

# TPS Automotive Range



## Low ESR - Automotive Product Range



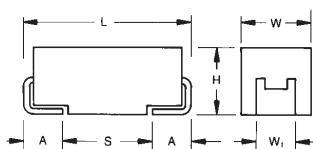
### FEATURES

- Low ESR series of robust MnO<sub>2</sub> solid electrolyte capacitors
- CV range: 0.22-680µF / 6.3-50V
- 5 case sizes available
- Power supply applications



### APPLICATIONS

- Power Supply
- Electric Window Control
- Battery Management Systems
- DC/DC Converter



### MARKING

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



### CASE DIMENSIONS: millimeters (inches)

| Code | EIA Code | EIA Metric | L±0.20 (0.008) | W+0.20 (0.008) -0.10 (0.004) | H+0.20 (0.008) -0.10 (0.004) | W±0.20 (0.008) | A+0.30 (0.012) -0.20 (0.008) | S Min.       |
|------|----------|------------|----------------|------------------------------|------------------------------|----------------|------------------------------|--------------|
| A    | 1206     | 3216-18    | 3.20 (0.126)   | 1.60 (0.063)                 | 1.60 (0.063)                 | 1.20 (0.047)   | 0.80 (0.031)                 | 1.10 (0.043) |
| B    | 1210     | 3528-21    | 3.50 (0.138)   | 2.80 (0.110)                 | 1.90 (0.075)                 | 2.20 (0.087)   | 0.80 (0.031)                 | 1.40 (0.055) |
| C    | 2312     | 6032-28    | 6.00 (0.236)   | 3.20 (0.126)                 | 2.60 (0.102)                 | 2.20 (0.087)   | 1.30 (0.051)                 | 2.90 (0.114) |
| D    | 2917     | 7343-31    | 7.30 (0.287)   | 4.30 (0.169)                 | 2.90 (0.114)                 | 2.40 (0.094)   | 1.30 (0.051)                 | 4.40 (0.173) |
| E    | 2917     | 7343-43    | 7.30 (0.287)   | 4.30 (0.169)                 | 4.10 (0.162)                 | 2.40 (0.094)   | 1.30 (0.051)                 | 4.40 (0.173) |

W1 dimension applies to the termination width for A dimensional area only.

### HOW TO ORDER

**TPS**

**Type**

**C**

**Case Size**  
See table above

**107**

**Capacitance 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

**T**

**Packaging**  
T = Automotive Lead Free 7" Reel  
U = Automotive Lead Free 13" Reel

**0150**

**ESR in mΩ**

**V**

**Dry Pack Option**  
(D,E case sizes mandatory)

### TECHNICAL SPECIFICATIONS

Technical Data:

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

Capacitance Range:

0.22 µF to 680 µF

Capacitance Tolerance:

±10%; ±20%

Rated Voltage (V<sub>R</sub>)

≤ +85°C:

6.3

10

16

20

25

35

50

Category Voltage (V<sub>C</sub>)

≤ +125°C:

4

7

10

13

17

23

33

Surge Voltage (V<sub>S</sub>)

≤ +85°C:

8

13

20

26

32

46

65

Surge Voltage (V<sub>S</sub>)

≤ +125°C:

5

8

13

16

20

28

40

Temperature Range:

-55°C to +125°C

Environmental Classification:

55/125/56 (IEC 68-2)

Reliability:

1% per 1000 hours at 85°C, V<sub>R</sub> with 0.1Ω/V series impedance, 60% confidence level

Termination Finished:

Sn Plating (standard), Gold and SnPb Plating upon request

Meets requirements of AEC-Q200

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

| Capacitance |      | Rated Voltage DC (V <sub>R</sub> ) to 85°C |                                           |                                           |                                   |                              |                                |                               |
|-------------|------|--------------------------------------------|-------------------------------------------|-------------------------------------------|-----------------------------------|------------------------------|--------------------------------|-------------------------------|
| µF          | Code | 6.3V (J)                                   | 10V (A)                                   | 16V (C)                                   | 20V (D)                           | 25V (E)                      | 35V (V)                        | 50V (T)                       |
| 0.15        | 154  |                                            |                                           |                                           |                                   |                              |                                |                               |
| 0.22        | 224  |                                            |                                           |                                           |                                   |                              |                                | A(7000)                       |
| 0.33        | 334  |                                            |                                           |                                           |                                   |                              | A(6000)                        | A(7000)                       |
| 0.47        | 474  |                                            |                                           |                                           |                                   | A(7000)                      | A(6000)                        | A(6500), B(6000)              |
| 0.68        | 684  |                                            |                                           |                                           |                                   | A(6000)                      | A(6000)                        | B(4000)                       |
| 1.0         | 105  |                                            |                                           | A(6200)                                   | A(3000)                           | A(4000)                      | A(3000), B(2000)               | B(3000), C(2500)              |
| 1.5         | 155  |                                            |                                           |                                           | A(3000)                           | A(3000)                      | A(3000), B(2500)               | C(1500,2000)                  |
| 2.2         | 225  |                                            | A(1800)                                   | A(1800,3500)                              | A(3000), B(1700)                  | A(2500),<br>B(900,1200,2500) | B(750,1500,2000),<br>C(1000)   | C(1500), D(1200)              |
| 3.3         | 335  | A(2100)                                    |                                           | A(3500), B(2500)                          | A(2500), B(1300)                  | B(750,1500,2000)             | B(1000), C(700)                | C(1000), D(800)               |
| 4.7         | 475  |                                            | A(1400), B(1400)                          | A(2000), B(800,1500)                      | A(1800), B(750,1000)              | B(700,900), C(700)           | B(700,1500), C(600),<br>D(700) | C(800), D(250,500,700)        |
| 6.8         | 685  |                                            | A(1800), B(1300)                          | A(1500), B(600,1200)                      | B(600,1000), C(700)               | B(700), C(500,600,700)       | C(350), D(400,500)             | D(500,600)                    |
| 10          | 106  | A(1500), B(1500)                           | A(900,1800), B(1000)                      | A(1000), B(500,800),<br>C(500)            | B(500,1000),<br>C(500,700)        | C(300,500), D(500)           | C(600), D(300)                 | D(500),<br>E(250,300,400,500) |
| 15          | 156  | A(700,1500)                                | A(1000), B(450,600),<br>C(700)            | B(500,800)<br>C(300,700)                  | B(500), C(400,450)                | C(220,300), D(300)           | D(300)                         | E(250)                        |
| 22          | 226  | A(500,900), B(375,600),<br>C(500)          | A(900), B(400,500,700),<br>C(180,300)     | B(400,600), C(300,375),<br>D(500), D(700) | C(400), D(200,300)                | C(275,400), D(200,300)       | D(200,300,400),<br>E(200,300)  |                               |
| 33          | 336  | A(600),<br>B(250,350,450,600)              | B(250,425,500,650),<br>C(375,500)         | C(225,300), D(200)                        | C(300), D(160,200)                | D(200,300)                   | E(250,300)                     |                               |
| 47          | 476  | B(250,350,500),<br>C(300)                  | B(250,350,500,650),<br>C(200,350), D(300) | C(350), D(150,200)                        | D(200)                            | D(125,150,250), E(125)       |                                |                               |
| 68          | 686  | B(250,350,500),<br>C(150,200)              | C(200,300), D(150)                        | C(200), D(150)                            | D(150,200,300),<br>E(125,150,200) |                              |                                |                               |
| 100         | 107  | C(150), D(300)                             | C(150,200),<br>D(100,125,150)             | D(100,125,150),<br>E(100,125,150)         | E(100,150,200)                    |                              |                                |                               |
| 150         | 157  | C(150,200,250), D(125)                     | D(85,100), E(100)                         | E(100)                                    |                                   |                              |                                |                               |
| 220         | 227  | D(100,125)                                 | D(100,150),<br>E(70,100,125,150)          |                                           |                                   |                              |                                |                               |
| 330         | 337  | D(70,100),<br>E(100,125,150)               | E(50,60,100)                              |                                           |                                   |                              |                                |                               |
| 470         | 477  | D(45,60,100,200),<br>E(45,50,60,100,200)   |                                           |                                           |                                   |                              |                                |                               |
| 680         | 687  | E(45,60,100)                               |                                           |                                           |                                   |                              |                                |                               |

Not recommended for new designs, higher voltage or smaller case size substitution are offered.

Available Ratings, (ESR ratings in mOhms in brackets)

Engineering samples - please contact manufacturer

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

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### RATINGS & PART NUMBER REFERENCE

| AVX<br>Part No.   | Case<br>Size | Capacitance<br>(µF) | Rated<br>Voltage<br>(V) | Rated<br>Temperature<br>(°C) | Category<br>Voltage<br>(V) | Category<br>Temperature<br>(°C) | DCL<br>Max.<br>(µA) | DF<br>Max.<br>(%) | ESR<br>Max.<br>@ 100kHz<br>(mΩ) | MSL | 100kHz RMS Current (A) |       |       |
|-------------------|--------------|---------------------|-------------------------|------------------------------|----------------------------|---------------------------------|---------------------|-------------------|---------------------------------|-----|------------------------|-------|-------|
|                   |              |                     |                         |                              |                            |                                 |                     |                   |                                 |     | 25°C                   | 85°C  | 125°C |
| 6.3 Volt @ 85°C   |              |                     |                         |                              |                            |                                 |                     |                   |                                 |     |                        |       |       |
| TPSA335*006T2100  | A            | 3.3                 | 6.3                     | 85                           | 4                          | 125                             | 0.5                 | 6                 | 2100                            | 1   | 0.189                  | 0.170 | 0.076 |
| TPSA106*006T1500  | A            | 10                  | 6.3                     | 85                           | 4                          | 125                             | 0.6                 | 6                 | 1500                            | 1   | 0.224                  | 0.201 | 0.089 |
| TPSB106*006T1500  | B            | 10                  | 6.3                     | 85                           | 4                          | 125                             | 0.6                 | 6                 | 1500                            | 1   | 0.238                  | 0.214 | 0.095 |
| TPSA156*006T0700  | A            | 15                  | 6.3                     | 85                           | 4                          | 125                             | 0.9                 | 6                 | 700                             | 1   | 0.327                  | 0.295 | 0.131 |
| TPSA156*006T1500  | A            | 15                  | 6.3                     | 85                           | 4                          | 125                             | 0.9                 | 6                 | 1500                            | 1   | 0.224                  | 0.201 | 0.089 |
| TPSA226*006T0500  | A            | 22                  | 6.3                     | 85                           | 4                          | 125                             | 1.4                 | 6                 | 500                             | 1   | 0.387                  | 0.349 | 0.155 |
| TPSA226*006T0900  | A            | 22                  | 6.3                     | 85                           | 4                          | 125                             | 1.4                 | 6                 | 900                             | 1   | 0.289                  | 0.260 | 0.115 |
| TPSB226*006T0375  | B            | 22                  | 6.3                     | 85                           | 4                          | 125                             | 1.4                 | 6                 | 375                             | 1   | 0.476                  | 0.428 | 0.190 |
| TPSB226*006T0600  | B            | 22                  | 6.3                     | 85                           | 4                          | 125                             | 1.4                 | 6                 | 600                             | 1   | 0.376                  | 0.339 | 0.151 |
| TPSC226*006T0500  | C            | 22                  | 6.3                     | 85                           | 4                          | 125                             | 1.4                 | 6                 | 500                             | 1   | 0.469                  | 0.422 | 0.188 |
| TPSA336*006T0600  | A            | 33                  | 6.3                     | 85                           | 4                          | 125                             | 2.1                 | 8                 | 600                             | 1   | 0.354                  | 0.318 | 0.141 |
| TPSB336*006T0250  | B            | 33                  | 6.3                     | 85                           | 4                          | 125                             | 2.1                 | 6                 | 250                             | 1   | 0.583                  | 0.525 | 0.233 |
| TPSB336*006T0350  | B            | 33                  | 6.3                     | 85                           | 4                          | 125                             | 2.1                 | 6                 | 350                             | 1   | 0.493                  | 0.444 | 0.197 |
| TPSB336*006T0450  | B            | 33                  | 6.3                     | 85                           | 4                          | 125                             | 2.1                 | 6                 | 450                             | 1   | 0.435                  | 0.391 | 0.174 |
| TPSB336*006T0600  | B            | 33                  | 6.3                     | 85                           | 4                          | 125                             | 2.1                 | 6                 | 600                             | 1   | 0.376                  | 0.339 | 0.151 |
| TPSB476*006T0250  | B            | 47                  | 6.3                     | 85                           | 4                          | 125                             | 3                   | 6                 | 250                             | 1   | 0.583                  | 0.525 | 0.233 |
| TPSB476*006T0350  | B            | 47                  | 6.3                     | 85                           | 4                          | 125                             | 3                   | 6                 | 350                             | 1   | 0.493                  | 0.444 | 0.197 |
| TPSB476*006T0500  | B            | 47                  | 6.3                     | 85                           | 4                          | 125                             | 3                   | 6                 | 500                             | 1   | 0.412                  | 0.371 | 0.165 |
| TPSC476*006T0300  | C            | 47                  | 6.3                     | 85                           | 4                          | 125                             | 3                   | 6                 | 300                             | 1   | 0.606                  | 0.545 | 0.242 |
| TPSB686*006T0250  | B            | 68                  | 6.3                     | 85                           | 4                          | 125                             | 4                   | 8                 | 250                             | 1   | 0.583                  | 0.525 | 0.233 |
| TPSB686*006T0350  | B            | 68                  | 6.3                     | 85                           | 4                          | 125                             | 4                   | 8                 | 350                             | 1   | 0.493                  | 0.444 | 0.197 |
| TPSB686*006T0500  | B            | 68                  | 6.3                     | 85                           | 4                          | 125                             | 4                   | 8                 | 500                             | 1   | 0.412                  | 0.371 | 0.165 |
| TPSC686*006T0150  | C            | 68                  | 6.3                     | 85                           | 4                          | 125                             | 4.3                 | 6                 | 150                             | 1   | 0.856                  | 0.771 | 0.343 |
| TPSC686*006T0200  | C            | 68                  | 6.3                     | 85                           | 4                          | 125                             | 4.3                 | 6                 | 200                             | 1   | 0.742                  | 0.667 | 0.297 |
| TPSC107*006T0150  | C            | 100                 | 6.3                     | 85                           | 4                          | 125                             | 6.3                 | 6                 | 150                             | 1   | 0.856                  | 0.771 | 0.343 |
| TPSD107*006T0300V | D            | 100                 | 6.3                     | 85                           | 4                          | 125                             | 6.3                 | 6                 | 300                             | 3   | 0.707                  | 0.636 | 0.283 |
| TPSC157*006T0150  | C            | 150                 | 6.3                     | 85                           | 4                          | 125                             | 9.5                 | 6                 | 150                             | 1   | 0.856                  | 0.771 | 0.343 |
| TPSC157*006T0200  | C            | 150                 | 6.3                     | 85                           | 4                          | 125                             | 9.5                 | 6                 | 200                             | 1   | 0.742                  | 0.667 | 0.297 |
| TPSC157*006T0250  | C            | 150                 | 6.3                     | 85                           | 4                          | 125                             | 9.5                 | 6                 | 250                             | 1   | 0.663                  | 0.597 | 0.265 |
| TPSD157*006T0125V | D            | 150                 | 6.3                     | 85                           | 4                          | 125                             | 9.5                 | 6                 | 125                             | 3   | 1.095                  | 0.986 | 0.438 |
| TPSD227*006T0100V | D            | 220                 | 6.3                     | 85                           | 4                          | 125                             | 13.9                | 8                 | 100                             | 3   | 1.225                  | 1.102 | 0.490 |
| TPSD227*006T0125V | D            | 220                 | 6.3                     | 85                           | 4                          | 125                             | 13.9                | 8                 | 125                             | 3   | 1.095                  | 0.986 | 0.438 |
| TPSD337*006T0070V | D            | 330                 | 6.3                     | 85                           | 4                          | 125                             | 20.8                | 8                 | 70                              | 3   | 1.464                  | 1.317 | 0.586 |
| TPSD337*006T0100V | D            | 330                 | 6.3                     | 85                           | 4                          | 125                             | 20.8                | 8                 | 100                             | 3   | 1.225                  | 1.102 | 0.490 |
| TPSE337*006T0100V | E            | 330                 | 6.3                     | 85                           | 4                          | 125                             | 20.8                | 8                 | 100                             | 3   | 1.285                  | 1.156 | 0.514 |
| TPSE337*006T0125V | E            | 330                 | 6.3                     | 85                           | 4                          | 125                             | 20.8                | 8                 | 125                             | 3   | 1.149                  | 1.034 | 0.460 |
| TPSE337*006T0150V | E            | 330                 | 6.3                     | 85                           | 4                          | 125                             | 20.8                | 8                 | 150                             | 3   | 1.049                  | 0.944 | 0.420 |
| TPSD477*006T0045V | D            | 470                 | 6.3                     | 85                           | 4                          | 125                             | 28                  | 12                | 45                              | 3   | 1.826                  | 1.643 | 0.730 |
| TPSD477*006T0060V | D            | 470                 | 6.3                     | 85                           | 4                          | 125                             | 28                  | 12                | 60                              | 3   | 1.581                  | 1.423 | 0.632 |
| TPSD477*006T0100V | D            | 470                 | 6.3                     | 85                           | 4                          | 125                             | 28                  | 12                | 100                             | 3   | 1.225                  | 1.102 | 0.490 |
| TPSD477*006T0200V | D            | 470                 | 6.3                     | 85                           | 4                          | 125                             | 28                  | 12                | 200                             | 3   | 0.866                  | 0.779 | 0.346 |
| TPSE477*006T0045V | E            | 470                 | 6.3                     | 85                           | 4                          | 125                             | 28                  | 10                | 45                              | 3   | 1.915                  | 1.723 | 0.766 |
| TPSE477*006T0050V | E            | 470                 | 6.3                     | 85                           | 4                          | 125                             | 28                  | 10                | 50                              | 3   | 1.817                  | 1.635 | 0.727 |
| TPSE477*006T0060V | E            | 470                 | 6.3                     | 85                           | 4                          | 125                             | 28                  | 10                | 60                              | 3   | 1.658                  | 1.492 | 0.663 |
| TPSE477*006T0100V | E            | 470                 | 6.3                     | 85                           | 4                          | 125                             | 28                  | 10                | 100                             | 3   | 1.285                  | 1.156 | 0.514 |
| TPSE477*006T0200V | E            | 470                 | 6.3                     | 85                           | 4                          | 125                             | 28                  | 10                | 200                             | 3   | 0.908                  | 0.817 | 0.363 |
| TPSE687*006T0045V | E            | 680                 | 6.3                     | 85                           | 4                          | 125                             | 42.8                | 10                | 45                              | 3   | 1.915                  | 1.723 | 0.766 |
| TPSE687*006T0060V | E            | 680                 | 6.3                     | 85                           | 4                          | 125                             | 42.8                | 10                | 60                              | 3   | 1.658                  | 1.492 | 0.663 |
| TPSE687*006T0100V | E            | 680                 | 6.3                     | 85                           | 4                          | 125                             | 42.8                | 10                | 100                             | 3   | 1.285                  | 1.156 | 0.514 |
| 10 Volt @ 85°C    |              |                     |                         |                              |                            |                                 |                     |                   |                                 |     |                        |       |       |
| TPSA225*010T1800  | A            | 2.2                 | 10                      | 85                           | 7                          | 125                             | 0.5                 | 6                 | 1800                            | 1   | 0.204                  | 0.184 | 0.082 |
| TPSA475*010T1400  | A            | 4.7                 | 10                      | 85                           | 7                          | 125                             | 0.5                 | 6                 | 1400                            | 1   | 0.231                  | 0.208 | 0.093 |
| TPSB475*010T1400  | B            | 4.7                 | 10                      | 85                           | 7                          | 125                             | 0.5                 | 6                 | 1400                            | 1   | 0.246                  | 0.222 | 0.099 |
| TPSA685*010T1800  | A            | 6.8                 | 10                      | 85                           | 7                          | 125                             | 0.7                 | 6                 | 1800                            | 1   | 0.204                  | 0.184 | 0.082 |
| TPSB685*010T1300  | B            | 6.8                 | 10                      | 85                           | 7                          | 125                             | 0.7                 | 6                 | 1300                            | 1   | 0.256                  | 0.230 | 0.102 |
| TPSA106*010T0900  | A            | 10                  | 10                      | 85                           | 7                          | 125                             | 1                   | 6                 | 900                             | 1   | 0.289                  | 0.260 | 0.115 |
| TPSA106*010T1800  | A            | 10                  | 10                      | 85                           | 7                          | 125                             | 1                   | 6                 | 1800                            | 1   | 0.204                  | 0.184 | 0.082 |
| TPSB106*010T1000  | B            | 10                  | 10                      | 85                           | 7                          | 125                             | 1                   | 6                 | 1000                            | 1   | 0.292                  | 0.262 | 0.117 |
| TPSA156*010T1000  | A            | 15                  | 10                      | 85                           | 7                          | 125                             | 1.5                 | 6                 | 1000                            | 1   | 0.274                  | 0.246 | 0.110 |
| TPSB156*010T0450  | B            | 15                  | 10                      | 85                           | 7                          | 125                             | 1.5                 | 6                 | 450                             | 1   | 0.435                  | 0.391 | 0.174 |
| TPSB156*010T0600  | B            | 15                  | 10                      | 85                           | 7                          | 125                             | 1.5                 | 6                 | 600                             | 1   | 0.376                  | 0.339 | 0.151 |
| TPSC156*010T0700  | C            | 15                  | 10                      | 85                           | 7                          | 125                             | 1.5                 | 6                 | 700                             | 1   | 0.396                  | 0.357 | 0.159 |
| TPSA226*010T0900  | A            | 22                  | 10                      | 85                           | 7                          | 125                             | 2.2                 | 8                 | 900                             | 1   | 0.289                  | 0.260 | 0.115 |
| TPSB226*010T0400  | B            | 22                  | 10                      | 85                           | 7                          | 125                             | 2.2                 | 6                 | 400                             | 1   | 0.461                  | 0.415 | 0.184 |
| TPSB226*010T0500  | B            | 22                  | 10                      | 85                           | 7                          | 125                             | 2.2                 | 6                 | 500                             | 1   | 0.412                  | 0.371 | 0.165 |
| TPSB226*010T0700  | B            | 22                  | 10                      | 85                           | 7                          | 125                             | 2.2                 | 6                 | 700                             | 1   | 0.348                  | 0.314 | 0.139 |
| TPSC226*010T0180  | C            | 22                  | 10                      | 85                           | 7                          | 125                             | 2.2                 | 6                 | 180                             | 1   | 0.782                  | 0.704 | 0.313 |
| TPSC226*010T0300  | C            | 22                  | 10                      | 85                           | 7                          | 125                             | 2.2                 | 6                 | 300                             | 1   | 0.606                  | 0.545 | 0.242 |
| TPSB336*010T0250  | B            | 33                  | 10                      | 85                           | 7                          | 125                             | 3.3                 | 6                 | 250                             | 1   | 0.583                  | 0.525 | 0.233 |
| TPSB336*010T0425  | B            | 33                  | 10                      | 85                           | 7                          | 125                             | 3.3                 | 6                 | 425                             | 1   | 0.447                  | 0.402 | 0.179 |

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### RATINGS & PART NUMBER REFERENCE

| AVX Part No.          | Case Size | Capacitance (µF) | Rated Voltage (V) | Rated Temperature (°C) | Category Voltage (V) | Category Temperature (°C) | DCL Max. (µA) | DF Max. (%) | ESR Max. @ 100kHz (mΩ) | MSL | 100kHz RMS Current (A) |       |       |
|-----------------------|-----------|------------------|-------------------|------------------------|----------------------|---------------------------|---------------|-------------|------------------------|-----|------------------------|-------|-------|
|                       |           |                  |                   |                        |                      |                           |               |             |                        |     | 25°C                   | 85°C  | 125°C |
| TPSB336*010T0500      | B         | 33               | 10                | 85                     | 7                    | 125                       | 3.3           | 6           | 500                    | 1   | 0.412                  | 0.371 | 0.165 |
| TPSB336*010T0650      | B         | 33               | 10                | 85                     | 7                    | 125                       | 3.3           | 6           | 650                    | 1   | 0.362                  | 0.325 | 0.145 |
| TPSC336*010T0375      | C         | 33               | 10                | 85                     | 7                    | 125                       | 3.3           | 6           | 375                    | 1   | 0.542                  | 0.487 | 0.217 |
| TPSC336*010T0500      | C         | 33               | 10                | 85                     | 7                    | 125                       | 3.3           | 6           | 500                    | 1   | 0.469                  | 0.422 | 0.188 |
| TPSB476*010T0250      | B         | 47               | 10                | 85                     | 7                    | 125                       | 4.7           | 8           | 250                    | 1   | 0.583                  | 0.525 | 0.233 |
| TPSB476*010T0350      | B         | 47               | 10                | 85                     | 7                    | 125                       | 4.7           | 8           | 350                    | 1   | 0.493                  | 0.444 | 0.197 |
| TPSB476*010T0500      | B         | 47               | 10                | 85                     | 7                    | 125                       | 4.7           | 8           | 500                    | 1   | 0.412                  | 0.371 | 0.165 |
| TPSB476*010T0650      | B         | 47               | 10                | 85                     | 7                    | 125                       | 4.7           | 8           | 650                    | 1   | 0.362                  | 0.325 | 0.145 |
| TPSC476*010T0200      | C         | 47               | 10                | 85                     | 7                    | 125                       | 4.7           | 6           | 200                    | 1   | 0.742                  | 0.667 | 0.297 |
| TPSC476*010T0350      | C         | 47               | 10                | 85                     | 7                    | 125                       | 4.7           | 6           | 350                    | 1   | 0.561                  | 0.505 | 0.224 |
| TPSD476*010T0300V     | D         | 47               | 10                | 85                     | 7                    | 125                       | 4.7           | 6           | 300                    | 3   | 0.707                  | 0.636 | 0.283 |
| TPSC686*010T0200      | C         | 68               | 10                | 85                     | 7                    | 125                       | 6.8           | 6           | 200                    | 1   | 0.742                  | 0.667 | 0.297 |
| TPSC686*010T0300      | C         | 68               | 10                | 85                     | 7                    | 125                       | 6.8           | 6           | 300                    | 1   | 0.606                  | 0.545 | 0.242 |
| TPSD686*010T0150V     | D         | 68               | 10                | 85                     | 7                    | 125                       | 6.8           | 6           | 150                    | 3   | 1.000                  | 0.900 | 0.400 |
| TPSC107*010T0150      | C         | 100              | 10                | 85                     | 7                    | 125                       | 10            | 8           | 150                    | 1   | 0.856                  | 0.771 | 0.343 |
| TPSC107*010T0200      | C         | 100              | 10                | 85                     | 7                    | 125                       | 10            | 8           | 200                    | 1   | 0.742                  | 0.667 | 0.297 |
| TPSD107*010T0100V     | D         | 100              | 10                | 85                     | 7                    | 125                       | 10            | 6           | 100                    | 3   | 1.225                  | 1.102 | 0.490 |
| TPSD107*010T0125V     | D         | 100              | 10                | 85                     | 7                    | 125                       | 10            | 6           | 125                    | 3   | 1.095                  | 0.986 | 0.438 |
| TPSD107*010T0150V     | D         | 100              | 10                | 85                     | 7                    | 125                       | 10            | 6           | 150                    | 3   | 1.000                  | 0.900 | 0.400 |
| TPSD157*010T0085V     | D         | 150              | 10                | 85                     | 7                    | 125                       | 15            | 8           | 85                     | 3   | 1.328                  | 1.196 | 0.531 |
| TPSD157*010T0100V     | D         | 150              | 10                | 85                     | 7                    | 125                       | 15            | 8           | 100                    | 3   | 1.225                  | 1.102 | 0.490 |
| TPSE157*010T0100V     | E         | 150              | 10                | 85                     | 7                    | 125                       | 15            | 8           | 100                    | 3   | 1.285                  | 1.156 | 0.514 |
| TPSD227*010T0100V     | D         | 220              | 10                | 85                     | 7                    | 125                       | 22            | 8           | 100                    | 3   | 1.225                  | 1.102 | 0.490 |
| TPSD227*010T0150V     | D         | 220              | 10                | 85                     | 7                    | 125                       | 22            | 8           | 150                    | 3   | 1.000                  | 0.900 | 0.400 |
| TPSE227*010T0070V     | E         | 220              | 10                | 85                     | 7                    | 125                       | 22            | 8           | 70                     | 3   | 1.535                  | 1.382 | 0.614 |
| TPSE227*010T0100V     | E         | 220              | 10                | 85                     | 7                    | 125                       | 22            | 8           | 100                    | 3   | 1.285                  | 1.156 | 0.514 |
| TPSE227*010T0125V     | E         | 220              | 10                | 85                     | 7                    | 125                       | 22            | 8           | 125                    | 3   | 1.149                  | 1.034 | 0.460 |
| TPSE227*010T0150V     | E         | 220              | 10                | 85                     | 7                    | 125                       | 22            | 8           | 150                    | 3   | 1.049                  | 0.944 | 0.420 |
| TPSE337*010T0050V     | E         | 330              | 10                | 85                     | 7                    | 125                       | 33            | 8           | 50                     | 3   | 1.817                  | 1.635 | 0.727 |
| TPSE337*010T0060V     | E         | 330              | 10                | 85                     | 7                    | 125                       | 33            | 8           | 60                     | 3   | 1.658                  | 1.492 | 0.663 |
| TPSE337*010T0100V     | E         | 330              | 10                | 85                     | 7                    | 125                       | 33            | 8           | 100                    | 3   | 1.285                  | 1.156 | 0.514 |
| <b>16 Volt @ 85°C</b> |           |                  |                   |                        |                      |                           |               |             |                        |     |                        |       |       |
| TPSA105*016T6200      | A         | 1.0              | 16                | 85                     | 10                   | 125                       | 0.5           | 4           | 6200                   | 1   | 0.110                  | 0.099 | 0.044 |
| TPSA225*016T1800      | A         | 2.2              | 16                | 85                     | 10                   | 125                       | 0.5           | 6           | 1800                   | 1   | 0.204                  | 0.184 | 0.082 |
| TPSA225*016T3500      | A         | 2.2              | 16                | 85                     | 10                   | 125                       | 0.5           | 6           | 3500                   | 1   | 0.146                  | 0.132 | 0.059 |
| TPSA335*016T3500      | A         | 3.3              | 16                | 85                     | 10                   | 125                       | 0.5           | 6           | 3500                   | 1   | 0.146                  | 0.132 | 0.059 |
| TPSB335*016T2500      | B         | 3.3              | 16                | 85                     | 10                   | 125                       | 0.5           | 6           | 2500                   | 1   | 0.184                  | 0.166 | 0.074 |
| TPSA475*016T2000      | A         | 4.7              | 16                | 85                     | 10                   | 125                       | 0.8           | 6           | 2000                   | 1   | 0.194                  | 0.174 | 0.077 |
| TPSB475*016T0800      | B         | 4.7              | 16                | 85                     | 10                   | 125                       | 0.8           | 6           | 800                    | 1   | 0.326                  | 0.293 | 0.130 |
| TPSB475*016T1500      | B         | 4.7              | 16                | 85                     | 10                   | 125                       | 0.8           | 6           | 1500                   | 1   | 0.238                  | 0.214 | 0.095 |
| TPSA685*016T1500      | A         | 6.8              | 16                | 85                     | 10                   | 125                       | 1.1           | 6           | 1500                   | 1   | 0.224                  | 0.201 | 0.089 |
| TPSB685*016T0600      | B         | 6.8              | 16                | 85                     | 10                   | 125                       | 1.1           | 6           | 600                    | 1   | 0.376                  | 0.339 | 0.151 |
| TPSB685*016T1200      | B         | 6.8              | 16                | 85                     | 10                   | 125                       | 1.1           | 6           | 1200                   | 1   | 0.266                  | 0.240 | 0.106 |
| TPSA106*016T1000      | A         | 10               | 16                | 85                     | 10                   | 125                       | 1.6           | 6           | 1000                   | 1   | 0.274                  | 0.246 | 0.110 |
| TPSB106*016T0500      | B         | 10               | 16                | 85                     | 10                   | 125                       | 1.6           | 6           | 500                    | 1   | 0.412                  | 0.371 | 0.165 |
| TPSB106*016T0800      | B         | 10               | 16                | 85                     | 10                   | 125                       | 1.6           | 6           | 800                    | 1   | 0.326                  | 0.293 | 0.130 |
| TPSC106*016T0500      | C         | 10               | 16                | 85                     | 10                   | 125                       | 1.6           | 6           | 500                    | 1   | 0.469                  | 0.422 | 0.188 |
| TPSB156*016T0500      | B         | 15               | 16                | 85                     | 10                   | 125                       | 2.4           | 6           | 500                    | 1   | 0.412                  | 0.371 | 0.165 |
| TPSB156*016T0800      | B         | 15               | 16                | 85                     | 10                   | 125                       | 2.4           | 6           | 800                    | 1   | 0.326                  | 0.293 | 0.130 |
| TPSC156*016T0300      | C         | 15               | 16                | 85                     | 10                   | 125                       | 2.4           | 6           | 300                    | 1   | 0.606                  | 0.545 | 0.242 |
| TPSC156*016T0700      | C         | 15               | 16                | 85                     | 10                   | 125                       | 2.4           | 6           | 700                    | 1   | 0.396                  | 0.357 | 0.159 |
| TPSB226*016T0400      | B         | 22               | 16                | 85                     | 10                   | 125                       | 3.5           | 6           | 400                    | 1   | 0.461                  | 0.415 | 0.184 |
| TPSB226*016T0600      | B         | 22               | 16                | 85                     | 10                   | 125                       | 3.5           | 6           | 600                    | 1   | 0.376                  | 0.339 | 0.151 |
| TPSC226*016T0300      | C         | 22               | 16                | 85                     | 10                   | 125                       | 3.5           | 6           | 300                    | 1   | 0.606                  | 0.545 | 0.242 |
| TPSC226*016T0375      | C         | 22               | 16                | 85                     | 10                   | 125                       | 3.5           | 6           | 375                    | 1   | 0.542                  | 0.487 | 0.217 |
| TPSD226*016T0500V     | D         | 22               | 16                | 85                     | 10                   | 125                       | 3.5           | 6           | 500                    | 3   | 0.548                  | 0.493 | 0.219 |
| TPSD226*016T0700V     | D         | 22               | 16                | 85                     | 10                   | 125                       | 3.5           | 6           | 700                    | 3   | 0.463                  | 0.417 | 0.185 |
| TPSC336*016T0225      | C         | 33               | 16                | 85                     | 10                   | 125                       | 5.3           | 6           | 225                    | 1   | 0.699                  | 0.629 | 0.280 |
| TPSC336*016T0300      | C         | 33               | 16                | 85                     | 10                   | 125                       | 5.3           | 6           | 300                    | 1   | 0.606                  | 0.545 | 0.242 |
| TPSD336*016T0200V     | D         | 33               | 16                | 85                     | 10                   | 125                       | 5.3           | 6           | 200                    | 3   | 0.866                  | 0.779 | 0.346 |
| TPSC476*016T0350      | C         | 47               | 16                | 85                     | 10                   | 125                       | 7.5           | 6           | 350                    | 1   | 0.561                  | 0.505 | 0.224 |
| TPSD476*016T0150V     | D         | 47               | 16                | 85                     | 10                   | 125                       | 7.5           | 6           | 150                    | 3   | 1.000                  | 0.900 | 0.400 |
| TPSD476*016T0200V     | D         | 47               | 16                | 85                     | 10                   | 125                       | 7.5           | 6           | 200                    | 3   | 0.866                  | 0.779 | 0.346 |
| TPSC686*016T0200      | C         | 68               | 16                | 85                     | 10                   | 125                       | 10.9          | 6           | 200                    | 1   | 0.742                  | 0.667 | 0.297 |
| TPSD686*016T0150V     | D         | 68               | 16                | 85                     | 10                   | 125                       | 10.9          | 6           | 150                    | 3   | 1.000                  | 0.900 | 0.400 |
| TPSD107*016T0100V     | D         | 100              | 16                | 85                     | 10                   | 125                       | 16            | 6           | 100                    | 3   | 1.225                  | 1.102 | 0.490 |
| TPSD107*016T0125V     | D         | 100              | 16                | 85                     | 10                   | 125                       | 16            | 6           | 125                    | 3   | 1.095                  | 0.986 | 0.438 |
| TPSD107*016T0150V     | D         | 100              | 16                | 85                     | 10                   | 125                       | 16            | 6           | 150                    | 3   | 1.000                  | 0.900 | 0.400 |
| TPSE107*016T0100V     | E         | 100              | 16                | 85                     | 10                   | 125                       | 16            | 6           | 100                    | 3   | 1.285                  | 1.156 | 0.514 |
| TPSE107*016T0125V     | E         | 100              | 16                | 85                     | 10                   | 125                       | 16            | 6           | 125                    | 3   | 1.149                  | 1.034 | 0.460 |
| TPSE107*016T0150V     | E         | 100              | 16                | 85                     | 10                   | 125                       | 16            | 6           | 150                    | 3   | 1.049                  | 0.944 | 0.420 |
| TPSE157*016T0100V     | E         | 150              | 16                | 85                     | 10                   | 125                       | 23            | 8           | 100                    | 3   | 1.285                  | 1.156 | 0.514 |

# TPS Automotive Range



## Low ESR - Automotive Product Range

### RATINGS & PART NUMBER REFERENCE

| AVX<br>Part No.   | Case<br>Size | Capacitance<br>(µF) | Rated<br>Voltage<br>(V) | Rated<br>Temperature<br>(°C) | Category<br>Voltage<br>(V) | Category<br>Temperature<br>(°C) | DCL<br>Max.<br>(µA) | DF<br>Max.<br>(%) | ESR<br>Max.<br>@ 100kHz<br>(mΩ) | MSL | 100kHz RMS Current (A) |       |       |
|-------------------|--------------|---------------------|-------------------------|------------------------------|----------------------------|---------------------------------|---------------------|-------------------|---------------------------------|-----|------------------------|-------|-------|
|                   |              |                     |                         |                              |                            |                                 |                     |                   |                                 |     | 25°C                   | 85°C  | 125°C |
| 20 Volt @ 85°C    |              |                     |                         |                              |                            |                                 |                     |                   |                                 |     |                        |       |       |
| TPSA105*020T3000  | A            | 1                   | 20                      | 85                           | 13                         | 125                             | 0.5                 | 4                 | 3000                            | 1   | 0.158                  | 0.142 | 0.063 |
| TPSA155*020T3000  | A            | 1.5                 | 20                      | 85                           | 13                         | 125                             | 0.5                 | 6                 | 3000                            | 1   | 0.158                  | 0.142 | 0.063 |
| TPSA225*020T3000  | A            | 2.2                 | 20                      | 85                           | 13                         | 125                             | 0.5                 | 6                 | 3000                            | 1   | 0.158                  | 0.142 | 0.063 |
| TPSB225*020T1700  | B            | 2.2                 | 20                      | 85                           | 13                         | 125                             | 0.5                 | 6                 | 1700                            | 1   | 0.224                  | 0.201 | 0.089 |
| TPSA335*020T2500  | A            | 3.3                 | 20                      | 85                           | 13                         | 125                             | 0.7                 | 6                 | 2500                            | 1   | 0.173                  | 0.156 | 0.069 |
| TPSB335*020T1300  | B            | 3.3                 | 20                      | 85                           | 13                         | 125                             | 0.7                 | 6                 | 1300                            | 1   | 0.256                  | 0.230 | 0.102 |
| TPSA475*020T1800  | A            | 4.7                 | 20                      | 85                           | 13                         | 125                             | 0.9                 | 6                 | 1800                            | 1   | 0.204                  | 0.184 | 0.082 |
| TPSB475*020T0750  | B            | 4.7                 | 20                      | 85                           | 13                         | 125                             | 0.9                 | 6                 | 750                             | 1   | 0.337                  | 0.303 | 0.135 |
| TPSB475*020T1000  | B            | 4.7                 | 20                      | 85                           | 13                         | 125                             | 0.9                 | 6                 | 1000                            | 1   | 0.292                  | 0.262 | 0.117 |
| TPSB685*020T0600  | B            | 6.8                 | 20                      | 85                           | 13                         | 125                             | 1.4                 | 6                 | 600                             | 1   | 0.376                  | 0.339 | 0.151 |
| TPSB685*020T1000  | B            | 6.8                 | 20                      | 85                           | 13                         | 125                             | 1.4                 | 6                 | 1000                            | 1   | 0.292                  | 0.262 | 0.117 |
| TPSC685*020T0700  | C            | 6.8                 | 20                      | 85                           | 13                         | 125                             | 1.4                 | 6                 | 700                             | 1   | 0.396                  | 0.357 | 0.159 |
| TPSB106*020T0500  | B            | 10                  | 20                      | 85                           | 13                         | 125                             | 2                   | 6                 | 500                             | 1   | 0.412                  | 0.371 | 0.165 |
| TPSB106*020T1000  | B            | 10                  | 20                      | 85                           | 13                         | 125                             | 2                   | 6                 | 1000                            | 1   | 0.292                  | 0.262 | 0.117 |
| TPSC106*020T0500  | C            | 10                  | 20                      | 85                           | 13                         | 125                             | 2                   | 6                 | 500                             | 1   | 0.469                  | 0.422 | 0.188 |
| TPSC106*020T0700  | C            | 10                  | 20                      | 85                           | 13                         | 125                             | 2                   | 6                 | 700                             | 1   | 0.396                  | 0.357 | 0.159 |
| TPSB156*020T0500  | B            | 15                  | 20                      | 85                           | 13                         | 125                             | 3                   | 6                 | 500                             | 1   | 0.412                  | 0.371 | 0.165 |
| TPSC156*020T0400  | C            | 15                  | 20                      | 85                           | 13                         | 125                             | 3                   | 6                 | 400                             | 1   | 0.524                  | 0.472 | 0.210 |
| TPSC156*020T0450  | C            | 15                  | 20                      | 85                           | 13                         | 125                             | 3                   | 6                 | 450                             | 1   | 0.494                  | 0.445 | 0.198 |
| TPSC226*020T0400  | C            | 22                  | 20                      | 85                           | 13                         | 125                             | 4.4                 | 6                 | 400                             | 1   | 0.524                  | 0.472 | 0.210 |
| TPSD226*020T0200V | D            | 22                  | 20                      | 85                           | 13                         | 125                             | 4.4                 | 6                 | 200                             | 3   | 0.866                  | 0.779 | 0.346 |
| TPSD226*020T0300V | D            | 22                  | 20                      | 85                           | 13                         | 125                             | 4.4                 | 6                 | 300                             | 3   | 0.707                  | 0.636 | 0.283 |
| TPSC336*020T0300  | C            | 33                  | 20                      | 85                           | 13                         | 125                             | 6.6                 | 6                 | 300                             | 1   | 0.606                  | 0.545 | 0.242 |
| TPSD336*020T0160V | D            | 33                  | 20                      | 85                           | 13                         | 125                             | 6.6                 | 6                 | 160                             | 3   | 0.968                  | 0.871 | 0.387 |
| TPSD336*020T0200V | D            | 33                  | 20                      | 85                           | 13                         | 125                             | 6.6                 | 6                 | 200                             | 3   | 0.866                  | 0.779 | 0.346 |
| TPSD476*020T0200V | D            | 47                  | 20                      | 85                           | 13                         | 125                             | 9.4                 | 6                 | 200                             | 3   | 0.866                  | 0.779 | 0.346 |
| TPSD686*020T0150V | D            | 68                  | 20                      | 85                           | 13                         | 125                             | 13.6                | 6                 | 150                             | 3   | 1.000                  | 0.900 | 0.400 |
| TPSD686*020T0200V | D            | 68                  | 20                      | 85                           | 13                         | 125                             | 13.6                | 6                 | 200                             | 3   | 0.866                  | 0.779 | 0.346 |
| TPSD686*020T0300V | D            | 68                  | 20                      | 85                           | 13                         | 125                             | 13.6                | 6                 | 300                             | 3   | 0.707                  | 0.636 | 0.283 |
| TPSE686*020T0125V | E            | 68                  | 20                      | 85                           | 13                         | 125                             | 13.6                | 6                 | 125                             | 3   | 1.149                  | 1.034 | 0.460 |
| TPSE686*020T0150V | E            | 68                  | 20                      | 85                           | 13                         | 125                             | 13.6                | 6                 | 150                             | 3   | 1.049                  | 0.944 | 0.420 |
| TPSE686*020T0200V | E            | 68                  | 20                      | 85                           | 13                         | 125                             | 13.6                | 6                 | 200                             | 3   | 0.908                  | 0.817 | 0.363 |
| TPSE107*020T0100V | E            | 100                 | 20                      | 85                           | 13                         | 125                             | 20                  | 6                 | 100                             | 3   | 1.285                  | 1.156 | 0.514 |
| TPSE107*020T0150V | E            | 100                 | 20                      | 85                           | 13                         | 125                             | 20                  | 6                 | 150                             | 3   | 1.049                  | 0.944 | 0.420 |
| TPSE107*020T0200V | E            | 100                 | 20                      | 85                           | 13                         | 125                             | 20                  | 6                 | 200                             | 3   | 0.908                  | 0.817 | 0.363 |
| 25 Volt @ 85°C    |              |                     |                         |                              |                            |                                 |                     |                   |                                 |     |                        |       |       |
| TPSA474*025T7000  | A            | 0.47                | 25                      | 85                           | 17                         | 125                             | 0.5                 | 4                 | 7000                            | 1   | 0.104                  | 0.093 | 0.041 |
| TPSA684*025T6000  | A            | 0.68                | 25                      | 85                           | 17                         | 125                             | 0.5                 | 4                 | 6000                            | 1   | 0.112                  | 0.101 | 0.045 |
| TPSA105*025T4000  | A            | 1.0                 | 25                      | 85                           | 17                         | 125                             | 0.5                 | 4                 | 4000                            | 1   | 0.137                  | 0.123 | 0.055 |
| TPSA155*025T3000  | A            | 1.5                 | 25                      | 85                           | 17                         | 125                             | 0.5                 | 6                 | 3000                            | 1   | 0.158                  | 0.142 | 0.063 |
| TPSA225*025T2500  | A            | 2.2                 | 25                      | 85                           | 17                         | 125                             | 0.6                 | 6                 | 2500                            | 1   | 0.173                  | 0.156 | 0.069 |
| TPSB225*025T0900  | B            | 2.2                 | 25                      | 85                           | 17                         | 125                             | 0.6                 | 6                 | 900                             | 1   | 0.307                  | 0.277 | 0.123 |
| TPSB225*025T1200  | B            | 2.2                 | 25                      | 85                           | 17                         | 125                             | 0.6                 | 6                 | 1200                            | 1   | 0.266                  | 0.240 | 0.106 |
| TPSB225*025T2500  | B            | 2.2                 | 25                      | 85                           | 17                         | 125                             | 0.6                 | 6                 | 2500                            | 1   | 0.184                  | 0.166 | 0.074 |
| TPSB335*025T0750  | B            | 3.3                 | 25                      | 85                           | 17                         | 125                             | 0.8                 | 6                 | 750                             | 1   | 0.337                  | 0.303 | 0.135 |
| TPSB335*025T1500  | B            | 3.3                 | 25                      | 85                           | 17                         | 125                             | 0.8                 | 6                 | 1500                            | 1   | 0.238                  | 0.214 | 0.095 |
| TPSB335*025T2000  | B            | 3.3                 | 25                      | 85                           | 17                         | 125                             | 0.8                 | 6                 | 2000                            | 1   | 0.206                  | 0.186 | 0.082 |
| TPSB475*025T0700  | B            | 4.7                 | 25                      | 85                           | 17                         | 125                             | 1.2                 | 6                 | 700                             | 1   | 0.348                  | 0.314 | 0.139 |
| TPSB475*025T0900  | B            | 4.7                 | 25                      | 85                           | 17                         | 125                             | 1.2                 | 6                 | 900                             | 1   | 0.307                  | 0.277 | 0.123 |
| TPSC475*025T0700  | C            | 4.7                 | 25                      | 85                           | 17                         | 125                             | 1.2                 | 6                 | 700                             | 1   | 0.396                  | 0.357 | 0.159 |
| TPSB685*025T0700  | B            | 6.8                 | 25                      | 85                           | 17                         | 125                             | 1.7                 | 6                 | 700                             | 1   | 0.348                  | 0.314 | 0.139 |
| TPSC685*025T0500  | C            | 6.8                 | 25                      | 85                           | 17                         | 125                             | 1.7                 | 6                 | 500                             | 1   | 0.469                  | 0.422 | 0.188 |
| TPSC685*025T0600  | C            | 6.8                 | 25                      | 85                           | 17                         | 125                             | 1.7                 | 6                 | 600                             | 1   | 0.428                  | 0.385 | 0.171 |
| TPSC685*025T0700  | C            | 6.8                 | 25                      | 85                           | 17                         | 125                             | 1.7                 | 6                 | 700                             | 1   | 0.396                  | 0.357 | 0.159 |
| TPSC106*025T0300  | C            | 10                  | 25                      | 85                           | 17                         | 125                             | 2.5                 | 6                 | 300                             | 1   | 0.606                  | 0.545 | 0.242 |
| TPSC106*025T0500  | C            | 10                  | 25                      | 85                           | 17                         | 125                             | 2.5                 | 6                 | 500                             | 1   | 0.469                  | 0.422 | 0.188 |
| TPSD106*025T0500V | D            | 10                  | 25                      | 85                           | 17                         | 125                             | 2.5                 | 6                 | 500                             | 3   | 0.548                  | 0.493 | 0.219 |
| TPSC156*025T0220  | C            | 15                  | 25                      | 85                           | 17                         | 125                             | 3.8                 | 6                 | 220                             | 1   | 0.707                  | 0.636 | 0.283 |
| TPSC156*025T0300  | C            | 15                  | 25                      | 85                           | 17                         | 125                             | 3.8                 | 6                 | 300                             | 1   | 0.606                  | 0.545 | 0.242 |
| TPSD156*025T0300V | D            | 15                  | 25                      | 85                           | 17                         | 125                             | 3.8                 | 6                 | 300                             | 3   | 0.707                  | 0.636 | 0.283 |
| TPSC226*025T0275  | C            | 22                  | 25                      | 85                           | 17                         | 125                             | 5.5                 | 6                 | 275                             | 1   | 0.632                  | 0.569 | 0.253 |
| TPSC226*025T0400  | C            | 22                  | 25                      | 85                           | 17                         | 125                             | 5.5                 | 6                 | 400                             | 1   | 0.524                  | 0.472 | 0.210 |
| TPSD226*025T0200V | D            | 22                  | 25                      | 85                           | 17                         | 125                             | 5.5                 | 6                 | 200                             | 3   | 0.866                  | 0.779 | 0.346 |
| TPSD226*025T0300V | D            | 22                  | 25                      | 85                           | 17                         | 125                             | 5.5                 | 6                 | 300                             | 3   | 0.707                  | 0.636 | 0.283 |
| TPSD336*025T0200V | D            | 33                  | 25                      | 85                           | 17                         | 125                             | 8.3                 | 6                 | 200                             | 3   | 0.866                  | 0.779 | 0.346 |
| TPSD336*025T0300V | D            | 33                  | 25                      | 85                           | 17                         | 125                             | 8.3                 | 6                 | 300                             | 3   | 0.707                  | 0.636 | 0.283 |
| TPSD476*025T0125V | D            | 47                  | 25                      | 85                           | 17                         | 125                             | 11.8                | 6                 | 125                             | 3   | 1.095                  | 0.986 | 0.438 |
| TPSD476*025T0150V | D            | 47                  | 25                      | 85                           | 17                         | 125                             | 11.8                | 6                 | 150                             | 3   | 1.000                  | 0.900 | 0.400 |
| TPSD476*025T0250V | D            | 47                  | 25                      | 85                           | 17                         | 125                             | 11.8                | 6                 | 250                             | 3   | 0.775                  | 0.697 | 0.310 |
| TPSE476*025T0125V | E            | 47                  | 25                      | 85                           | 17                         | 125                             | 11.8                | 6                 | 125                             | 3   | 1.149                  | 1.034 | 0.460 |

# TPS Automotive Range



## Low ESR - Automotive Product Range

### RATINGS & PART NUMBER REFERENCE

| AVX<br>Part No.   | Case<br>Size | Capacitance<br>(µF) | Rated<br>Voltage<br>(V) | Rated<br>Temperature<br>(°C) | Category<br>Voltage<br>(V) | Category<br>Temperature<br>(°C) | DCL<br>Max.<br>(µA) | DF<br>Max.<br>(%) | ESR<br>Max.<br>@ 100kHz<br>(mΩ) | MSL | 100kHz RMS Current (A) |       |       |
|-------------------|--------------|---------------------|-------------------------|------------------------------|----------------------------|---------------------------------|---------------------|-------------------|---------------------------------|-----|------------------------|-------|-------|
|                   |              |                     |                         |                              |                            |                                 |                     |                   |                                 |     | 25°C                   | 85°C  | 125°C |
| 35 Volt @ 85°C    |              |                     |                         |                              |                            |                                 |                     |                   |                                 |     |                        |       |       |
| TPSA334*035T6000  | A            | 0.33                | 35                      | 85                           | 23                         | 125                             | 0.5                 | 4                 | 6000                            | 1   | 0.112                  | 0.101 | 0.045 |
| TPSA474*035T6000  | A            | 0.47                | 35                      | 85                           | 23                         | 125                             | 0.5                 | 4                 | 6000                            | 1   | 0.112                  | 0.101 | 0.045 |
| TPSA684*035T6000  | A            | 0.68                | 35                      | 85                           | 23                         | 125                             | 0.5                 | 4                 | 6000                            | 1   | 0.112                  | 0.101 | 0.045 |
| TPSA105*035T3000  | A            | 1                   | 35                      | 85                           | 23                         | 125                             | 0.5                 | 4                 | 3000                            | 1   | 0.158                  | 0.142 | 0.063 |
| TPSB105*035T2000  | B            | 1                   | 35                      | 85                           | 23                         | 125                             | 0.5                 | 4                 | 2000                            | 1   | 0.206                  | 0.186 | 0.082 |
| TPSA155*035T3000  | A            | 1.5                 | 35                      | 85                           | 23                         | 125                             | 0.5                 | 6                 | 3000                            | 1   | 0.158                  | 0.142 | 0.063 |
| TPSB155*035T2500  | B            | 1.5                 | 35                      | 85                           | 23                         | 125                             | 0.5                 | 6                 | 2500                            | 1   | 0.184                  | 0.166 | 0.074 |
| TPSB225*035T0750  | B            | 2.2                 | 35                      | 85                           | 23                         | 125                             | 0.8                 | 6                 | 750                             | 1   | 0.337                  | 0.303 | 0.135 |
| TPSB225*035T1500  | B            | 2.2                 | 35                      | 85                           | 23                         | 125                             | 0.8                 | 6                 | 1500                            | 1   | 0.238                  | 0.214 | 0.095 |
| TPSB225*035T2000  | B            | 2.2                 | 35                      | 85                           | 23                         | 125                             | 0.8                 | 6                 | 2000                            | 1   | 0.206                  | 0.186 | 0.082 |
| TPSC225*035T1000  | C            | 2.2                 | 35                      | 85                           | 23                         | 125                             | 0.8                 | 6                 | 1000                            | 1   | 0.332                  | 0.298 | 0.133 |
| TPSB335*035T1000  | B            | 3.3                 | 35                      | 85                           | 23                         | 125                             | 1.2                 | 6                 | 1000                            | 1   | 0.292                  | 0.262 | 0.117 |
| TPSC335*035T0700  | C            | 3.3                 | 35                      | 85                           | 23                         | 125                             | 1.2                 | 6                 | 700                             | 1   | 0.396                  | 0.357 | 0.159 |
| TPSB475*035T0700  | B            | 4.7                 | 35                      | 85                           | 23                         | 125                             | 1.6                 | 6                 | 700                             | 1   | 0.348                  | 0.314 | 0.139 |
| TPSB475*035T1500  | B            | 4.7                 | 35                      | 85                           | 23                         | 125                             | 1.6                 | 6                 | 1500                            | 1   | 0.238                  | 0.214 | 0.095 |
| TPSC475*035T0600  | C            | 4.7                 | 35                      | 85                           | 23                         | 125                             | 1.6                 | 6                 | 600                             | 1   | 0.428                  | 0.385 | 0.171 |
| TPSD475*035T0700V | D            | 4.7                 | 35                      | 85                           | 23                         | 125                             | 1.6                 | 6                 | 700                             | 3   | 0.463                  | 0.417 | 0.185 |
| TPSC685*035T0350  | C            | 6.8                 | 35                      | 85                           | 23                         | 125                             | 2.4                 | 6                 | 350                             | 1   | 0.561                  | 0.505 | 0.224 |
| TPSD685*035T0400V | D            | 6.8                 | 35                      | 85                           | 23                         | 125                             | 2.4                 | 6                 | 400                             | 3   | 0.612                  | 0.551 | 0.245 |
| TPSD685*035T0500V | D            | 6.8                 | 35                      | 85                           | 23                         | 125                             | 2.4                 | 6                 | 500                             | 3   | 0.548                  | 0.493 | 0.219 |
| TPSC106*035T0600  | C            | 10                  | 35                      | 85                           | 23                         | 125                             | 3.5                 | 6                 | 600                             | 1   | 0.428                  | 0.385 | 0.171 |
| TPSD106*035T0300V | D            | 10                  | 35                      | 85                           | 23                         | 125                             | 3.5                 | 6                 | 300                             | 3   | 0.707                  | 0.636 | 0.283 |
| TPSD156*035T0300V | D            | 15                  | 35                      | 85                           | 23                         | 125                             | 5.3                 | 6                 | 300                             | 3   | 0.707                  | 0.636 | 0.283 |
| TPSD226*035T0200V | D            | 22                  | 35                      | 85                           | 23                         | 125                             | 7.7                 | 6                 | 200                             | 3   | 0.866                  | 0.779 | 0.346 |
| TPSD226*035T0300V | D            | 22                  | 35                      | 85                           | 23                         | 125                             | 7.7                 | 6                 | 300                             | 3   | 0.707                  | 0.636 | 0.283 |
| TPSD226*035T0400V | D            | 22                  | 35                      | 85                           | 23                         | 125                             | 7.7                 | 6                 | 400                             | 3   | 0.612                  | 0.551 | 0.245 |
| TPSE226*035T0200V | E            | 22                  | 35                      | 85                           | 23                         | 125                             | 7.7                 | 6                 | 200                             | 3   | 0.908                  | 0.817 | 0.363 |
| TPSE226*035T0300V | E            | 22                  | 35                      | 85                           | 23                         | 125                             | 7.7                 | 6                 | 300                             | 3   | 0.742                  | 0.667 | 0.297 |
| TPSE336*035T0250V | E            | 33                  | 35                      | 85                           | 23                         | 125                             | 11.6                | 6                 | 250                             | 3   | 0.812                  | 0.731 | 0.325 |
| TPSE336*035T0300V | E            | 33                  | 35                      | 85                           | 23                         | 125                             | 11.6                | 6                 | 300                             | 3   | 0.742                  | 0.667 | 0.297 |
| 50 Volt @ 85°C    |              |                     |                         |                              |                            |                                 |                     |                   |                                 |     |                        |       |       |
| TPSA224*050T7000  | A            | 0.22                | 50                      | 85                           | 33                         | 125                             | 0.5                 | 4                 | 7000                            | 1   | 0.104                  | 0.093 | 0.041 |
| TPSA334*050T7000  | A            | 0.33                | 50                      | 85                           | 33                         | 125                             | 0.5                 | 4                 | 7000                            | 1   | 0.104                  | 0.093 | 0.041 |
| TPSA474*050T6500  | A            | 0.47                | 50                      | 85                           | 33                         | 125                             | 0.5                 | 4                 | 6500                            | 1   | 0.107                  | 0.097 | 0.043 |
| TPSB474*050T6000  | B            | 0.47                | 50                      | 85                           | 33                         | 125                             | 0.5                 | 4                 | 6000                            | 1   | 0.119                  | 0.107 | 0.048 |
| TPSB684*050T4000  | B            | 0.68                | 50                      | 85                           | 33                         | 125                             | 0.5                 | 4                 | 4000                            | 1   | 0.146                  | 0.131 | 0.058 |
| TPSB105*050T3000  | B            | 1                   | 50                      | 85                           | 33                         | 125                             | 0.5                 | 6                 | 3000                            | 1   | 0.168                  | 0.151 | 0.067 |
| TPSC105*050T2500  | C            | 1                   | 50                      | 85                           | 33                         | 125                             | 0.5                 | 4                 | 2500                            | 1   | 0.210                  | 0.189 | 0.084 |
| TPSC155*050T1500  | C            | 1.5                 | 50                      | 85                           | 33                         | 125                             | 0.8                 | 6                 | 1500                            | 1   | 0.271                  | 0.244 | 0.108 |
| TPSC155*050T2000  | C            | 1.5                 | 50                      | 85                           | 33                         | 125                             | 0.8                 | 6                 | 2000                            | 1   | 0.235                  | 0.211 | 0.094 |
| TPSC225*050T1500  | C            | 2.2                 | 50                      | 85                           | 33                         | 125                             | 1.1                 | 8                 | 1500                            | 1   | 0.271                  | 0.244 | 0.108 |
| TPSD225*050T1200V | D            | 2.2                 | 50                      | 85                           | 33                         | 125                             | 1.1                 | 6                 | 1200                            | 3   | 0.354                  | 0.318 | 0.141 |
| TPSC335*050T1000  | C            | 3.3                 | 50                      | 85                           | 33                         | 125                             | 1.6                 | 6                 | 1000                            | 1   | 0.332                  | 0.298 | 0.133 |
| TPSD335*050T0800V | D            | 3.3                 | 50                      | 85                           | 33                         | 125                             | 1.7                 | 6                 | 800                             | 3   | 0.433                  | 0.390 | 0.173 |
| TPSC475*050T0800  | C            | 4.7                 | 50                      | 85                           | 33                         | 125                             | 2.4                 | 6                 | 800                             | 1   | 0.371                  | 0.334 | 0.148 |
| TPSD475*050T0250V | D            | 4.7                 | 50                      | 85                           | 33                         | 125                             | 2.4                 | 6                 | 250                             | 1   | 0.775                  | 0.697 | 0.310 |
| TPSD475*050T0500V | D            | 4.7                 | 50                      | 85                           | 33                         | 125                             | 2.4                 | 6                 | 500                             | 3   | 0.548                  | 0.493 | 0.219 |
| TPSD475*050T0700V | D            | 4.7                 | 50                      | 85                           | 33                         | 125                             | 2.4                 | 6                 | 700                             | 3   | 0.463                  | 0.417 | 0.185 |
| TPSD685*050T0500V | D            | 6.8                 | 50                      | 85                           | 33                         | 125                             | 3.4                 | 6                 | 500                             | 3   | 0.548                  | 0.493 | 0.219 |
| TPSD685*050T0600V | D            | 6.8                 | 50                      | 85                           | 33                         | 125                             | 3.4                 | 6                 | 600                             | 3   | 0.500                  | 0.450 | 0.200 |
| TPSD106*050T0500V | D            | 10                  | 50                      | 85                           | 33                         | 125                             | 5                   | 6                 | 500                             | 3   | 0.548                  | 0.493 | 0.219 |
| TPSE106*050T0250V | E            | 10                  | 50                      | 85                           | 33                         | 125                             | 5                   | 6                 | 250                             | 3   | 0.812                  | 0.731 | 0.325 |
| TPSE106*050T0300V | E            | 10                  | 50                      | 85                           | 33                         | 125                             | 5                   | 6                 | 300                             | 3   | 0.742                  | 0.667 | 0.297 |
| TPSE106*050T0400V | E            | 10                  | 50                      | 85                           | 33                         | 125                             | 5                   | 6                 | 400                             | 3   | 0.642                  | 0.578 | 0.257 |
| TPSE106*050T0500V | E            | 10                  | 50                      | 85                           | 33                         | 125                             | 5                   | 6                 | 500                             | 3   | 0.574                  | 0.517 | 0.230 |
| TPSE156*050T0250V | E            | 15                  | 50                      | 85                           | 33                         | 125                             | 7.5                 | 6                 | 250                             | 3   | 0.812                  | 0.731 | 0.325 |

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

\*Please use "U" instead of "T" in the suffix letter for 13" reel packaging

Please use specific PN for automotive version – see "HOW TO ORDER".

All technical data relates to an ambient temperature of +25°C. Capacitance and DF are measured at 120Hz, 0.5V RMS with a maximum DC bias of 2.2 volts.

DCL is measured at rated voltage after 5 minutes.

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

For typical weight and composition see page 223.

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

### QUALIFICATION TABLE

| TEST                         | TPS automotive series (Temperature range -55°C to +125°C)                                                                                                                                                                                                                                      |               |               |                    |                              |           |            |            |            |            |
|------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|---------------|--------------------|------------------------------|-----------|------------|------------|------------|------------|
|                              | Condition                                                                                                                                                                                                                                                                                      |               |               | Characteristics    |                              |           |            |            |            |            |
| <b>Endurance</b>             | Determine after application of rated voltage for 2000 +48/-0 hours at 85±2°C and then leaving 1-2 hours at room temperature. Also determine of 125°C temperature, category voltage for 2000 +48/-0 hours and then leaving 1-2 hours at room temperature. Power supply impedance to be ≤0.1Ω/V. |               |               | Visual examination | no visible damage            |           |            |            |            |            |
|                              |                                                                                                                                                                                                                                                                                                |               |               | DCL                | 1.25 x initial limit         |           |            |            |            |            |
|                              |                                                                                                                                                                                                                                                                                                |               |               | ΔC/C               | within ±10% of initial value |           |            |            |            |            |
|                              |                                                                                                                                                                                                                                                                                                |               |               | DF                 | initial limit                |           |            |            |            |            |
|                              |                                                                                                                                                                                                                                                                                                |               |               | ESR                | 1.25 x initial limit         |           |            |            |            |            |
| <b>Storage Life</b>          | 125°C, 0V, 2000h                                                                                                                                                                                                                                                                               |               |               | Visual examination | no visible damage            |           |            |            |            |            |
|                              |                                                                                                                                                                                                                                                                                                |               |               | DCL                | 1.25 x initial limit         |           |            |            |            |            |
|                              |                                                                                                                                                                                                                                                                                                |               |               | ΔC/C               | within ±10% of initial value |           |            |            |            |            |
|                              |                                                                                                                                                                                                                                                                                                |               |               | DF                 | initial limit                |           |            |            |            |            |
|                              |                                                                                                                                                                                                                                                                                                |               |               | ESR                | 1.25 x initial limit         |           |            |            |            |            |
| <b>Humidity</b>              | Determine after storage without applied voltage at 65±2°C and 95±2% relative humidity for 500 hours and then recovery 1-2 hours at room temperature.                                                                                                                                           |               |               | Visual examination | no visible damage            |           |            |            |            |            |
|                              |                                                                                                                                                                                                                                                                                                |               |               | DCL                | 1.5 x initial limit          |           |            |            |            |            |
|                              |                                                                                                                                                                                                                                                                                                |               |               | ΔC/C               | within ±10% of initial value |           |            |            |            |            |
|                              |                                                                                                                                                                                                                                                                                                |               |               | DF                 | 1.2 x initial limit          |           |            |            |            |            |
|                              |                                                                                                                                                                                                                                                                                                |               |               | ESR                | 1.25 x initial limit         |           |            |            |            |            |
| <b>Biased Humidity</b>       | Determine after leaving for 1000 hours at 85±2°C, 85% relative humidity and rated voltage and then recovery 1-2 hours at room temperature.                                                                                                                                                     |               |               | Visual examination | no visible damage            |           |            |            |            |            |
|                              |                                                                                                                                                                                                                                                                                                |               |               | DCL                | 2 x initial limit            |           |            |            |            |            |
|                              |                                                                                                                                                                                                                                                                                                |               |               | ΔC/C               | within ±10% of initial value |           |            |            |            |            |
|                              |                                                                                                                                                                                                                                                                                                |               |               | DF                 | 1.2 x initial limit          |           |            |            |            |            |
|                              |                                                                                                                                                                                                                                                                                                |               |               | ESR                | 1.25 x initial limit         |           |            |            |            |            |
| <b>Temperature Stability</b> | Step                                                                                                                                                                                                                                                                                           | Temperature°C | Duration(min) |                    | +20°C                        | -55°C     | +20°C      | +85°C      | +125°C     | +20°C      |
|                              | 1                                                                                                                                                                                                                                                                                              | +20±2         | 15            | DCL                | IL*                          | n/a       | IL*        | 10 x IL*   | 12.5 x IL* | IL*        |
|                              | 2                                                                                                                                                                                                                                                                                              | -55+0/-3      | 15            | ΔC/C               | n/a                          | +0/-10%   | ±5%        | +10/-0%    | +12/-0%    | ±5%        |
|                              | 3                                                                                                                                                                                                                                                                                              | +20±2         | 15            | DF                 | IL*                          | 1.5 x IL* | IL*        | 1.5 x IL*  | 2 x IL*    | IL*        |
|                              | 4                                                                                                                                                                                                                                                                                              | +85+3/-0      | 15            |                    |                              |           |            |            |            |            |
|                              | 5                                                                                                                                                                                                                                                                                              | +125+3/-0     | 15            |                    |                              |           |            |            |            |            |
|                              | 6                                                                                                                                                                                                                                                                                              | +20±2         | 15            | ESR                | 1.25 x IL*                   | 2.5 x IL* | 1.25 x IL* | 1.25 x IL* | 1.25 x IL* | 1.25 x IL* |
| <b>Surge Voltage</b>         | Test temperature: 125°C±3/0°C<br>Test voltage: Category voltage at 125°C<br>Surge voltage: 1.3 x category voltage at 125°C<br>Series protection resistance 1000±100Ω<br>Discharge resistance: 1000Ω<br>Number of cycles: 1000x<br>Cycle duration: 6 min; 30 sec charge, 5 min 30 sec discharge |               |               | Visual examination | no visible damage            |           |            |            |            |            |
|                              |                                                                                                                                                                                                                                                                                                |               |               | DCL                | initial limit                |           |            |            |            |            |
|                              |                                                                                                                                                                                                                                                                                                |               |               | ΔC/C               | within ±5% of initial value  |           |            |            |            |            |
|                              |                                                                                                                                                                                                                                                                                                |               |               | DF                 | initial limit                |           |            |            |            |            |
|                              |                                                                                                                                                                                                                                                                                                |               |               | ESR                | 1.25 x initial limit         |           |            |            |            |            |

\*Initial Limit



Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



#### Как с нами связаться

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