477M006#0100                                  | E            | 470               | 6.3                                | 29.6                | 10              | 100                         | 1.285                              | 1.156 | 0.514 |
| TPSE477M006#0050                                  | E            | 470               | 6.3                                | 29.6                | 10              | 50                          | 1.817                              | 1.635 | 0.727 |
| TPSV477*006#0100                                  | V            | 470               | 6.3                                | 29.6                | 10              | 100                         | 1.581                              | 1.414 | 0.632 |
| TPSV477*006#0055                                  | V            | 470               | 6.3                                | 29.6                | 10              | 55                          | 2.132                              | 1.907 | 0.853 |
| Voltage/Code10 volt @ 85°C (6.3 volt @ 125°C) / A |              |                   |                                    |                     |                 |                             |                                    |       |       |
| TPSA225*010#1800                                  | A            | 2.2               | 10                                 | 0.5                 | 6               | 1800                        | 0.204                              | 0.184 | 0.082 |
| TPSA475*010#1400                                  | A            | 4.7               | 10                                 | 0.5                 | 6               | 1400                        | 0.231                              | 0.208 | 0.093 |
| TPSA685*010#1800                                  | A            | 6.8               | 10                                 | 0.7                 | 6               | 1800                        | 0.204                              | 0.184 | 0.082 |
| TPSA106*010#1800                                  | A            | 10                | 10                                 | 1.0                 | 6               | 1800                        | 0.204                              | 0.183 | 0.082 |
| TPSA156*010#1000                                  | A            | 15                | 10                                 | 1.5                 | 6               | 1000                        | 0.274                              | 0.246 | 0.110 |
| TPSB226*010#0700                                  | B            | 22                | 10                                 | 2.2                 | 6               | 700                         | 0.348                              | 0.312 | 0.139 |
| TPSB226*010#0500                                  | B            | 22                | 10                                 | 2.2                 | 6               | 500                         | 0.412                              | 0.371 | 0.165 |
| TPSB336*010#0650                                  | B            | 33                | 10                                 | 3.3                 | 6               | 650                         | 0.362                              | 0.325 | 0.145 |
| TPSB336*010#0500                                  | B            | 33                | 10                                 | 3.3                 | 6               | 500                         | 0.412                              | 0.371 | 0.165 |
| TPSC336*010#0500                                  | C            | 33                | 10                                 | 3.3                 | 6               | 500                         | 0.469                              | 0.420 | 0.188 |
| TPSC336*010#0375                                  | C            | 33                | 10                                 | 3.3                 | 6               | 375                         | 0.542                              | 0.484 | 0.217 |
| TPSW336*010#0350                                  | W            | 33                | 10                                 | 3.3                 | 6               | 350                         | 0.507                              | 0.456 | 0.203 |
| TPSB476*010#0650                                  | B            | 47                | 10                                 | 4.7                 | 8               | 650                         | 0.362                              | 0.325 | 0.145 |
| TPSB476*010#0500                                  | B            | 47                | 10                                 | 4.7                 | 8               | 500                         | 0.412                              | 0.371 | 0.165 |
| TPSC476*010#0350                                  | C            | 47                | 10                                 | 4.7                 | 6               | 350                         | 0.561                              | 0.501 | 0.224 |
| TPSD686*010#0150                                  | D            | 68                | 10                                 | 6.8                 | 6               | 150                         | 1.000                              | 0.900 | 0.400 |
| TPSD686*010#0100                                  | D            | 68                | 10                                 | 6.8                 | 6               | 100                         | 1.225                              | 1.102 | 0.490 |
| TPSY686*010#0200                                  | Y            | 68                | 10                                 | 6.8                 | 6               | 200                         | 0.791                              | 0.712 | 0.316 |
| TPSY686*010#0150                                  | Y            | 68                | 10                                 | 6.8                 | 6               | 150                         | 0.913                              | 0.821 | 0.365 |
| TPSC107*010#0200                                  | C            | 100               | 10                                 | 10.0                | 8               | 200                         | 0.742                              | 0.667 | 0.297 |
| TPSC107*010#0150                                  | C            | 100               | 10                                 | 10.0                | 6               | 150                         | 0.856                              | 0.771 | 0.343 |
| TPSC107*010#0100                                  | C            | 100               | 10                                 | 10.0                | 6               | 100                         | 1.049                              | 0.944 | 0.420 |
| TPSD107*010#0100                                  | D            | 100               | 10                                 | 10.0                | 6               | 100                         | 1.225                              | 1.095 | 0.490 |
| TPSD107*010#0080                                  | D            | 100               | 10                                 | 10.0                | 6               | 80                          | 1.369                              | 1.225 | 0.548 |
| TPSD107*010#0065                                  | D            | 100               | 10                                 | 10.0                | 6               | 65                          | 1.519                              | 1.367 | 0.607 |

### RATINGS & PART NUMBER REFERENCE

| AVX<br>Part No.                                   | Case<br>Size | Capacitance<br>μF | Rated<br>Voltage<br>(Voltage Code) | DCL<br>(μA)<br>Max. | DF<br>%<br>Max. | ESR<br>Max. (mΩ)<br>@100kHz | 100kHz Ripple Current (mA) Ratings |       |       |
|---------------------------------------------------|--------------|-------------------|------------------------------------|---------------------|-----------------|-----------------------------|------------------------------------|-------|-------|
|                                                   |              |                   |                                    |                     |                 |                             | 25°C                               | 85°C  | 125°C |
| Voltage/Code10 volt @ 85°C (6.3 volt @ 125°C) / A |              |                   |                                    |                     |                 |                             |                                    |       |       |
| TPSY107*010#0200                                  | Y            | 100               | 10                                 | 10.0                | 6               | 200                         | 0.791                              | 0.712 | 0.316 |
| TPSY107*010#0150                                  | Y            | 100               | 10                                 | 10.0                | 6               | 150                         | 0.913                              | 0.822 | 0.365 |
| TPSD157*010#0150                                  | D            | 150               | 10                                 | 15.0                | 6               | 150                         | 1.000                              | 0.900 | 0.400 |
| TPSD157*010#0100                                  | D            | 150               | 10                                 | 15.0                | 6               | 100                         | 1.225                              | 1.095 | 0.490 |
| TPSY157*010#0200                                  | Y            | 150               | 10                                 | 15.0                | 6               | 200                         | 0.791                              | 0.712 | 0.316 |
| TPSY157*010#0150                                  | Y            | 150               | 10                                 | 15.0                | 6               | 150                         | 0.913                              | 0.822 | 0.365 |
| TPSD227M010#0150                                  | D            | 220               | 10                                 | 22.0                | 8               | 150                         | 1.000                              | 0.900 | 0.400 |
| TPSD227M010#0100                                  | D            | 220               | 10                                 | 22.0                | 8               | 100                         | 1.225                              | 1.102 | 0.490 |
| TPSE227*010#0100                                  | E            | 220               | 10                                 | 22.0                | 8               | 100                         | 1.285                              | 1.149 | 0.514 |
| TPSD337M010#0150                                  | D            | 330               | 10                                 | 33.0                | 8               | 150                         | 1.000                              | 0.900 | 0.400 |
| TPSD337M010#0100                                  | D            | 330               | 10                                 | 33.0                | 8               | 100                         | 1.225                              | 1.102 | 0.490 |
| TPSE337*010#0100                                  | E            | 330               | 10                                 | 33.0                | 8               | 100                         | 1.285                              | 1.149 | 0.514 |
| TPSE337*010#0060                                  | E            | 330               | 10                                 | 33.0                | 8               | 60                          | 1.658                              | 1.483 | 0.663 |
| TPSV337*010#0100                                  | V            | 330               | 10                                 | 33.0                | 10              | 100                         | 1.581                              | 1.414 | 0.632 |
| TPSV337*010#0060                                  | V            | 330               | 10                                 | 33.0                | 10              | 60                          | 2.041                              | 1.826 | 0.816 |
| TPSE477M010#0100                                  | E            | 470               | 10                                 | 47.0                | 10              | 100                         | 1.285                              | 1.149 | 0.574 |
| TPSE477M010#0060                                  | E            | 470               | 10                                 | 47.0                | 10              | 60                          | 1.658                              | 1.492 | 0.663 |
| TPSV477*010#0100                                  | V            | 470               | 10                                 | 47.0                | 10              | 100                         | 1.581                              | 1.423 | 0.632 |
| TPSV477*010#0060                                  | V            | 470               | 10                                 | 47.0                | 10              | 60                          | 2.041                              | 1.826 | 0.816 |
| Voltage/Code16 volt @ 85°C (10 volt @ 125°C) / C  |              |                   |                                    |                     |                 |                             |                                    |       |       |
| TPSA225*016#3500                                  | A            | 2.2               | 16                                 | 0.5                 | 6               | 3500                        | 0.146                              | 0.131 | 0.059 |
| TPSA335*016#3500                                  | A            | 3.3               | 16                                 | 0.5                 | 6               | 3500                        | 0.146                              | 0.131 | 0.059 |
| TPSA475*016#2000                                  | A            | 4.7               | 16                                 | 0.8                 | 6               | 2000                        | 0.194                              | 0.174 | 0.077 |
| TPSB685*016#1200                                  | B            | 6.8               | 16                                 | 1.1                 | 6               | 1200                        | 0.266                              | 0.240 | 0.106 |
| TPSB106*016#0800                                  | B            | 10                | 16                                 | 1.6                 | 6               | 800                         | 0.326                              | 0.293 | 0.130 |
| TPSW106*016#0600                                  | W            | 10                | 16                                 | 1.6                 | 6               | 600                         | 0.387                              | 0.349 | 0.155 |
| TPSB156*016#0800                                  | B            | 15                | 16                                 | 2.4                 | 6               | 800                         | 0.326                              | 0.292 | 0.130 |
| TPSB226*016#0600                                  | B            | 22                | 16                                 | 3.5                 | 6               | 600                         | 0.376                              | 0.338 | 0.150 |
| TPSC226*016#0375                                  | C            | 22                | 16                                 | 3.5                 | 6               | 375                         | 0.542                              | 0.484 | 0.217 |
| TPSC336*016#0300                                  | C            | 33                | 16                                 | 5.3                 | 6               | 300                         | 0.606                              | 0.545 | 0.242 |
| TPSW336*016#0500                                  | W            | 33                | 16                                 | 5.3                 | 6               | 500                         | 0.424                              | 0.381 | 0.169 |
| TPSW336*016#0400                                  | W            | 33                | 16                                 | 5.3                 | 6               | 400                         | 0.474                              | 0.427 | 0.189 |
| TPSC476*016#0350                                  | C            | 47                | 16                                 | 7.5                 | 6               | 350                         | 0.561                              | 0.501 | 0.224 |
| TPSD476*016#0200                                  | D            | 47                | 16                                 | 7.5                 | 6               | 200                         | 0.866                              | 0.775 | 0.346 |
| TPSD476*016#0150                                  | D            | 47                | 16                                 | 7.5                 | 6               | 150                         | 1.000                              | 0.894 | 0.400 |
| TPSC686*016#0200                                  | C            | 68                | 16                                 | 10.9                | 6               | 200                         | 0.741                              | 0.667 | 0.296 |
| TPSD686*016#0150                                  | D            | 68                | 16                                 | 10.8                | 6               | 150                         | 1.000                              | 0.894 | 0.400 |
| TPSY686*016#0250                                  | Y            | 68                | 16                                 | 10.8                | 6               | 250                         | 0.707                              | 0.636 | 0.283 |
| TPSY686*016#0200                                  | Y            | 68                | 16                                 | 10.8                | 6               | 200                         | 0.791                              | 0.712 | 0.316 |
| TPSD107*016#0150                                  | D            | 100               | 16                                 | 16.0                | 6               | 150                         | 1.000                              | 0.894 | 0.400 |
| TPSD107*016#0125                                  | D            | 100               | 16                                 | 16.0                | 6               | 125                         | 1.095                              | 0.980 | 0.438 |
| TPSE107*016#0150                                  | E            | 100               | 16                                 | 16.0                | 6               | 150                         | 1.049                              | 0.938 | 0.420 |
| TPSE107*016#0125                                  | E            | 100               | 16                                 | 16.0                | 6               | 125                         | 1.149                              | 1.028 | 0.460 |
| TPSE107*016#0100                                  | E            | 100               | 16                                 | 16.0                | 6               | 100                         | 1.285                              | 1.149 | 0.514 |
| TPSD157M016#0150                                  | D            | 150               | 16                                 | 24.0                | 6               | 150                         | 1.000                              | 0.900 | 0.400 |
| TPSD157M016#0125                                  | D            | 150               | 16                                 | 24.0                | 6               | 125                         | 1.095                              | 0.986 | 0.438 |
| TPSE227M016#0150                                  | E            | 220               | 16                                 | 35.2                | 10              | 150                         | 1.049                              | 0.944 | 0.420 |
| TPSE227M016#0100                                  | E            | 220               | 16                                 | 35.2                | 10              | 100                         | 1.285                              | 1.156 | 0.514 |
| TPSV227*016#0150                                  | V            | 220               | 16                                 | 35.2                | 8               | 150                         | 1.290                              | 1.162 | 0.516 |
| TPSV227*016#0075                                  | V            | 220               | 16                                 | 35.2                | 8               | 75                          | 1.825                              | 1.643 | 0.730 |
| Voltage/Code20 volt @ 85°C (13 volt @ 125°C) / D  |              |                   |                                    |                     |                 |                             |                                    |       |       |
| TPSA225*020#3000                                  | A            | 2.2               | 20                                 | 0.5                 | 6               | 3000                        | 0.158                              | 0.142 | 0.063 |
| TPSA335*020#2500                                  | A            | 3.3               | 20                                 | 0.7                 | 6               | 2500                        | 0.173                              | 0.156 | 0.069 |
| TPSA475*020#1800                                  | A            | 4.7               | 20                                 | 0.9                 | 6               | 1800                        | 0.204                              | 0.183 | 0.082 |
| TPSC685*020#0700                                  | C            | 6.8               | 20                                 | 1.4                 | 6               | 700                         | 0.396                              | 0.357 | 0.159 |
| TPSB106*020#1000                                  | B            | 10                | 20                                 | 2.0                 | 6               | 1000                        | 0.292                              | 0.261 | 0.117 |
| TPSC106*020#0700                                  | C            | 10                | 20                                 | 2.0                 | 6               | 700                         | 0.396                              | 0.357 | 0.159 |
| TPSC156*020#0450                                  | C            | 15                | 20                                 | 3.0                 | 6               | 450                         | 0.494                              | 0.442 | 0.198 |
| TPSC226*020#0400                                  | C            | 22                | 20                                 | 4.4                 | 6               | 400                         | 0.524                              | 0.472 | 0.210 |
| TPSD226*020#0300                                  | D            | 22                | 20                                 | 4.4                 | 6               | 300                         | 0.707                              | 0.636 | 0.283 |
| TPSD336*020#0200                                  | D            | 33                | 20                                 | 6.6                 | 6               | 200                         | 0.866                              | 0.775 | 0.346 |
| TPSD476*020#0200                                  | D            | 47                | 20                                 | 9.4                 | 6               | 200                         | 0.866                              | 0.779 | 0.346 |
| TPSE476*020#0250                                  | E            | 47                | 20                                 | 9.4                 | 6               | 250                         | 0.812                              | 0.731 | 0.325 |

### RATINGS & PART NUMBER REFERENCE

| AVX<br>Part No.                                  | Case<br>Size | Capacitance<br>μF | Rated<br>Voltage<br>(Voltage Code) | DCL<br>(μA)<br>Max. | DF<br>%<br>Max. | ESR<br>Max. (mΩ)<br>@100kHz | 100kHz Ripple Current (mA) Ratings |       |       |
|--------------------------------------------------|--------------|-------------------|------------------------------------|---------------------|-----------------|-----------------------------|------------------------------------|-------|-------|
|                                                  |              |                   |                                    |                     |                 |                             | 25°C                               | 85°C  | 125°C |
| Voltage/Code20 volt @ 85°C (13 volt @ 125°C) / D |              |                   |                                    |                     |                 |                             |                                    |       |       |
| TPSE476*020#0150                                 | E            | 47                | 20                                 | 9.4                 | 6               | 150                         | 1.049                              | 0.938 | 0.420 |
| TPSE476*020#0125                                 | E            | 47                | 20                                 | 9.4                 | 6               | 125                         | 1.149                              | 1.034 | 0.460 |
| TPSD686*020#0300                                 | D            | 68                | 20                                 | 13.6                | 6               | 300                         | 0.707                              | 0.636 | 0.283 |
| TPSD686*020#0200                                 | D            | 68                | 20                                 | 13.6                | 6               | 200                         | 0.866                              | 0.779 | 0.346 |
| TPSE686*020#0200                                 | E            | 68                | 20                                 | 13.6                | 6               | 200                         | 0.908                              | 0.817 | 0.363 |
| TPSE686*020#0150                                 | E            | 68                | 20                                 | 13.6                | 6               | 150                         | 1.049                              | 0.938 | 0.420 |
| TPSE686*020#0125                                 | E            | 68                | 20                                 | 13.6                | 6               | 125                         | 1.149                              | 1.028 | 0.460 |
| TPSE107M020#0200                                 | E            | 100               | 20                                 | 20.0                | 6               | 200                         | 0.908                              | 0.817 | 0.363 |
| TPSE107M020#0150                                 | E            | 100               | 20                                 | 20.0                | 6               | 150                         | 1.049                              | 0.944 | 0.420 |
| TPSV107*020#0200                                 | V            | 100               | 20                                 | 20.0                | 8               | 200                         | 1.118                              | 1.006 | 0.447 |
| TPSV107*020#0085                                 | V            | 100               | 20                                 | 20.0                | 8               | 85                          | 1.715                              | 1.543 | 0.686 |
| Voltage/Code25 volt @ 85°C (16 volt @ 125°C) / E |              |                   |                                    |                     |                 |                             |                                    |       |       |
| TPSA155*025#3000                                 | A            | 1.5               | 25                                 | 0.4                 | 6               | 3000                        | 0.158                              | 0.141 | 0.063 |
| TPSB225*025#2500                                 | B            | 2.2               | 25                                 | 0.6                 | 6               | 2500                        | 0.184                              | 0.166 | 0.074 |
| TPSB335*025#2000                                 | B            | 3.3               | 25                                 | 0.8                 | 6               | 2000                        | 0.206                              | 0.186 | 0.082 |
| TPSB475*025#1500                                 | B            | 4.7               | 25                                 | 1.2                 | 6               | 1500                        | 0.238                              | 0.213 | 0.095 |
| TPSC685*025#0700                                 | C            | 6.8               | 25                                 | 1.7                 | 6               | 700                         | 0.396                              | 0.357 | 0.159 |
| TPSC685*025#0600                                 | C            | 6.8               | 25                                 | 1.7                 | 6               | 600                         | 0.428                              | 0.385 | 0.171 |
| TPSC106*025#0500                                 | C            | 10                | 25                                 | 2.5                 | 6               | 500                         | 0.469                              | 0.420 | 0.188 |
| TPSD156*025#0300                                 | D            | 15                | 25                                 | 3.8                 | 6               | 300                         | 0.707                              | 0.636 | 0.283 |
| TPSD226*025#0200                                 | D            | 22                | 25                                 | 5.5                 | 6               | 200                         | 0.866                              | 0.775 | 0.346 |
| TPSD336*025#0300                                 | D            | 33                | 25                                 | 8.3                 | 6               | 300                         | 0.707                              | 0.636 | 0.283 |
| TPSE336*025#0300                                 | E            | 33                | 25                                 | 8.3                 | 6               | 300                         | 0.742                              | 0.663 | 0.297 |
| TPSE336*025#0200                                 | E            | 33                | 25                                 | 8.3                 | 6               | 200                         | 0.908                              | 0.812 | 0.363 |
| TPSE336*025#0175                                 | E            | 33                | 25                                 | 8.3                 | 6               | 175                         | 0.971                              | 0.868 | 0.388 |
| TPSD476M025#0250                                 | D            | 47                | 25                                 | 8.3                 | 6               | 250                         | 0.775                              | 0.697 | 0.310 |
| TPSE686M025#0200                                 | E            | 68                | 25                                 | 17.0                | 6               | 200                         | 0.908                              | 0.817 | 0.363 |
| TPSE686M025#0125                                 | E            | 68                | 25                                 | 17.0                | 6               | 125                         | 1.149                              | 1.034 | 0.459 |
| TPSV686*025#0150                                 | V            | 68                | 25                                 | 17.0                | 8               | 150                         | 1.291                              | 1.162 | 0.516 |
| TPSV686*025#0095                                 | V            | 68                | 25                                 | 17.0                | 8               | 95                          | 1.622                              | 1.460 | 0.649 |
| Voltage/Code35 volt @ 85°C (23 volt @ 125°C) / V |              |                   |                                    |                     |                 |                             |                                    |       |       |
| TPSA105*035#3000                                 | A            | 1.0               | 35                                 | 0.5                 | 4               | 3000                        | 0.158                              | 0.142 | 0.063 |
| TPSB105*035#2000                                 | B            | 1.0               | 35                                 | 0.5                 | 4               | 2000                        | 0.206                              | 0.186 | 0.082 |
| TPSB155*035#2500                                 | B            | 1.5               | 35                                 | 0.5                 | 6               | 2500                        | 0.184                              | 0.166 | 0.074 |
| TPSB225*035#2000                                 | B            | 2.2               | 35                                 | 0.8                 | 6               | 2000                        | 0.206                              | 0.186 | 0.082 |
| TPSC335*035#0700                                 | C            | 3.3               | 35                                 | 1.2                 | 6               | 700                         | 0.396                              | 0.357 | 0.159 |
| TPSC475*035#0600                                 | C            | 4.7               | 35                                 | 1.6                 | 6               | 600                         | 0.428                              | 0.383 | 0.171 |
| TPSD685*035#0500                                 | D            | 6.8               | 35                                 | 2.4                 | 6               | 500                         | 0.548                              | 0.493 | 0.219 |
| TPSD106*035#0300                                 | D            | 10                | 35                                 | 3.5                 | 6               | 300                         | 0.707                              | 0.632 | 0.283 |
| TPSE106*035#0200                                 | E            | 10                | 35                                 | 3.5                 | 6               | 200                         | 0.908                              | 0.817 | 0.363 |
| TPSC156*035#0450                                 | C            | 15                | 35                                 | 5.3                 | 6               | 450                         | 0.494                              | 0.445 | 0.198 |
| TPSD156*035#0300                                 | D            | 15                | 35                                 | 5.3                 | 6               | 300                         | 0.707                              | 0.632 | 0.283 |
| TPSD226M035#0400                                 | D            | 22                | 35                                 | 7.7                 | 6               | 400                         | 0.612                              | 0.548 | 0.245 |
| TPSE226*035#0300                                 | E            | 22                | 35                                 | 7.7                 | 6               | 300                         | 0.742                              | 0.663 | 0.297 |
| TPSE226*035#0200                                 | E            | 22                | 35                                 | 7.7                 | 6               | 200                         | 0.908                              | 0.812 | 0.363 |
| TPSD336M035#0300                                 | D            | 33                | 35                                 | 11.6                | 6               | 300                         | 0.707                              | 0.636 | 0.283 |
| TPSE476M035#0250                                 | E            | 47                | 35                                 | 16.5                | 6               | 250                         | 0.812                              | 0.731 | 0.325 |
| TPSE476M035#0200                                 | E            | 47                | 35                                 | 16.5                | 6               | 200                         | 0.908                              | 0.817 | 0.363 |
| Voltage/Code50 volt @ 85°C (33 volt @ 125°C) / T |              |                   |                                    |                     |                 |                             |                                    |       |       |
| TPSD475*050#0700                                 | D            | 4.7               | 50                                 | 2.4                 | 6               | 700                         | 0.463                              | 0.417 | 0.185 |
| TPSD685*050#0600                                 | D            | 6.8               | 50                                 | 3.4                 | 6               | 600                         | 0.500                              | 0.450 | 0.200 |

All technical data relates to an ambient temperature of +25°C measured at 120Hz, 0.5V RMS unless otherwise stated.

\* Insert K for  $\pm 10\%$  and M for  $\pm 20\%$

# Insert R for 7" reel and S for 13" reel

**NOTE:** AVX reserves the right to supply a higher voltage rating or tighter tolerance part in the same case size, to the same reliability standards.

# TAJ, THJ & TPS Marking

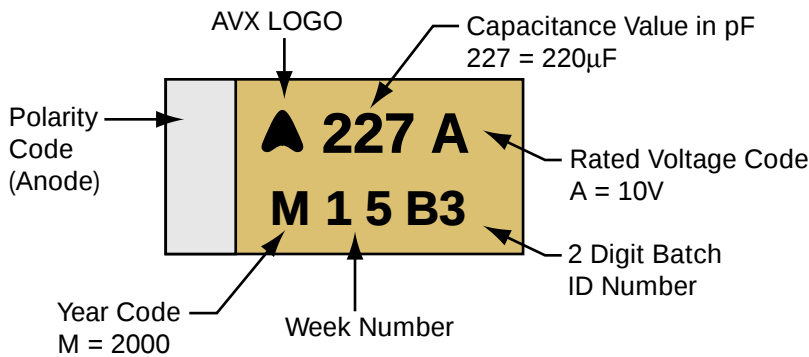


For TAJ & TPS & THJ, the positive end of body has videcon readable polarity marking as shown in the diagram. Bodies are marked by indelible laser marking on top surface with capacitance value, voltage and date of manufacture and batch ID number. R case is an exception due to the small size in which only the voltage and capacitance values are printed.

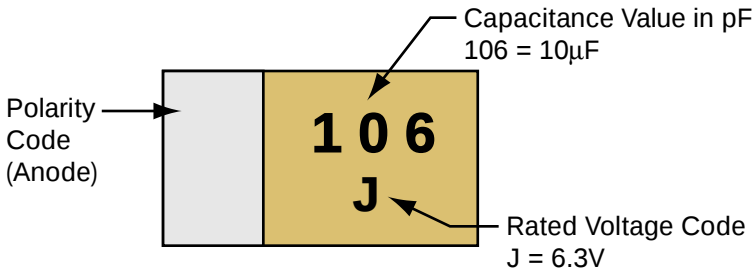
| Year | Year Code |
|------|-----------|
| 1999 | L         |
| 2000 | M         |
| 2001 | N         |
| 2002 | P         |

| Voltage Code | Rated Voltage at 85°C |
|--------------|-----------------------|
| F            | 2                     |
| G            | 4                     |
| J            | 6.3                   |
| A            | 10                    |
| C            | 16                    |
| D            | 20                    |
| E            | 25                    |
| V            | 35                    |
| T            | 50                    |

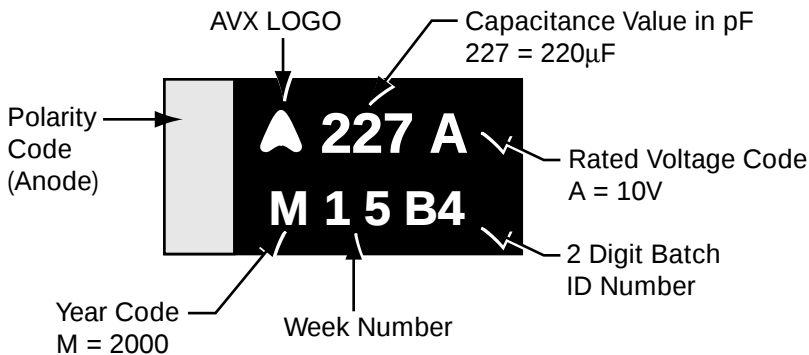
## TAJ & TPS - A, B, C, D, E, S, T, V, W, Y AND X CASE:



## TAJ - R CASE:



## THJ - A, B, C, D AND E CASE:



# TAJ, TPS, THJ & TAC Series



## Tape and Reel Packaging

Tape and reel packaging for automatic component placement.  
Please enter required Suffix on order. Bulk packaging is not available.

### TAJ, TPS AND TAC TAPING SUFFIX TABLE

| Case Size reference | Tape width mm | P mm | 100mm (4") reel | 180mm (7") reel | 330mm (13") reel |
|---------------------|---------------|------|-----------------|-----------------|------------------|
|                     |               |      | Suffix Qty.     | Suffix Qty.     | Suffix Qty.      |
| A                   | 8             | 4    |                 | R 2000          | S 8000           |
| B                   | 8             | 4    |                 | R 2000          | S 8000           |
| C                   | 12            | 8    |                 | R 500           | S 3000           |
| D                   | 12            | 8    |                 | R 500           | S 2500           |
| E                   | 12            | 8    |                 | R 400           | S 1500           |
| V                   | 12            | 8    |                 | R 400           | S 1500           |
| R                   | 8             | 4    |                 | R 2500          | S 10000          |
| S                   | 8             | 4    |                 | R 2500          | S 10000          |
| T                   | 8             | 4    |                 | R 2500          | S 10000          |
| W                   | 12            | 8    |                 | R 1000          | S 5000           |
| Y                   | 12            | 8    |                 | R 1000          | S 4000           |
| X                   | 12            | 8    |                 | R 1000          | S 5000           |
| TACR                | 8             | 4    | X 500           | R 2500          |                  |
| TACL                | 8             | 4    | X 500           | R 3500          |                  |

### TAPE SPECIFICATION

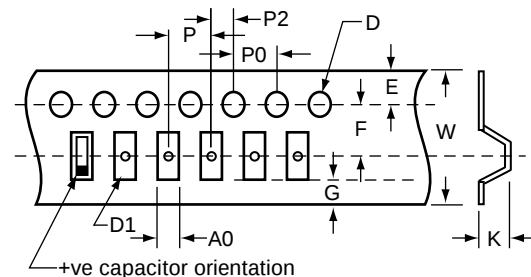
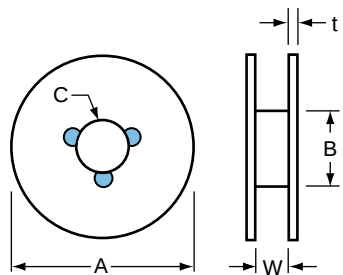
Tape dimensions comply to EIA 481-1

Dimensions  $A_0$  and  $B_0$  of the pocket and the tape thickness,  $K$ , are dependent on the component size.

Tape materials do not affect component solderability during storage. Carrier Tape Thickness <0.4mm.

### PLASTIC TAPE DIMENSIONS

| Code | Ao       | Bo       | K        | W      | E        | F        | G        | P     | P2     | Po    | D           | D1          |
|------|----------|----------|----------|--------|----------|----------|----------|-------|--------|-------|-------------|-------------|
| A    | 1.83±0.1 | 3.57±0.1 | 1.87±0.1 | 8±0.3  | 1.75±0.1 | 3.5±0.05 | 0.75 min | 4±0.1 | 2±0.05 | 4±0.1 | 1.5+0.2-0.0 | 1+0.2-0.0   |
| B    | 3.15±0.1 | 3.77±0.1 | 2.22±0.1 | 8±0.3  | 1.75±0.1 | 3.5±0.05 | 0.75 min | 4±0.1 | 2±0.05 | 4±0.1 | 1.5+0.2-0.0 | 1+0.2-0.0   |
| C    | 3.45±0.1 | 6.4±0.1  | 2.92±0.1 | 12±0.3 | 1.75±0.1 | 5.5±0.05 | 0.75 min | 8±0.1 | 2±0.05 | 4±0.1 | 1.5+0.2-0.0 | 1.5+0.2-0.0 |
| D    | 4.48±0.1 | 7.62±0.1 | 3.22±0.1 | 12±0.3 | 1.75±0.1 | 5.5±0.05 | 0.75 min | 8±0.1 | 2±0.05 | 4±0.1 | 1.5+0.2-0.0 | 1.5+0.2-0.0 |
| E    | 4.50±0.1 | 7.5±0.1  | 4.5±0.1  | 12±0.3 | 1.75±0.1 | 5.5±0.05 | 0.75 min | 8±0.1 | 2±0.05 | 4±0.1 | 1.5+0.2-0.0 | 1.5+0.2-0.0 |
| V    | 6.43±0.1 | 7.44±0.1 | 3.84±0.1 | 12±0.3 | 1.75±0.1 | 5.5±0.05 | 0.75 min | 8±0.1 | 2±0.05 | 4±0.1 | 1.5+0.2-0.0 | 1.5+0.2-0.0 |
| W    | 3.57±0.1 | 6.4±0.1  | 1.65±0.1 | 12±0.3 | 1.75±0.1 | 5.5±0.05 | 0.75 min | 8±0.1 | 2±0.05 | 4±0.1 | 1.5+0.2-0.0 | 1.5+0.2-0.0 |
| X    | 4.67±0.1 | 7.62±0.1 | 1.65±0.1 | 12±0.3 | 1.75±0.1 | 5.5±0.05 | 0.75 min | 8±0.1 | 2±0.05 | 4±0.1 | 1.5+0.2-0.0 | 1.5+0.2-0.0 |
| Y    | 4.67±0.1 | 7.62±0.1 | 2.15±0.1 | 12±0.3 | 1.75±0.1 | 5.5±0.05 | 0.75 min | 8±0.1 | 2±0.05 | 4±0.1 | 1.5+0.2-0.0 | 1.5+0.2-0.0 |
| R    | 1.65±0.1 | 2.45±0.1 | 1.3±0.1  | 8±0.3  | 1.75±0.1 | 3.5±0.05 | 0.75 min | 4±0.1 | 2±0.05 | 4±0.1 | 1.5+0.2-0.0 | 1+0.2-0.0   |
| S    | 1.95±0.1 | 3.55±0.1 | 1.3±0.1  | 8±0.3  | 1.75±0.1 | 3.5±0.05 | 0.75 min | 4±0.1 | 2±0.05 | 4±0.1 | 1.5+0.2-0.0 | 1+0.2-0.0   |
| T    | 3.20±0.1 | 3.8±0.1  | 1.35±0.1 | 8±0.3  | 1.75±0.1 | 3.5±0.05 | 0.75 min | 4±0.1 | 2±0.05 | 4±0.1 | 1.5+0.2-0.0 | 1+0.2-0.0   |
| TACR | 1.65±0.1 | 2.45±0.1 | 1.3±0.1  | 8±0.3  | 1.75±0.1 | 3.5±0.05 | 0.75 min | 4±0.1 | 2±0.05 | 4±0.1 | 1.5+0.2-0.0 | 1+0.2-0.0   |
| TACL | 1.10±0.1 | 2±0.1    | 1.1±0.1  | 8±0.3  | 1.75±0.1 | 3.5±0.05 | 0.75 min | 4±0.1 | 2±0.05 | 4±0.1 | 1.5+0.2-0.0 | 1+0.2-0.0   |



### REEL DIMENSIONS

| Code | Tape | A       | B      | C      | W           | t       |
|------|------|---------|--------|--------|-------------|---------|
| R    | 12mm | 180±2.0 | 50 min | 13±0.5 | 12.4±1.5,-0 | 1.5±0.5 |
| R    | 8mm  | 180±2.0 | 50 min | 13±0.5 | 8.4±1.5,-0  | 1.5±0.5 |
| S    | 12mm | 330±2.0 | 50 min | 13±0.5 | 12.4±1.5,-0 | 1.5±0.5 |
| S    | 8mm  | 330±2.0 | 50 min | 13±0.5 | 8.4±1.5,-0  | 1.5±0.5 |
| X    | 8mm  | 100±2.0 |        | 13±0.5 | 8.4±1.5,-0  | 1.5±0.5 |

### Cover Tape Dimensions

Thickness: 75±25µm

Width of tape:

5.5mm + 0.2mm (8mm tape)

9.5mm + 0.2mm (12mm tape)

