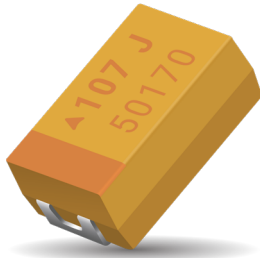


# TPS Series

## Low ESR



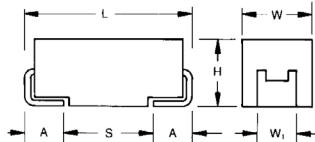
### FEATURES

- Low ESR Series of Robust MnO<sub>2</sub> Solid Electrolyte Capacitors
- 100% Surge Current Tested
- CV Range: 0.15-1500μF / 2.5-50V
- 14 Case Sizes Available
- Power Supply Applications



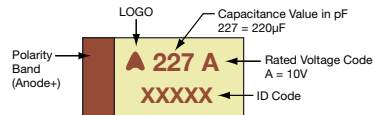
### APPLICATIONS

- General Medium Power DC/DC Convertors

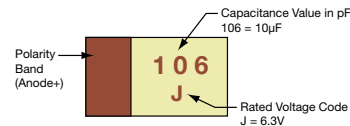


### MARKING

A, B, C, D, E, F, S, T, V, W, X, Y CASE



P, R CASE



### HOW TO ORDER

| TPS  | C                               | 107                                                                                                                                                   | M                                 | 010                                                                                                                                                      | R                                                                                                                                                                                                                                      | 0100      | —                                                                                                                                                         |
|------|---------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| Type | Case Size<br>See table<br>above | Capacitance Code<br>pF code: 1st two<br>digits represent<br>significant figures,<br>3rd digit represents<br>multiplier (number of<br>zeros to follow) | Tolerance<br>K = ±10%<br>M = ±20% | Rated DC Voltage<br>002 = 2.5Vdc<br>004 = 4Vdc<br>006 = 6.3Vdc<br>010 = 10Vdc<br>016 = 16Vdc<br>020 = 20Vdc<br>025 = 25Vdc<br>035 = 35Vdc<br>050 = 50Vdc | Packaging<br>R = Pure Tin 7" Reel<br>S = Pure Tin 13" Reel<br>A = Gold Plating 7" Reel<br>B = Gold Plating 13" Reel<br>H = Tin Lead 7" Reel<br>K = Tin Lead 13" Reel<br>H, K = Non RoHS<br>A, B, H, K = Please<br>Contact Manufacturer | ESR in mΩ | Additional<br>characters may be<br>added for special<br>requirements<br>V = Dry pack Option<br>(selected ratings only,<br>please contact<br>manufacturer) |

### TECHNICAL SPECIFICATIONS

|                                    |                                                                                                 |     |     |     |    |    |    |    |    |    |
|------------------------------------|-------------------------------------------------------------------------------------------------|-----|-----|-----|----|----|----|----|----|----|
| Technical Data:                    | All technical data relate to an ambient temperature of +25°C                                    |     |     |     |    |    |    |    |    |    |
| Capacitance Range:                 | 0.15 μF to 1500 μF                                                                              |     |     |     |    |    |    |    |    |    |
| Capacitance Tolerance:             | ±10%; ±20%                                                                                      |     |     |     |    |    |    |    |    |    |
| Rated Voltage (V <sub>R</sub> )    | ≤ +85°C:                                                                                        | 2.5 | 4   | 6.3 | 10 | 16 | 20 | 25 | 35 | 50 |
| Category Voltage (V <sub>C</sub> ) | ≤ +125°C:                                                                                       | 1.7 | 2.7 | 4   | 7  | 10 | 13 | 17 | 23 | 33 |
| Surge Voltage (V <sub>S</sub> )    | ≤ +85°C:                                                                                        | 3.3 | 5.2 | 8   | 13 | 20 | 26 | 32 | 46 | 65 |
| Surge Voltage (V <sub>S</sub> )    | ≤ +125°C:                                                                                       | 2.2 | 3.4 | 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,<br>60% confidence level |     |     |     |    |    |    |    |    |    |
| Termination Finished:              | Sn Plating (standard), Gold and SnPb Plating upon request                                       |     |     |     |    |    |    |    |    |    |
|                                    | For AEC-Q200 availability, please contact KYOCERA AVX                                           |     |     |     |    |    |    |    |    |    |

# TPS Series

## Low ESR



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

| Capacitance |      | Rated Voltage DC (V <sub>R</sub> ) to 85°C |                                                           |                                                                            |                                                                                                               |                                                                                                 |                                                     |                                                                         |                                                |                                        |
|-------------|------|--------------------------------------------|-----------------------------------------------------------|----------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|-----------------------------------------------------|-------------------------------------------------------------------------|------------------------------------------------|----------------------------------------|
| μF          | Code | 2.5V (e)                                   | 4V (G)                                                    | 6.3V (J)                                                                   | 10V (A)                                                                                                       | 16V (C)                                                                                         | 20V (D)                                             | 25V (E)                                                                 | 35V (V)                                        | 50V (T)                                |
| 0.15        | 154  |                                            |                                                           |                                                                            |                                                                                                               |                                                                                                 |                                                     |                                                                         |                                                | A(9000)                                |
| 0.22        | 224  |                                            |                                                           |                                                                            |                                                                                                               |                                                                                                 |                                                     |                                                                         | A(6000)                                        | A(7000)                                |
| 0.33        | 334  |                                            |                                                           |                                                                            |                                                                                                               |                                                                                                 |                                                     |                                                                         | A(6000)                                        | A(7000)                                |
| 0.47        | 474  |                                            |                                                           |                                                                            |                                                                                                               |                                                                                                 |                                                     | A(7000)                                                                 | A(6000)<br>B(4000)                             | A(6500), B(6000)<br>C(2300)            |
| 0.68        | 684  |                                            |                                                           |                                                                            |                                                                                                               |                                                                                                 |                                                     | A(6000)                                                                 | A(6000)                                        | B(4000)                                |
| 1.0         | 105  |                                            |                                                           |                                                                            | R(9000)                                                                                                       | A(6200)                                                                                         | A(3000), R(6000)<br>S(6000), T(2000)                | A(4000) R(2500,4000)                                                    | A(3000)<br>B(2000)                             | B(3000)<br>C(2500)                     |
| 1.5         | 155  |                                            |                                                           |                                                                            |                                                                                                               |                                                                                                 | A(3000)                                             | A(3000)<br>B(1800)                                                      | A(3000)<br>B(2500)                             | C(1500,2000)                           |
| 2.2         | 225  |                                            |                                                           | R(7000)                                                                    | A(1800)                                                                                                       | A(1800,3500) T(2000)                                                                            | A(3000)<br>B(1700)                                  | A(2500)<br>B(900,1200,2500)                                             | A(1500)<br>B(750,1500, 2000)<br>C(1000)        | C(1500)<br>D(1200)                     |
| 3.3         | 335  |                                            |                                                           | A(2100)                                                                    | T(1500)                                                                                                       | A(3500)<br>B(2500)                                                                              | A(2500)<br>B(1300)                                  | A(1000,1500)<br>B(750,1500,2000)                                        | B(1000)<br>C(700)                              | C(1000)<br>D(800)                      |
| 4.7         | 475  |                                            |                                                           | S(4000)                                                                    | A(1400), B(1400)<br>R(3000,5000)                                                                              | A(2000)<br>B(800,1500)                                                                          | A(1800) B(750,1000)                                 | B(700,900,1500)<br>C(700)                                               | B(700,1500) C(600),<br>D(700)                  | C(800)<br>D(250,300,500,700)<br>X(500) |
| 6.8         | 685  |                                            |                                                           | A(1800)                                                                    | A(1800), B(1300)<br>T(1800)                                                                                   | A(1500)<br>B(600,1200)                                                                          | A(1000) B(600,1000)<br>C(700)                       | B(700) C(500,600,700)                                                   | C(350)<br>D(150,400,500)                       | D(200,300,<br>500,600)                 |
| 10          | 106  |                                            | R(3000)                                                   | A(1500), B(1500)<br>R(1000,1500,3000)<br>T(1000)                           | A(900,1800), B(1000)<br>P(2000) <sup>(M)</sup> , S(900)<br>T(1000,2000)                                       | A(1000), B(500,800)<br>C(500), T(800,1000)<br>W(500,600)                                        | B(500,1000)<br>C(500,700) W(250,<br>500)            | B(1800) C(300,500)<br>D(500)                                            | C(600)<br>D(125,300)<br>E(100,150,200)Y(250)   | D(500)<br>E(250,300, 400,500)          |
| 15          | 156  |                                            |                                                           | A(700,1500)                                                                | A(1000)<br>B(450,600), C(700)<br>T(1200)                                                                      | B(500,800) C(300,700)                                                                           | B(500) C(400,450)                                   | C(220,300) D(100,300)                                                   | C(350,450)<br>D(100,300)<br>Y(250)             | E(250)<br>V(250)                       |
| 22          | 226  |                                            |                                                           | A(300,500,900)<br>B(375,600)<br>C(500), S(900)                             | A(900)<br>B(400,500,700)<br>C(300), T(800)                                                                    | B(400,600)<br>C(150,250,300,375)<br>D(700), W(500)                                              | B(400,600)<br>C(100,150,400)<br>D(200,300)          | C(275,400)<br>D(100,200,300)<br>F(300)                                  | D(125,200,300,400)<br>E(125,200,300)<br>Y(200) |                                        |
| 33          | 336  |                                            |                                                           | A(600)<br>B(250,350,450,600)<br>T(800)                                     | A(700)<br>B(250,425,500,650)<br>C(150,375,500)<br>W(350)                                                      | B(350,500)<br>C(100,150,225,300)<br>D(200), W(140,175,<br>250,400,500)<br>Y(300,400)            | C(300) D(100,200)                                   | C(400) D(100,200,300)<br>E(100,175,200,300)<br>F(150,200,400)<br>Y(200) | D(200,300)<br>E(100,250,300) V(200)            |                                        |
| 47          | 476  |                                            | A(500)                                                    | A(800) B(250,350,500)<br>C(300), T(1200)                                   | B(250,350,500,650)<br>C(200,350)<br>D(100,300)<br>W(125,150,250)                                              | C(110,350)<br>D(80,100,150,200)<br>W(200)<br>X(180), Y(250)                                     | D(75,100,200)<br>E(70,125,150,<br>200,250), X(200)  | D(125,150,250<br>E(80,100,125) (Y250)                                   | D(300), E(200,250)<br>V(150,200)               |                                        |
| 68          | 686  |                                            |                                                           | B(250,350,500)<br>C(150,200)<br>W(110,125,250)                             | B(600)<br>C(80,100,200,300)<br>D(100,150),<br>W(100,150) Y(100,200)                                           | C(125,200)<br>D(70,100,150)<br>F(200), X(150)<br>Y(150,200,250)                                 | D(70,150, 200,300)<br>E(125,150,200)<br>Y(200)      | D(150,200,300)<br>E(125,200)<br>V(80,95,150,200)                        | V(150,200)                                     |                                        |
| 100         | 107  | B(200)                                     | B(200,250,<br>350,500)<br>T(500) <sup>(M)</sup><br>W(100) | B(250,400) C(75,150),<br>D(300) W(100,150),<br>Y(100)                      | B(400)<br>C(75,100,150,200)<br>D(50,65,80,100,125,<br>150), E(125), W(150)<br>X(85,150,200)<br>Y(100,150,200) | C(200)<br>D(60,100,125,150)<br>E(55,100,125,150)<br>F(150,200) <sup>(M)</sup><br>Y(100,150,200) | D(85,100,150)<br>E(100,150,200)<br>V(60,85,100,200) | E(150), V(100)                                                          |                                                |                                        |
| 150         | 157  | B(150)                                     | B(250) C(70,80)                                           | C(50,90,150,200,250)<br>D(50,125)<br>Y(40,50)                              | C(150), D(50,85,100)<br>E(100), F(200)<br>X(100) <sup>(M)</sup><br>Y(100,150,200)                             | D(60,85,100,125,150)<br>E(50,100), V(45,75)<br>Y(200) <sup>(M)</sup>                            | V(80)                                               | V(150) <sup>(M)</sup>                                                   |                                                |                                        |
| 220         | 227  | B(150,<br>200,600)<br>D(45)                | D(40,50,100)<br>Y(40,50,75)                               | C(70,100,125,250)<br>D(50,100,125)<br>E(100), F(200)<br>Y(100,150)         | D(40,50,100,150)<br>E(50,60,70,100,<br>125,150)<br>Y(100,150,200)                                             | D(200) <sup>(M)</sup><br>E(50,100,150)<br>V(50,75,100,150)                                      |                                                     |                                                                         |                                                |                                        |
| 330         | 337  | Y(40)                                      | C(100)<br>D(35,45,100)<br>F(200)<br>X(100)                | C(80,100)<br>D(45,50,70,100)<br>E(50,100,125,150)<br>V(100), Y(75,100,150) | D(50,65,100,150)<br>E(40,50,60,100)<br>V(40,60,100)                                                           | E(200) <sup>(M)</sup>                                                                           |                                                     |                                                                         |                                                |                                        |
| 470         | 477  | D(35)<br>F(200)<br>Y(100)                  | D(45,100)<br>E(35,45,100)                                 | D(45,60,100,200)<br>E(45,50,60,100,200)<br>V(40,55,100), Y(150)            | E(45,50,60,100,200)<br>V(40,60,100)                                                                           |                                                                                                 |                                                     |                                                                         |                                                |                                        |
| 680         | 687  | D(35,50)<br>E(35,50)<br>Y(100)             | D(45,60,100)<br>E(40,60,100)                              | E(45,60,100)<br>V(35,40,50)                                                | E(150) <sup>(M)</sup><br>V(100) <sup>(M)</sup>                                                                |                                                                                                 |                                                     |                                                                         |                                                |                                        |
| 1000        | 108  | E(30,40)<br>Y(100) <sup>(M)</sup>          | E(40,60)<br>V(25,35,40,50)                                | E(100) <sup>(M)</sup> , V(40,50) <sup>(M)</sup>                            |                                                                                                               |                                                                                                 |                                                     |                                                                         |                                                |                                        |
| 1500        | 158  | D(100)<br>E(50)<br>V(30,40) <sup>(M)</sup> | E(50,75)<br>V(50,75) <sup>(M)</sup>                       |                                                                            |                                                                                                               |                                                                                                 |                                                     |                                                                         |                                                |                                        |

Released ratings<sup>(M tolerance only)</sup> (ESR ratings in mOhms in parentheses)

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

## RATINGS &amp; PART NUMBER REFERENCE

| Part Number      | 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) | 100kHz RMS Current (A) |       |       | MSL             |
|------------------|-----------|------------------|-------------------|------------------------|----------------------|---------------------------|---------------|-------------|------------------------|------------------------|-------|-------|-----------------|
|                  |           |                  |                   |                        |                      |                           |               |             |                        | 25°C                   | 85°C  | 125°C |                 |
| 2.5 Volt @ 85°C  |           |                  |                   |                        |                      |                           |               |             |                        |                        |       |       |                 |
| TPSB107*002#0200 | B         | 100              | 2.5               | 85                     | 1.7                  | 125                       | 2.5           | 8           | 200                    | 0.652                  | 0.587 | 0.261 | 1               |
| TPSB157*002#0150 | B         | 150              | 2.5               | 85                     | 1.7                  | 125                       | 3             | 10          | 150                    | 0.753                  | 0.677 | 0.301 | 1               |
| TPSB227*002#0150 | B         | 220              | 2.5               | 85                     | 1.7                  | 125                       | 4.4           | 16          | 150                    | 0.753                  | 0.677 | 0.301 | 1               |
| TPSB227*002#0200 | B         | 220              | 2.5               | 85                     | 1.7                  | 125                       | 4.4           | 16          | 200                    | 0.652                  | 0.587 | 0.261 | 1               |
| TPSB227*002#0600 | B         | 220              | 2.5               | 85                     | 1.7                  | 125                       | 4.4           | 16          | 600                    | 0.376                  | 0.339 | 0.151 | 1               |
| TPSD227*002#0045 | D         | 220              | 2.5               | 85                     | 1.7                  | 125                       | 5.5           | 8           | 45                     | 1.826                  | 1.643 | 0.730 | 1 <sup>1)</sup> |
| TPSY337*002#0040 | Y         | 330              | 2.5               | 85                     | 1.7                  | 125                       | 8.2           | 8           | 40                     | 1.768                  | 1.591 | 0.707 | 1 <sup>1)</sup> |
| TPSD477*002#0035 | D         | 470              | 2.5               | 85                     | 1.7                  | 125                       | 11.6          | 8           | 35                     | 2.070                  | 1.863 | 0.828 | 1 <sup>1)</sup> |
| TPSF477*002#0200 | F         | 470              | 2.5               | 85                     | 1.7                  | 125                       | 11.8          | 12          | 200                    | 0.707                  | 0.636 | 0.283 | 1               |
| TPSY477*002#0100 | Y         | 470              | 2.5               | 85                     | 1.7                  | 125                       | 11            | 12          | 100                    | 1.118                  | 1.006 | 0.447 | 1 <sup>1)</sup> |
| TPSD687*002#0035 | D         | 680              | 2.5               | 85                     | 1.7                  | 125                       | 17            | 16          | 35                     | 2.070                  | 1.863 | 0.828 | 1 <sup>1)</sup> |
| TPSD687*002#0050 | D         | 680              | 2.5               | 85                     | 1.7                  | 125                       | 17            | 16          | 50                     | 1.732                  | 1.559 | 0.693 | 1 <sup>1)</sup> |
| TPSE687*002#0035 | E         | 680              | 2.5               | 85                     | 1.7                  | 125                       | 17            | 10          | 35                     | 2.171                  | 1.954 | 0.868 | 1 <sup>1)</sup> |
| TPSE687*002#0050 | E         | 680              | 2.5               | 85                     | 1.7                  | 125                       | 17            | 10          | 50                     | 1.817                  | 1.635 | 0.727 | 1 <sup>1)</sup> |
| TPSY687*002#0100 | Y         | 680              | 2.5               | 85                     | 1.7                  | 125                       | 17            | 12          | 100                    | 1.118                  | 1.006 | 0.447 | 1 <sup>1)</sup> |
| TPSE108*002#0030 | E         | 1000             | 2.5               | 85                     | 1.7                  | 125                       | 25            | 14          | 30                     | 2.345                  | 2.111 | 0.938 | 1 <sup>1)</sup> |
| TPSE108*002#0040 | E         | 1000             | 2.5               | 85                     | 1.7                  | 125                       | 25            | 14          | 40                     | 2.031                  | 1.828 | 0.812 | 1 <sup>1)</sup> |
| TPSV108M002#0100 | Y         | 1000             | 2.5               | 85                     | 1.7                  | 125                       | 25            | 30          | 100                    | 1.118                  | 1.006 | 0.447 | 1 <sup>1)</sup> |
| TPSD158*002#0100 | D         | 1500             | 2.5               | 85                     | 1.7                  | 125                       | 37.5          | 60          | 100                    | 1.225                  | 1.102 | 0.490 | 1 <sup>1)</sup> |
| TPSE158*002#0050 | E         | 1500             | 2.5               | 85                     | 1.7                  | 125                       | 37.5          | 20          | 50                     | 1.817                  | 1.635 | 0.727 | 1 <sup>1)</sup> |
| TPSV158M002#0030 | V         | 1500             | 2.5               | 85                     | 1.7                  | 125                       | 30            | 20          | 30                     | 2.887                  | 2.598 | 1.155 | 1 <sup>1)</sup> |
| TPSV158M002#0040 | V         | 1500             | 2.5               | 85                     | 1.7                  | 125                       | 30            | 20          | 40                     | 2.500                  | 2.250 | 1.000 | 1 <sup>1)</sup> |
| 4 Volt @ 85°C    |           |                  |                   |                        |                      |                           |               |             |                        |                        |       |       |                 |
| TPSR106*004#3000 | R         | 10               | 4                 | 85                     | 2.7                  | 125                       | 0.5           | 6           | 3000                   | 0.135                  | 0.122 | 0.054 | 1               |
| TPSA476*004#0500 | A         | 47               | 4                 | 85                     | 2.7                  | 125                       | 1.9           | 8           | 500                    | 0.387                  | 0.349 | 0.155 | 1               |
| TPSB107*004#0200 | B         | 100              | 4                 | 85                     | 2.7                  | 125                       | 4             | 8           | 200                    | 0.652                  | 0.587 | 0.261 | 1               |
| TPSB107*004#0250 | B         | 100              | 4                 | 85                     | 2.7                  | 125                       | 4             | 8           | 250                    | 0.583                  | 0.525 | 0.233 | 1               |
| TPSB107*004#0350 | B         | 100              | 4                 | 85                     | 2.7                  | 125                       | 4             | 8           | 350                    | 0.493                  | 0.444 | 0.197 | 1               |
| TPSB107*004#0500 | B         | 100              | 4                 | 85                     | 2.7                  | 125                       | 4             | 8           | 500                    | 0.412                  | 0.371 | 0.165 | 1               |
| TPST107M004#0500 | T         | 100              | 4                 | 85                     | 2.7                  | 125                       | 4             | 14          | 500                    | 0.400                  | 0.360 | 0.160 | 1               |
| TPSW107*004#0100 | W         | 100              | 4                 | 85                     | 2.7                  | 125                       | 4             | 6           | 100                    | 0.949                  | 0.854 | 0.379 | 1               |
| TPSB157*004#0250 | B         | 150              | 4                 | 85                     | 2.7                  | 125                       | 6             | 10          | 250                    | 0.583                  | 0.525 | 0.233 | 1               |
| TPSC157*004#0070 | C         | 150              | 4                 | 85                     | 2.7                  | 125                       | 6             | 6           | 70                     | 1.254                  | 1.128 | 0.501 | 1               |
| TPSC157*004#0080 | C         | 150              | 4                 | 85                     | 2.7                  | 125                       | 6             | 6           | 80                     | 1.173                  | 1.055 | 0.469 | 1               |
| TPSD227*004#0040 | D         | 220              | 4                 | 85                     | 2.7                  | 125                       | 8.8           | 8           | 40                     | 1.936                  | 1.743 | 0.775 | 1 <sup>1)</sup> |
| TPSD227*004#0050 | D         | 220              | 4                 | 85                     | 2.7                  | 125                       | 8.8           | 8           | 50                     | 1.732                  | 1.559 | 0.693 | 1 <sup>1)</sup> |
| TPSD227*004#0100 | D         | 220              | 4                 | 85                     | 2.7                  | 125                       | 8.8           | 8           | 100                    | 1.225                  | 1.102 | 0.490 | 1 <sup>1)</sup> |
| TPSY227*004#0040 | Y         | 220              | 4                 | 85                     | 2.7                  | 125                       | 8.8           | 8           | 40                     | 1.768                  | 1.591 | 0.707 | 1 <sup>1)</sup> |
| TPSY227*004#0050 | Y         | 220              | 4                 | 85                     | 2.7                  | 125                       | 8.8           | 8           | 50                     | 1.581                  | 1.423 | 0.632 | 1 <sup>1)</sup> |
| TPSY227*004#0075 | Y         | 220              | 4                 | 85                     | 2.7                  | 125                       | 8.8           | 8           | 75                     | 1.291                  | 1.162 | 0.516 | 1 <sup>1)</sup> |
| TPSC337*004#0100 | C         | 330              | 4                 | 85                     | 2.7                  | 125                       | 13.2          | 8           | 100                    | 1.049                  | 0.944 | 0.420 | 1               |
| TPSD337*004#0035 | D         | 330              | 4                 | 85                     | 2.7                  | 125                       | 13.2          | 8           | 35                     | 2.070                  | 1.863 | 0.828 | 1 <sup>1)</sup> |
| TPSD337*004#0045 | D         | 330              | 4                 | 85                     | 2.7                  | 125                       | 13.2          | 8           | 45                     | 1.826                  | 1.643 | 0.730 | 1 <sup>1)</sup> |
| TPSD337*004#0100 | D         | 330              | 4                 | 85                     | 2.7                  | 125                       | 13.2          | 8           | 100                    | 1.225                  | 1.102 | 0.490 | 1 <sup>1)</sup> |
| TPSF337*004#0200 | F         | 330              | 4                 | 85                     | 2.7                  | 125                       | 13.2          | 10          | 200                    | 0.707                  | 0.636 | 0.283 | 1               |
| TPSX337*004#0100 | X         | 330              | 4                 | 85                     | 2.7                  | 125                       | 13.2          | 8           | 100                    | 1.000                  | 0.900 | 0.400 | 1 <sup>1)</sup> |
| TPSD477*004#0045 | D         | 470              | 4                 | 85                     | 2.7                  | 125                       | 18.8          | 12          | 45                     | 1.826                  | 1.643 | 0.730 | 1 <sup>1)</sup> |
| TPSD477*004#0100 | D         | 470              | 4                 | 85                     | 2.7                  | 125                       | 18.8          | 12          | 100                    | 1.225                  | 1.102 | 0.490 | 1 <sup>1)</sup> |
| TPSE477*004#0035 | E         | 470              | 4                 | 85                     | 2.7                  | 125                       | 18.8          | 10          | 35                     | 2.171                  | 1.954 | 0.868 | 1 <sup>1)</sup> |
| TPSE477*004#0045 | E         | 470              | 4                 | 85                     | 2.7                  | 125                       | 18.8          | 10          | 45                     | 1.915                  | 1.723 | 0.766 | 1 <sup>1)</sup> |
| TPSE477*004#0100 | E         | 470              | 4                 | 85                     | 2.7                  | 125                       | 18.8          | 10          | 100                    | 1.285                  | 1.156 | 0.514 | 1 <sup>1)</sup> |
| TPSD687*004#0045 | D         | 680              | 4                 | 85                     | 2.7                  | 125                       | 27.2          | 14          | 45                     | 1.826                  | 1.643 | 0.730 | 1 <sup>1)</sup> |
| TPSD687*004#0060 | D         | 680              | 4                 | 85                     | 2.7                  | 125                       | 27.2          | 14          | 60                     | 1.581                  | 1.423 | 0.632 | 1 <sup>1)</sup> |
| TPSD687*004#0100 | D         | 680              | 4                 | 85                     | 2.7                  | 125                       | 27.2          | 14          | 100                    | 1.225                  | 1.102 | 0.490 | 1 <sup>1)</sup> |
| TPSE687*004#0040 | E         | 680              | 4                 | 85                     | 2.7                  | 125                       | 27.2          | 10          | 40                     | 2.031                  | 1.828 | 0.812 | 1 <sup>1)</sup> |
| TPSE687*004#0060 | E         | 680              | 4                 | 85                     | 2.7                  | 125                       | 27.2          | 10          | 60                     | 1.658                  | 1.492 | 0.663 | 1 <sup>1)</sup> |
| TPSE687*004#0100 | E         | 680              | 4                 | 85                     | 2.7                  | 125                       | 27.2          | 10          | 100                    | 1.285                  | 1.156 | 0.514 | 1 <sup>1)</sup> |
| TPSE108*004#0040 | E         | 1000             | 4                 | 85                     | 2.7                  | 125                       | 40            | 14          | 40                     | 2.031                  | 1.828 | 0.812 | 1 <sup>1)</sup> |
| TPSE108*004#0060 | E         | 1000             | 4                 | 85                     | 2.7                  | 125                       | 40            | 14          | 60                     | 1.658                  | 1.492 | 0.663 | 1 <sup>1)</sup> |
| TPSV108*004#0025 | V         | 1000             | 4                 | 85                     | 2.7                  | 125                       | 40            | 16          | 25                     | 3.162                  | 2.846 | 1.265 | 1 <sup>1)</sup> |
| TPSV108*004#0035 | V         | 1000             | 4                 | 85                     | 2.7                  | 125                       | 40            | 16          | 35                     | 2.673                  | 2.405 | 1.069 | 1 <sup>1)</sup> |
| TPSV108*004#0040 | V         | 1000             | 4                 | 85                     | 2.7                  | 125                       | 40            | 16          | 40                     | 2.500                  | 2.250 | 1.000 | 1 <sup>1)</sup> |
| TPSV108*004#0050 | V         | 1000             | 4                 | 85                     | 2.7                  | 125                       | 40            | 16          | 50                     | 2.236                  | 2.012 | 0.894 | 1 <sup>1)</sup> |
| TPSE158*004#0050 | E         | 1500             | 4                 | 85                     | 2.7                  | 125                       | 60            | 30          | 50                     | 1.817                  | 1.635 | 0.727 | 1 <sup>1)</sup> |
| TPSE158*004#0075 | E         | 1500             | 4                 | 85                     | 2.7                  | 125                       | 60            | 30          | 75                     | 1.483                  | 1.335 | 0.593 | 1 <sup>1)</sup> |
| TPSV158M004#0050 | V         | 1500             | 4                 | 85                     | 2.7                  | 125                       | 60            | 30          | 50                     | 2.236                  | 2.012 | 0.894 | 1 <sup>1)</sup> |
| TPSV158M004#0075 | V         | 1500             | 4                 | 85                     | 2.7                  | 125                       | 60            | 30          | 75                     | 1.826                  | 1.643 | 0.730 | 1 <sup>1)</sup> |
| 6.3 Volt @ 85°C  |           |                  |                   |                        |                      |                           |               |             |                        |                        |       |       |                 |
| TPSR225*006#7000 | R         | 2.2              | 6.3               | 85                     | 4                    | 125                       | 0.5           | 6           | 7000                   | 0.089                  | 0.080 | 0.035 | 1               |
| TPSA335*006#2100 | A         | 3.3              | 6.3               | 85                     | 4                    | 125                       | 0.5           | 6           | 2100                   | 0.189                  | 0.170 | 0.076 | 1               |
| TPSA475*006#4000 | S         | 4.7              | 6.3               | 85                     | 4                    | 125                       | 0.5           | 6           | 4000                   | 0.127                  | 0.115 | 0.051 | 1               |
| TPSA685*006#1800 | A         | 6.8              | 6.3               | 85                     | 4                    | 125                       | 0.5           | 6           | 1800                   | 0.204                  | 0.184 | 0.082 | 1               |
| TPSA106*006#1500 | A         | 10               | 6.3               | 85                     | 4                    | 125                       | 0.6           | 6           | 1500                   | 0.224                  | 0.201 | 0.089 | 1               |
| TPSB106*006#1500 | B         | 10               | 6.3               | 85                     | 4                    | 125                       | 0.6           | 6           | 1500                   | 0.238                  | 0.214 | 0.095 | 1               |
| TPSR106*006#1000 | R         | 10               | 6.3               | 85                     | 4                    | 125                       | 0.6           | 8           | 1000                   | 0.235                  | 0.211 | 0.094 | 1               |
| TPSR106*006#1500 | R         | 10               | 6.3               | 85                     | 4                    | 125                       | 0.6           | 8           | 1500                   | 0.191                  | 0.172 | 0.077 | 1               |
| TPSR106*006#3000 | R         | 10               | 6.3               | 85                     | 4                    | 125                       | 0.6           | 8           | 3000                   | 0.135                  | 0.122 | 0.054 | 1               |
| TPST106*006#1000 | T         | 10               | 6.3               | 85                     | 4                    | 125                       | 0.6           | 6           | 1000                   | 0.283                  | 0.255 | 0.113 | 1               |
| TPSA156*006#0700 | A         | 15               | 6.3               | 85                     | 4                    | 125                       | 0.9           | 6           | 700                    | 0.327                  | 0.295 | 0.131 | 1               |
| TPSA156*006#1500 | A         | 15               | 6.3               | 85                     | 4                    | 125                       | 0.9           | 6           | 1500                   | 0.224                  | 0.201 | 0.089 | 1               |
| TPSA226*006#0300 | A         | 22               | 6.3               | 85                     | 4                    | 125                       | 1.4           | 6           | 300                    | 0.500                  | 0.450 | 0.200 | 1               |

# TPS Series

## Low ESR



### RATINGS & PART NUMBER REFERENCE

| Part Number      | 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) | 100kHz RMS Current (A) |       |       | MSL             |
|------------------|-----------|------------------|-------------------|------------------------|----------------------|---------------------------|---------------|-------------|------------------------|------------------------|-------|-------|-----------------|
|                  |           |                  |                   |                        |                      |                           |               |             |                        | 25°C                   | 85°C  | 125°C |                 |
| TPSA226*006#0500 | A         | 22               | 6.3               | 85                     | 4                    | 125                       | 1.4           | 6           | 500                    | 0.387                  | 0.349 | 0.155 | 1               |
| TPSA226*006#0900 | A         | 22               | 6.3               | 85                     | 4                    | 125                       | 1.4           | 6           | 900                    | 0.289                  | 0.260 | 0.115 | 1               |
| TPSB226*006#0375 | B         | 22               | 6.3               | 85                     | 4                    | 125                       | 1.4           | 6           | 375                    | 0.476                  | 0.428 | 0.190 | 1               |
| TPSB226*006#0600 | B         | 22               | 6.3               | 85                     | 4                    | 125                       | 1.4           | 6           | 600                    | 0.376                  | 0.339 | 0.151 | 1               |
| TPSC226*006#0500 | C         | 22               | 6.3               | 85                     | 4                    | 125                       | 1.4           | 6           | 500                    | 0.469                  | 0.422 | 0.188 | 1               |
| TPSS226*006#0900 | S         | 22               | 6.3               | 85                     | 4                    | 125                       | 1.3           | 10          | 900                    | 0.269                  | 0.242 | 0.107 | 1               |
| TPSA336*006#0600 | A         | 33               | 6.3               | 85                     | 4                    | 125                       | 2.1           | 8           | 600                    | 0.354                  | 0.318 | 0.141 | 1               |
| TPSB336*006#0250 | B         | 33               | 6.3               | 85                     | 4                    | 125                       | 2.1           | 6           | 250                    | 0.583                  | 0.525 | 0.233 | 1               |
| TPSB336*006#0350 | B         | 33               | 6.3               | 85                     | 4                    | 125                       | 2.1           | 6           | 350                    | 0.493                  | 0.444 | 0.197 | 1               |
| TPSB336*006#0450 | B         | 33               | 6.3               | 85                     | 4                    | 125                       | 2.1           | 6           | 450                    | 0.435                  | 0.391 | 0.174 | 1               |
| TPSB336*006#0600 | B         | 33               | 6.3               | 85                     | 4                    | 125                       | 2.1           | 6           | 600                    | 0.376                  | 0.339 | 0.151 | 1               |
| TPST336*006#0800 | T         | 33               | 6.3               | 85                     | 4                    | 125                       | 2.1           | 10          | 800                    | 0.316                  | 0.285 | 0.126 | 1               |
| TPSA476*006#0800 | A         | 47               | 6.3               | 85                     | 4                    | 125                       | 2.8           | 10          | 800                    | 0.306                  | 0.276 | 0.122 | 1               |
| TPSB476*006#0250 | B         | 47               | 6.3               | 85                     | 4                    | 125                       | 3             | 6           | 250                    | 0.583                  | 0.525 | 0.233 | 1               |
| TPSB476*006#0350 | B         | 47               | 6.3               | 85                     | 4                    | 125                       | 3             | 6           | 350                    | 0.493                  | 0.444 | 0.197 | 1               |
| TPSB476*006#0500 | B         | 47               | 6.3               | 85                     | 4                    | 125                       | 3             | 6           | 500                    | 0.412                  | 0.371 | 0.165 | 1               |
| TPSC476*006#0300 | C         | 47               | 6.3               | 85                     | 4                    | 125                       | 3             | 6           | 300                    | 0.606                  | 0.545 | 0.242 | 1               |
| TPST476*006#1200 | T         | 47               | 6.3               | 85                     | 4                    | 125                       | 2.8           | 10          | 1200                   | 0.258                  | 0.232 | 0.103 | 1               |
| TPSB686*006#0250 | B         | 68               | 6.3               | 85                     | 4                    | 125                       | 4             | 8           | 250                    | 0.583                  | 0.525 | 0.233 | 1               |
| TPSB686*006#0350 | B         | 68               | 6.3               | 85                     | 4                    | 125                       | 4             | 8           | 350                    | 0.493                  | 0.444 | 0.197 | 1               |
| TPSB686*006#0500 | B         | 68               | 6.3               | 85                     | 4                    | 125                       | 4             | 8           | 500                    | 0.412                  | 0.371 | 0.165 | 1               |
| TPSC686*006#0150 | C         | 68               | 6.3               | 85                     | 4                    | 125                       | 4.3           | 6           | 150                    | 0.856                  | 0.771 | 0.343 | 1               |
| TPSC686*006#0200 | C         | 68               | 6.3               | 85                     | 4                    | 125                       | 4.3           | 6           | 200                    | 0.742                  | 0.667 | 0.297 | 1               |
| TPSW686*006#0110 | W         | 68               | 6.3               | 85                     | 4                    | 125                       | 4.3           | 6           | 110                    | 0.905                  | 0.814 | 0.362 | 1               |
| TPSW686*006#0125 | W         | 68               | 6.3               | 85                     | 4                    | 125                       | 4.3           | 6           | 125                    | 0.849                  | 0.764 | 0.339 | 1               |
| TPSW686*006#0250 | W         | 68               | 6.3               | 85                     | 4                    | 125                       | 4.3           | 6           | 250                    | 0.600                  | 0.540 | 0.240 | 1               |
| TPSB107*006#0250 | B         | 100              | 6.3               | 85                     | 4                    | 125                       | 6.3           | 10          | 250                    | 0.583                  | 0.525 | 0.233 | 1               |
| TPSB107*006#0400 | B         | 100              | 6.3               | 85                     | 4                    | 125                       | 6.3           | 10          | 400                    | 0.461                  | 0.415 | 0.184 | 1               |
| TPSC107*006#0075 | C         | 100              | 6.3               | 85                     | 4                    | 125                       | 6.3           | 6           | 75                     | 1.211                  | 1.090 | 0.484 | 1               |
| TPSC107*006#0150 | C         | 100              | 6.3               | 85                     | 4                    | 125                       | 6.3           | 6           | 150                    | 0.856                  | 0.771 | 0.343 | 1               |
| TPSD107*006#0300 | D         | 100              | 6.3               | 85                     | 4                    | 125                       | 6.3           | 6           | 300                    | 0.707                  | 0.636 | 0.283 | 1 <sup>1)</sup> |
| TPSW107*006#0100 | W         | 100              | 6.3               | 85                     | 4                    | 125                       | 6.3           | 6           | 100                    | 0.949                  | 0.854 | 0.379 | 1               |
| TPSW107*006#0150 | W         | 100              | 6.3               | 85                     | 4                    | 125                       | 6.3           | 6           | 150                    | 0.775                  | 0.697 | 0.310 | 1               |
| TPSY107*006#0100 | Y         | 100              | 6.3               | 85                     | 4                    | 125                       | 6.3           | 6           | 100                    | 1.118                  | 1.006 | 0.447 | 1 <sup>1)</sup> |
| TPSC157*006#0050 | C         | 150              | 6.3               | 85                     | 4                    | 125                       | 9.5           | 6           | 50                     | 1.483                  | 1.335 | 0.593 | 1               |
| TPSC157*006#0090 | C         | 150              | 6.3               | 85                     | 4                    | 125                       | 9.5           | 6           | 90                     | 1.106                  | 0.995 | 0.442 | 1               |
| TPSC157*006#0150 | C         | 150              | 6.3               | 85                     | 4                    | 125                       | 9.5           | 6           | 150                    | 0.856                  | 0.771 | 0.343 | 1               |
| TPSC157*006#0200 | C         | 150              | 6.3               | 85                     | 4                    | 125                       | 9.5           | 6           | 200                    | 0.742                  | 0.667 | 0.297 | 1               |
| TPSC157*006#0250 | C         | 150              | 6.3               | 85                     | 4                    | 125                       | 9.5           | 6           | 250                    | 0.663                  | 0.597 | 0.265 | 1               |
| TPSD157*006#0050 | D         | 150              | 6.3               | 85                     | 4                    | 125                       | 9.5           | 6           | 50                     | 1.732                  | 1.559 | 0.693 | 1 <sup>1)</sup> |
| TPSD157*006#0125 | D         | 150              | 6.3               | 85                     | 4                    | 125                       | 9.5           | 6           | 125                    | 1.095                  | 0.986 | 0.438 | 1 <sup>1)</sup> |
| TPSY157*006#0040 | Y         | 150              | 6.3               | 85                     | 4                    | 125                       | 9.5           | 6           | 40                     | 1.768                  | 1.591 | 0.707 | 1 <sup>1)</sup> |
| TPSY157*006#0050 | Y         | 150              | 6.3               | 85                     | 4                    | 125                       | 9.5           | 6           | 50                     | 1.581                  | 1.423 | 0.632 | 1 <sup>1)</sup> |
| TPSC227*006#0070 | C         | 220              | 6.3               | 85                     | 4                    | 125                       | 13.9          | 8           | 70                     | 1.254                  | 1.128 | 0.501 | 1               |
| TPSC227*006#0100 | C         | 220              | 6.3               | 85                     | 4                    | 125                       | 13.9          | 8           | 100                    | 1.049                  | 0.944 | 0.420 | 1               |
| TPSC227*006#0125 | C         | 220              | 6.3               | 85                     | 4                    | 125                       | 13.9          | 8           | 125                    | 0.938                  | 0.844 | 0.375 | 1               |
| TPSC227*006#0250 | C         | 220              | 6.3               | 85                     | 4                    | 125                       | 13.9          | 8           | 250                    | 0.663                  | 0.597 | 0.265 | 1               |
| TPSD227*006#0050 | D         | 220              | 6.3               | 85                     | 4                    | 125                       | 13.9          | 8           | 50                     | 1.732                  | 1.559 | 0.693 | 1 <sup>1)</sup> |
| TPSD227*006#0100 | D         | 220              | 6.3               | 85                     | 4                    | 125                       | 13.9          | 8           | 100                    | 1.225                  | 1.102 | 0.490 | 1 <sup>1)</sup> |
| TPSD227*006#0125 | D         | 220              | 6.3               | 85                     | 4                    | 125                       | 13.9          | 8           | 125                    | 1.095                  | 0.986 | 0.438 | 1 <sup>1)</sup> |
| TPSE227*006#0100 | E         | 220              | 6.3               | 85                     | 4                    | 125                       | 13.9          | 8           | 100                    | 1.285                  | 1.156 | 0.514 | 1 <sup>1)</sup> |
| TPSF227*006#0200 | F         | 220              | 6.3               | 85                     | 4                    | 125                       | 13.2          | 10          | 200                    | 0.707                  | 0.636 | 0.283 | 1               |
| TPSY227*006#0100 | Y         | 220              | 6.3               | 85                     | 4                    | 125                       | 13.9          | 8           | 100                    | 1.118                  | 1.006 | 0.447 | 1 <sup>1)</sup> |
| TPSY227*006#0150 | Y         | 220              | 6.3               | 85                     | 4                    | 125                       | 13.9          | 8           | 150                    | 0.913                  | 0.822 | 0.365 | 1 <sup>1)</sup> |
| TPSC337*006#0080 | C         | 330              | 6.3               | 85                     | 4                    | 125                       | 19.8          | 12          | 80                     | 1.173                  | 1.055 | 0.469 | 1               |
| TPSC337*006#0100 | C         | 330              | 6.3               | 85                     | 4                    | 125                       | 19.8          | 12          | 100                    | 1.049                  | 0.944 | 0.420 | 1               |
| TPSD337*006#0045 | D         | 330              | 6.3               | 85                     | 4                    | 125                       | 20.8          | 8           | 45                     | 1.826                  | 1.643 | 0.730 | 1 <sup>1)</sup> |
| TPSD337*006#0050 | D         | 330              | 6.3               | 85                     | 4                    | 125                       | 20.8          | 8           | 50                     | 1.732                  | 1.559 | 0.693 | 1 <sup>1)</sup> |
| TPSD337*006#0070 | D         | 330              | 6.3               | 85                     | 4                    | 125                       | 20.8          | 8           | 70                     | 1.464                  | 1.317 | 0.586 | 1 <sup>1)</sup> |
| TPSD337*006#0100 | D         | 330              | 6.3               | 85                     | 4                    | 125                       | 20.8          | 8           | 100                    | 1.225                  | 1.102 | 0.490 | 1 <sup>1)</sup> |
| TPSE337*006#0050 | E         | 330              | 6.3               | 85                     | 4                    | 125                       | 20.8          | 8           | 50                     | 1.817                  | 1.635 | 0.727 | 1 <sup>1)</sup> |
| TPSE337*006#0100 | E         | 330              | 6.3               | 85                     | 4                    | 125                       | 20.8          | 8           | 100                    | 1.285                  | 1.156 | 0.514 | 1 <sup>1)</sup> |
| TPSE337*006#0125 | E         | 330              | 6.3               | 85                     | 4                    | 125                       | 20.8          | 8           | 125                    | 1.149                  | 1.034 | 0.460 | 1 <sup>1)</sup> |
| TPSE337*006#0150 | E         | 330              | 6.3               | 85                     | 4                    | 125                       | 20.8          | 8           | 150                    | 1.049                  | 0.944 | 0.420 | 1 <sup>1)</sup> |
| TPSV337*006#0100 | V         | 330              | 6.3               | 85                     | 4                    | 125                       | 20.8          | 8           | 100                    | 1.581                  | 1.423 | 0.632 | 1 <sup>1)</sup> |
| TPSY337*006#0075 | Y         | 330              | 6.3               | 85                     | 4                    | 125                       | 20.8          | 12          | 75                     | 1.291                  | 1.162 | 0.516 | 1 <sup>1)</sup> |
| TPSY337*006#0100 | Y         | 330              | 6.3               | 85                     | 4                    | 125                       | 20.8          | 12          | 100                    | 1.118                  | 1.006 | 0.447 | 1 <sup>1)</sup> |
| TPSY337*006#0150 | Y         | 330              | 6.3               | 85                     | 4                    | 125                       | 20.8          | 12          | 150                    | 0.913                  | 0.822 | 0.365 | 1 <sup>1)</sup> |
| TPSD477*006#0045 | D         | 470              | 6.3               | 85                     | 4                    | 125                       | 28            | 12          | 45                     | 1.826                  | 1.643 | 0.730 | 1 <sup>1)</sup> |
| TPSD477*006#0060 | D         | 470              | 6.3               | 85                     | 4                    | 125                       | 28            | 12          | 60                     | 1.581                  | 1.423 | 0.632 | 1 <sup>1)</sup> |
| TPSD477*006#0100 | D         | 470              | 6.3               | 85                     | 4                    | 125                       | 28            | 12          | 100                    | 1.225                  | 1.102 | 0.490 | 1 <sup>1)</sup> |
| TPSD477*006#0200 | D         | 470              | 6.3               | 85                     | 4                    | 125                       | 28            | 12          | 200                    | 0.866                  | 0.779 | 0.346 | 1 <sup>1)</sup> |
| TPSE477*006#0045 | E         | 470              | 6.3               | 85                     | 4                    | 125                       | 28            | 10          | 45                     | 1.915                  | 1.723 | 0.766 | 1 <sup>1)</sup> |
| TPSE477*006#0050 | E         | 470              | 6.3               | 85                     | 4                    | 125                       | 28            | 10          | 50                     | 1.817                  | 1.635 | 0.727 | 1 <sup>1)</sup> |
| TPSE477*006#0060 | E         | 470              | 6.3               | 85                     | 4                    | 125                       | 28            | 10          | 60                     | 1.658                  | 1.492 | 0.663 | 1 <sup>1)</sup> |
| TPSE477*006#0100 | E         | 470              | 6.3               | 85                     | 4                    | 125                       | 28            | 10          | 100                    | 1.285                  | 1.156 | 0.514 | 1 <sup>1)</sup> |
| TPSE477*006#0200 | E         | 470              | 6.3               | 85                     | 4                    | 125                       | 28            | 10          | 200                    | 0.908                  | 0.817 | 0.363 | 1 <sup>1)</sup> |
| TPSV477*006#0040 | V         | 470              | 6.3               | 85                     | 4                    | 125                       | 28            | 10          | 40                     | 2.500                  | 2.250 | 1.000 | 1 <sup>1)</sup> |
| TPSV477*006#0055 | V         | 470              | 6.3               | 85                     | 4                    | 125                       | 28            | 10          | 55                     | 2.132                  | 1.919 | 0.853 | 1 <sup>1)</sup> |
| TPSV477*006#0100 | V         | 470              | 6.3               | 85                     | 4                    | 125                       | 28            | 10          | 100                    | 1.581                  | 1.423 | 0.632 | 1 <sup>1)</sup> |
| TPSY477*006#0150 | Y         | 470              | 6.3               | 85                     | 4                    | 125                       | 28.2          | 20          | 150                    | 0.913                  | 0.822 | 0.365 | 1 <sup>1)</sup> |
| TPSE687*006#0045 | E         | 680              | 6.3               | 85                     | 4                    | 125                       | 42.8          | 10          | 45                     | 1.915                  | 1.723 | 0.766 | 1 <sup>1)</sup> |
| TPSE687*006#0060 | E         | 680              | 6.3               | 85                     | 4                    | 125                       | 42.8          | 10          | 60                     | 1.658                  | 1.492 | 0.663 | 1 <sup>1)</sup> |
| TPSE687*006#0100 | E         | 680              | 6.3               | 85                     | 4                    | 125                       | 42.8          | 10          | 100                    | 1.285                  | 1.156 | 0.514 | 1 <sup>1)</sup> |



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TDS-PTNO-0040 | Rev 2

– POLYMER, TANTALUM AND NIOBIUM OXIDE CAPACITORS –

### RATINGS & PART NUMBER REFERENCE

| Part Number      | 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) | 100kHz RMS Current (A) |       |       | MSL             |
|------------------|-----------|------------------|-------------------|------------------------|----------------------|---------------------------|---------------|-------------|------------------------|------------------------|-------|-------|-----------------|
|                  |           |                  |                   |                        |                      |                           |               |             |                        | 25°C                   | 85°C  | 125°C |                 |
| TPSV687*006#0035 | V         | 680              | 6.3               | 85                     | 4                    | 125                       | 42.8          | 10          | 35                     | 2.673                  | 2.405 | 1.069 | 1 <sup>1)</sup> |
| TPSV687*006#0040 | V         | 680              | 6.3               | 85                     | 4                    | 125                       | 42.8          | 10          | 40                     | 2.500                  | 2.250 | 1.000 | 1 <sup>1)</sup> |
| TPSV687*006#0050 | V         | 680              | 6.3               | 85                     | 4                    | 125                       | 42.8          | 10          | 50                     | 2.236                  | 2.012 | 0.894 | 1 <sup>1)</sup> |
| TPSE108M006#0100 | E         | 1000             | 6.3               | 85                     | 4                    | 125                       | 60            | 20          | 100                    | 1.285                  | 1.156 | 0.514 | 1 <sup>1)</sup> |
| TPSV108M006#0040 | V         | 1000             | 6.3               | 85                     | 4                    | 125                       | 60            | 16          | 40                     | 2.500                  | 2.250 | 1.000 | 1 <sup>1)</sup> |
| TPSV108M006#0050 | V         | 1000             | 6.3               | 85                     | 4                    | 125                       | 60            | 16          | 50                     | 2.236                  | 2.012 | 0.894 | 1 <sup>1)</sup> |
| 10 Volt @ 85°C   |           |                  |                   |                        |                      |                           |               |             |                        |                        |       |       |                 |
| TPSR105*010#9000 | R         | 1                | 10                | 85                     | 7                    | 125                       | 0.5           | 4           | 9000                   | 0.078                  | 0.070 | 0.031 | 1               |
| TPSA225*010#1800 | A         | 2.2              | 10                | 85                     | 7                    | 125                       | 0.5           | 6           | 1800                   | 0.204                  | 0.184 | 0.082 | 1               |
| TPST335*010#1500 | T         | 3.3              | 10                | 85                     | 7                    | 125                       | 0.5           | 6           | 1500                   | 0.231                  | 0.208 | 0.092 | 1               |
| TPSA475*010#1400 | A         | 4.7              | 10                | 85                     | 7                    | 125                       | 0.5           | 6           | 1400                   | 0.231                  | 0.208 | 0.093 | 1               |
| TPSB475*010#1400 | B         | 4.7              | 10                | 85                     | 7                    | 125                       | 0.5           | 6           | 1400                   | 0.246                  | 0.222 | 0.099 | 1               |
| TPSR475*010#3000 | R         | 4.7              | 10                | 85                     | 7                    | 125                       | 0.5           | 6           | 3000                   | 0.135                  | 0.122 | 0.054 | 1               |
| TPSR475*010#5000 | R         | 4.7              | 10                | 85                     | 7                    | 125                       | 0.5           | 6           | 5000                   | 0.105                  | 0.094 | 0.042 | 1               |
| TPSA685*010#1800 | A         | 6.8              | 10                | 85                     | 7                    | 125                       | 0.7           | 6           | 1800                   | 0.204                  | 0.184 | 0.082 | 1               |
| TPSB685*010#1300 | B         | 6.8              | 10                | 85                     | 7                    | 125                       | 0.7           | 6           | 1300                   | 0.256                  | 0.230 | 0.102 | 1               |
| TPST685*010#1800 | T         | 6.8              | 10                | 85                     | 7                    | 125                       | 0.7           | 6           | 1800                   | 0.211                  | 0.190 | 0.084 | 1               |
| TPSA106*010#0900 | A         | 10               | 10                | 85                     | 7                    | 125                       | 1             | 6           | 900                    | 0.289                  | 0.260 | 0.115 | 1               |
| TPSA106*010#1800 | A         | 10               | 10                | 85                     | 7                    | 125                       | 1             | 6           | 1800                   | 0.204                  | 0.184 | 0.082 | 1               |
| TPSB106*010#1000 | B         | 10               | 10                | 85                     | 7                    | 125                       | 1             | 6           | 1000                   | 0.292                  | 0.262 | 0.117 | 1               |
| TPSP106M010#2000 | P         | 10               | 10                | 85                     | 7                    | 125                       | 1             | 8           | 2000                   | 0.173                  | 0.156 | 0.069 | 1               |
| TPSS106*010#0900 | S         | 10               | 10                | 85                     | 7                    | 125                       | 1             | 8           | 900                    | 0.269                  | 0.242 | 0.107 | 1               |
| TPST106*010#1000 | T         | 10               | 10                | 85                     | 7                    | 125                       | 1             | 6           | 1000                   | 0.283                  | 0.255 | 0.113 | 1               |
| TPST106*010#2000 | T         | 10               | 10                | 85                     | 7                    | 125                       | 1             | 6           | 2000                   | 0.200                  | 0.180 | 0.080 | 1               |
| TPSA156*010#1000 | A         | 15               | 10                | 85                     | 7                    | 125                       | 1.5           | 6           | 1000                   | 0.274                  | 0.246 | 0.110 | 1               |
| TPSB156*010#0450 | B         | 15               | 10                | 85                     | 7                    | 125                       | 1.5           | 6           | 450                    | 0.435                  | 0.391 | 0.174 | 1               |
| TPSB156*010#0600 | B         | 15               | 10                | 85                     | 7                    | 125                       | 1.5           | 6           | 600                    | 0.376                  | 0.339 | 0.151 | 1               |
| TPSC156*010#0700 | C         | 15               | 10                | 85                     | 7                    | 125                       | 1.5           | 6           | 700                    | 0.396                  | 0.357 | 0.159 | 1               |
| TPST156*010#1200 | T         | 15               | 10                | 85                     | 7                    | 125                       | 1.5           | 8           | 1200                   | 0.258                  | 0.232 | 0.103 | 1               |
| TPSA226*010#0900 | A         | 22               | 10                | 85                     | 7                    | 125                       | 2.2           | 8           | 900                    | 0.289                  | 0.260 | 0.115 | 1               |
| TPSB226*010#0400 | B         | 22               | 10                | 85                     | 7                    | 125                       | 2.2           | 6           | 400                    | 0.461                  | 0.415 | 0.184 | 1               |
| TPSB226*010#0500 | B         | 22               | 10                | 85                     | 7                    | 125                       | 2.2           | 6           | 500                    | 0.412                  | 0.371 | 0.165 | 1               |
| TPSB226*010#0700 | B         | 22               | 10                | 85                     | 7                    | 125                       | 2.2           | 6           | 700                    | 0.348                  | 0.314 | 0.139 | 1               |
| TPSC226*010#0300 | C         | 22               | 10                | 85                     | 7                    | 125                       | 2.2           | 6           | 300                    | 0.606                  | 0.545 | 0.242 | 1               |
| TPST226*010#0800 | T         | 22               | 10                | 85                     | 7                    | 125                       | 2.2           | 8           | 800                    | 0.316                  | 0.285 | 0.126 | 1               |
| TPSA336*010#0700 | A         | 33               | 10                | 85                     | 7                    | 125                       | 3.3           | 8           | 700                    | 0.327                  | 0.295 | 0.131 | 1               |
| TPSB336*010#0250 | B         | 33               | 10                | 85                     | 7                    | 125                       | 3.3           | 6           | 250                    | 0.583                  | 0.525 | 0.233 | 1               |
| TPSB336*010#0425 | B         | 33               | 10                | 85                     | 7                    | 125                       | 3.3           | 6           | 425                    | 0.447                  | 0.402 | 0.179 | 1               |
| TPSB336*010#0500 | B         | 33               | 10                | 85                     | 7                    | 125                       | 3.3           | 6           | 500                    | 0.412                  | 0.371 | 0.165 | 1               |
| TPSB336*010#0650 | B         | 33               | 10                | 85                     | 7                    | 125                       | 3.3           | 6           | 650                    | 0.362                  | 0.325 | 0.145 | 1               |
| TPSC336*010#0150 | C         | 33               | 10                | 85                     | 7                    | 125                       | 3.3           | 6           | 150                    | 0.856                  | 0.771 | 0.343 | 1               |
| TPSC336*010#0375 | C         | 33               | 10                | 85                     | 7                    | 125                       | 3.3           | 6           | 375                    | 0.542                  | 0.487 | 0.217 | 1               |
| TPSC336*010#0500 | C         | 33               | 10                | 85                     | 7                    | 125                       | 3.3           | 6           | 500                    | 0.469                  | 0.422 | 0.188 | 1               |
| TPSW336*010#0350 | W         | 33               | 10                | 85                     | 7                    | 125                       | 3.3           | 6           | 350                    | 0.507                  | 0.456 | 0.203 | 1               |
| TPSB476*010#0250 | B         | 47               | 10                | 85                     | 7                    | 125                       | 4.7           | 8           | 250                    | 0.583                  | 0.525 | 0.233 | 1               |
| TPSB476*010#0350 | B         | 47               | 10                | 85                     | 7                    | 125                       | 4.7           | 8           | 350                    | 0.493                  | 0.444 | 0.197 | 1               |
| TPSB476*010#0500 | B         | 47               | 10                | 85                     | 7                    | 125                       | 4.7           | 8           | 500                    | 0.412                  | 0.371 | 0.165 | 1               |
| TPSB476*010#0650 | B         | 47               | 10                | 85                     | 7                    | 125                       | 4.7           | 8           | 650                    | 0.362                  | 0.325 | 0.145 | 1               |
| TPSC476*010#0200 | C         | 47               | 10                | 85                     | 7                    | 125                       | 4.7           | 6           | 200                    | 0.742                  | 0.667 | 0.297 | 1               |
| TPSC476*010#0350 | C         | 47               | 10                | 85                     | 7                    | 125                       | 4.7           | 6           | 350                    | 0.561                  | 0.505 | 0.224 | 1               |
| TPSD476*010#0100 | D         | 47               | 10                | 85                     | 7                    | 125                       | 4.7           | 6           | 100                    | 1.225                  | 1.102 | 0.490 | 1 <sup>1)</sup> |
| TPSD476*010#0300 | D         | 47               | 10                | 85                     | 7                    | 125                       | 4.7           | 6           | 300                    | 0.707                  | 0.636 | 0.283 | 1 <sup>1)</sup> |
| TPSW476*010#0125 | W         | 47               | 10                | 85                     | 7                    | 125                       | 4.7           | 6           | 125                    | 0.849                  | 0.764 | 0.339 | 1               |
| TPSW476*010#0150 | W         | 47               | 10                | 85                     | 7                    | 125                       | 4.7           | 6           | 150                    | 0.775                  | 0.697 | 0.310 | 1               |
| TPSW476*010#0250 | W         | 47               | 10                | 85                     | 7                    | 125                       | 4.7           | 6           | 250                    | 0.600                  | 0.540 | 0.240 | 1               |
| TPSB686*010#0600 | B         | 68               | 10                | 85                     | 7                    | 125                       | 6.8           | 8           | 600                    | 0.376                  | 0.339 | 0.151 | 1               |
| TPSC686*010#0080 | C         | 68               | 10                | 85                     | 7                    | 125                       | 6.8           | 6           | 80                     | 1.173                  | 1.055 | 0.469 | 1               |
| TPSC686*010#0100 | C         | 68               | 10                | 85                     | 7                    | 125                       | 6.8           | 6           | 100                    | 1.049                  | 0.944 | 0.420 | 1               |
| TPSC686*010#0200 | C         | 68               | 10                | 85                     | 7                    | 125                       | 6.8           | 6           | 200                    | 0.742                  | 0.667 | 0.297 | 1               |
| TPSC686*010#0300 | C         | 68               | 10                | 85                     | 7                    | 125                       | 6.8           | 6           | 300                    | 0.606                  | 0.545 | 0.242 | 1               |
| TPSD686*010#0100 | D         | 68               | 10                | 85                     | 7                    | 125                       | 6.8           | 6           | 100                    | 1.225                  | 1.102 | 0.490 | 1 <sup>1)</sup> |
| TPSD686*010#0150 | D         | 68               | 10                | 85                     | 7                    | 125                       | 6.8           | 6           | 150                    | 1.000                  | 0.900 | 0.400 | 1 <sup>1)</sup> |
| TPSY686*010#0100 | Y         | 68               | 10                | 85                     | 7                    | 125                       | 6.8           | 6           | 100                    | 1.118                  | 1.006 | 0.447 | 1 <sup>1)</sup> |
| TPSY686*010#0200 | Y         | 68               | 10                | 85                     | 7                    | 125                       | 6.8           | 6           | 200                    | 0.791                  | 0.712 | 0.316 | 1 <sup>1)</sup> |
| TPSW686*010#0100 | W         | 68               | 10                | 85                     | 7                    | 125                       | 6.8           | 6           | 100                    | 0.949                  | 0.854 | 0.379 | 1               |
| TPSW686*010#0150 | W         | 68               | 10                | 85                     | 7                    | 125                       | 6.8           | 6           | 150                    | 0.775                  | 0.697 | 0.310 | 1               |
| TPSB107*010#0400 | B         | 100              | 10                | 85                     | 7                    | 125                       | 10            | 8           | 400                    | 0.461                  | 0.415 | 0.184 | 1               |
| TPSC107*010#0075 | C         | 100              | 10                | 85                     | 7                    | 125                       | 10            | 8           | 75                     | 1.211                  | 1.090 | 0.484 | 1               |
| TPSC107*010#0100 | C         | 100              | 10                | 85                     | 7                    | 125                       | 10            | 8           | 100                    | 1.049                  | 0.944 | 0.420 | 1               |
| TPSC107*010#0150 | C         | 100              | 10                | 85                     | 7                    | 125                       | 10            | 8           | 150                    | 0.856                  | 0.771 | 0.343 | 1               |
| TPSC107*010#0200 | C         | 100              | 10                | 85                     | 7                    | 125                       | 10            | 8           | 200                    | 0.742                  | 0.667 | 0.297 | 1               |
| TPSD107*010#0050 | D         | 100              | 10                | 85                     | 7                    | 125                       | 10            | 6           | 50                     | 1.732                  | 1.559 | 0.693 | 1 <sup>1)</sup> |
| TPSD107*010#0065 | D         | 100              | 10                | 85                     | 7                    | 125                       | 10            | 6           | 65                     | 1.519                  | 1.367 | 0.608 | 1 <sup>1)</sup> |
| TPSD107*010#0080 | D         | 100              | 10                | 85                     | 7                    | 125                       | 10            | 6           | 80                     | 1.369                  | 1.232 | 0.548 | 1 <sup>1)</sup> |
| TPSD107*010#0100 | D         | 100              | 10                | 85                     | 7                    | 125                       | 10            | 6           | 100                    | 1.225                  | 1.102 | 0.490 | 1 <sup>1)</sup> |
| TPSD107*010#0125 | D         | 100              | 10                | 85                     | 7                    | 125                       | 10            | 6           | 125                    | 1.095                  | 0.986 | 0.438 | 1 <sup>1)</sup> |
| TPSD107*010#0150 | D         | 100              | 10                | 85                     | 7                    | 125                       | 10            | 6           | 150                    | 1.000                  | 0.900 | 0.400 | 1 <sup>1)</sup> |
| TPSE107*010#0125 | E         | 100              | 10                | 85                     | 7                    | 125                       | 10            | 6           | 125                    | 1.149                  | 1.034 | 0.460 | 1 <sup>1)</sup> |
| TPSW107*010#0150 | W         | 100              | 10                | 85                     | 7                    | 125                       | 10            | 6           | 150                    | 0.775                  | 0.697 | 0.310 | 1               |
| TPSX107*010#0085 | X         | 100              | 10                | 85                     | 7                    | 125                       | 10            | 8           | 85                     | 1.085                  | 0.976 | 0.434 | 1 <sup>1)</sup> |
| TPSX107*010#0150 | X         | 100              | 10                | 85                     | 7                    | 125                       | 10            | 8           | 150                    | 0.816                  | 0.735 | 0.327 | 1 <sup>1)</sup> |
| TPSX107*010#0200 | X         | 100              | 10                | 85                     | 7                    | 125                       | 10            | 8           | 200                    | 0.707                  | 0.636 | 0.283 | 1 <sup>1)</sup> |
| TPSY107*010#0100 | Y         | 100              | 10                | 85                     | 7                    | 125                       | 10            | 6           | 100                    | 1.118                  | 1.006 | 0.447 | 1 <sup>1)</sup> |

# TPS Series

## Low ESR



### RATINGS & PART NUMBER REFERENCE

| Part Number       | 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) | 100kHz RMS Current (A) |       |       | MSL             |
|-------------------|-----------|------------------|-------------------|------------------------|----------------------|---------------------------|---------------|-------------|------------------------|------------------------|-------|-------|-----------------|
|                   |           |                  |                   |                        |                      |                           |               |             |                        | 25°C                   | 85°C  | 125°C |                 |
| TPSY107*010#0150  | Y         | 100              | 10                | 85                     | 7                    | 125                       | 10            | 6           | 150                    | 0.913                  | 0.822 | 0.365 | 1 <sup>1)</sup> |
| TPSY107*010#0200  | Y         | 100              | 10                | 85                     | 7                    | 125                       | 10            | 6           | 200                    | 0.791                  | 0.712 | 0.316 | 1 <sup>1)</sup> |
| TPSC157*010#0150  | C         | 150              | 10                | 85                     | 7                    | 125                       | 15            | 8           | 150                    | 0.856                  | 0.771 | 0.343 | 1               |
| TPSD157*010#0050  | D         | 150              | 10                | 85                     | 7                    | 125                       | 15            | 8           | 50                     | 1.732                  | 1.559 | 0.693 | 1 <sup>1)</sup> |
| TPSD157*010#0085  | D         | 150              | 10                | 85                     | 7                    | 125                       | 15            | 8           | 85                     | 1.328                  | 1.196 | 0.531 | 1 <sup>1)</sup> |
| TPSD157*010#0100  | D         | 150              | 10                | 85                     | 7                    | 125                       | 15            | 8           | 100                    | 1.225                  | 1.102 | 0.490 | 1 <sup>1)</sup> |
| TPSE157*010#0100  | E         | 150              | 10                | 85                     | 7                    | 125                       | 15            | 8           | 100                    | 1.285                  | 1.156 | 0.514 | 1 <sup>1)</sup> |
| TPSF157*010#0200  | F         | 150              | 10                | 85                     | 7                    | 125                       | 15            | 10          | 200                    | 0.707                  | 0.636 | 0.283 | 1               |
| TPSX157*010#0100  | X         | 150              | 10                | 85                     | 7                    | 125                       | 15            | 6           | 100                    | 1.000                  | 0.900 | 0.400 | 1 <sup>1)</sup> |
| TPSY157*010#0100  | Y         | 150              | 10                | 85                     | 7                    | 125                       | 15            | 6           | 100                    | 1.118                  | 1.006 | 0.447 | 1 <sup>1)</sup> |
| TPSY157*010#0150  | Y         | 150              | 10                | 85                     | 7                    | 125                       | 15            | 6           | 150                    | 0.913                  | 0.822 | 0.365 | 1 <sup>1)</sup> |
| TPSY157*010#0200  | Y         | 150              | 10                | 85                     | 7                    | 125                       | 15            | 6           | 200                    | 0.791                  | 0.712 | 0.316 | 1 <sup>1)</sup> |
| TPSD227*010#0040  | D         | 220              | 10                | 85                     | 7                    | 125                       | 22            | 8           | 40                     | 1.936                  | 1.743 | 0.775 | 1 <sup>1)</sup> |
| TPSD227*010#0050  | D         | 220              | 10                | 85                     | 7                    | 125                       | 22            | 8           | 50                     | 1.732                  | 1.559 | 0.693 | 1 <sup>1)</sup> |
| TPSD227*010#0100  | D         | 220              | 10                | 85                     | 7                    | 125                       | 22            | 8           | 100                    | 1.225                  | 1.102 | 0.490 | 1 <sup>1)</sup> |
| TPSD227*010#0150  | D         | 220              | 10                | 85                     | 7                    | 125                       | 22            | 8           | 150                    | 1.000                  | 0.900 | 0.400 | 1 <sup>1)</sup> |
| TPSE227*010#0050  | E         | 220              | 10                | 85                     | 7                    | 125                       | 22            | 8           | 50                     | 1.817                  | 1.635 | 0.727 | 1 <sup>1)</sup> |
| TPSE227*010#0060  | E         | 220              | 10                | 85                     | 7                    | 125                       | 22            | 8           | 60                     | 1.658                  | 1.492 | 0.663 | 1 <sup>1)</sup> |
| TPSE227*010#0070  | E         | 220              | 10                | 85                     | 7                    | 125                       | 22            | 8           | 70                     | 1.535                  | 1.382 | 0.614 | 1 <sup>1)</sup> |
| TPSE227*010#0100  | E         | 220              | 10                | 85                     | 7                    | 125                       | 22            | 8           | 100                    | 1.285                  | 1.156 | 0.514 | 1 <sup>1)</sup> |
| TPSE227*010#0125  | E         | 220              | 10                | 85                     | 7                    | 125                       | 22            | 8           | 125                    | 1.149                  | 1.034 | 0.460 | 1 <sup>1)</sup> |
| TPSE227*010#0150  | E         | 220              | 10                | 85                     | 7                    | 125                       | 22            | 8           | 150                    | 1.049                  | 0.944 | 0.420 | 1 <sup>1)</sup> |
| TPSY227*010#0100  | Y         | 220              | 10                | 85                     | 7                    | 125                       | 22            | 10          | 100                    | 1.118                  | 1.006 | 0.447 | 1 <sup>1)</sup> |
| TPSY227*010#0150  | Y         | 220              | 10                | 85                     | 7                    | 125                       | 22            | 10          | 150                    | 0.913                  | 0.822 | 0.365 | 1 <sup>1)</sup> |
| TPSY227*010#0200  | Y         | 220              | 10                | 85                     | 7                    | 125                       | 22            | 10          | 200                    | 0.791                  | 0.712 | 0.316 | 1 <sup>1)</sup> |
| TPSD337*010#0050  | D         | 330              | 10                | 85                     | 7                    | 125                       | 33            | 8           | 50                     | 1.732                  | 1.559 | 0.693 | 1 <sup>1)</sup> |
| TPSD337*010#0065  | D         | 330              | 10                | 85                     | 7                    | 125                       | 33            | 8           | 65                     | 1.519                  | 1.367 | 0.608 | 1 <sup>1)</sup> |
| TPSD337*010#0100  | D         | 330              | 10                | 85                     | 7                    | 125                       | 33            | 8           | 100                    | 1.225                  | 1.102 | 0.490 | 1 <sup>1)</sup> |
| TPSD337*010#0150  | D         | 330              | 10                | 85                     | 7                    | 125                       | 33            | 8           | 150                    | 1.000                  | 0.900 | 0.400 | 1 <sup>1)</sup> |
| TPSE337*010#0040  | E         | 330              | 10                | 85                     | 7                    | 125                       | 33            | 8           | 40                     | 2.031                  | 1.828 | 0.812 | 1 <sup>1)</sup> |
| TPSE337*010#0050  | E         | 330              | 10                | 85                     | 7                    | 125                       | 33            | 8           | 50                     | 1.817                  | 1.635 | 0.727 | 1 <sup>1)</sup> |
| TPSE337*010#0060  | E         | 330              | 10                | 85                     | 7                    | 125                       | 33            | 8           | 60                     | 1.658                  | 1.492 | 0.663 | 1 <sup>1)</sup> |
| TPSE337*010#0100  | E         | 330              | 10                | 85                     | 7                    | 125                       | 33            | 8           | 100                    | 1.285                  | 1.156 | 0.514 | 1 <sup>1)</sup> |
| TPSV337*010#0040  | V         | 330              | 10                | 85                     | 7                    | 125                       | 33            | 10          | 40                     | 2.500                  | 2.250 | 1.000 | 1 <sup>1)</sup> |
| TPSV337*010#0060  | V         | 330              | 10                | 85                     | 7                    | 125                       | 33            | 10          | 60                     | 2.041                  | 1.837 | 0.816 | 1 <sup>1)</sup> |
| TPSV337*010#0100  | V         | 330              | 10                | 85                     | 7                    | 125                       | 33            | 10          | 100                    | 1.581                  | 1.423 | 0.632 | 1 <sup>1)</sup> |
| TPSE477*010#0045  | E         | 470              | 10                | 85                     | 7                    | 125                       | 47            | 10          | 45                     | 1.915                  | 1.723 | 0.766 | 1 <sup>1)</sup> |
| TPSE477*010#0050  | E         | 470              | 10                | 85                     | 7                    | 125                       | 47            | 10          | 50                     | 1.817                  | 1.635 | 0.727 | 1 <sup>1)</sup> |
| TPSE477*010#0060  | E         | 470              | 10                | 85                     | 7                    | 125                       | 47            | 10          | 60                     | 1.658                  | 1.492 | 0.663 | 1 <sup>1)</sup> |
| TPSE477*010#0100  | E         | 470              | 10                | 85                     | 7                    | 125                       | 47            | 10          | 100                    | 1.285                  | 1.156 | 0.514 | 1 <sup>1)</sup> |
| TPSE477*010#0200  | E         | 470              | 10                | 85                     | 7                    | 125                       | 47            | 10          | 200                    | 0.908                  | 0.817 | 0.363 | 1 <sup>1)</sup> |
| TPSV477*010#0040  | V         | 470              | 10                | 85                     | 7                    | 125                       | 47            | 10          | 40                     | 2.500                  | 2.250 | 1.000 | 1 <sup>1)</sup> |
| TPSV477*010#0060  | V         | 470              | 10                | 85                     | 7                    | 125                       | 47            | 10          | 60                     | 2.041                  | 1.837 | 0.816 | 1 <sup>1)</sup> |
| TPSV477*010#0100  | V         | 470              | 10                | 85                     | 7                    | 125                       | 47            | 10          | 100                    | 1.581                  | 1.423 | 0.632 | 1 <sup>1)</sup> |
| TPSE687*010#0150V | E         | 680              | 10                | 85                     | 7                    | 125                       | 68            | 18          | 150                    | 1.049                  | 0.944 | 0.420 | 3               |
| TPSV687*010#0100V | V         | 680              | 10                | 85                     | 7                    | 125                       | 68            | 18          | 100                    | 1.581                  | 1.423 | 0.632 | 3               |
| 16 Volt @ 85°C    |           |                  |                   |                        |                      |                           |               |             |                        |                        |       |       |                 |
| TPSA105*016#6200  | A         | 1                | 16                | 85                     | 10                   | 125                       | 0.5           | 4           | 6200                   | 0.110                  | 0.099 | 0.044 | 1               |
| TPSA225*016#1800  | A         | 2.2              | 16                | 85                     | 10                   | 125                       | 0.5           | 6           | 1800                   | 0.204                  | 0.184 | 0.082 | 1               |
| TPSA225*016#3500  | A         | 2.2              | 16                | 85                     | 10                   | 125                       | 0.5           | 6           | 3500                   | 0.146                  | 0.132 | 0.059 | 1               |
| TPST225*016#2000  | T         | 2.2              | 16                | 85                     | 10                   | 125                       | 0.5           | 6           | 2000                   | 0.200                  | 0.180 | 0.080 | 1               |
| TPSA335*016#3500  | A         | 3.3              | 16                | 85                     | 10                   | 125                       | 0.5           | 6           | 3500                   | 0.146                  | 0.132 | 0.059 | 1               |
| TPSB335*016#2500  | B         | 3.3              | 16                | 85                     | 10                   | 125                       | 0.5           | 6           | 2500                   | 0.184                  | 0.166 | 0.074 | 1               |
| TPSA475*016#2000  | A         | 4.7              | 16                | 85                     | 10                   | 125                       | 0.8           | 6           | 2000                   | 0.194                  | 0.174 | 0.077 | 1               |
| TPSB475*016#0800  | B         | 4.7              | 16                | 85                     | 10                   | 125                       | 0.8           | 6           | 800                    | 0.326                  | 0.293 | 0.130 | 1               |
| TPSB475*016#1500  | B         | 4.7              | 16                | 85                     | 10                   | 125                       | 0.8           | 6           | 1500                   | 0.238                  | 0.214 | 0.095 | 1               |
| TPSA685*016#1500  | A         | 6.8              | 16                | 85                     | 10                   | 125                       | 1.1           | 6           | 1500                   | 0.224                  | 0.201 | 0.089 | 1               |
| TPSB685*016#0600  | B         | 6.8              | 16                | 85                     | 10                   | 125                       | 1.1           | 6           | 600                    | 0.376                  | 0.339 | 0.151 | 1               |
| TPSB685*016#1200  | B         | 6.8              | 16                | 85                     | 10                   | 125                       | 1.1           | 6           | 1200                   | 0.266                  | 0.240 | 0.106 | 1               |
| TPSA106*016#1000  | A         | 10               | 16                | 85                     | 10                   | 125                       | 1.6           | 6           | 1000                   | 0.274                  | 0.246 | 0.110 | 1               |
| TPSB106*016#0500  | B         | 10               | 16                | 85                     | 10                   | 125                       | 1.6           | 6           | 500                    | 0.412                  | 0.371 | 0.165 | 1               |
| TPSB106*016#0800  | B         | 10               | 16                | 85                     | 10                   | 125                       | 1.6           | 6           | 800                    | 0.326                  | 0.293 | 0.130 | 1               |
| TPSC106*016#0500  | C         | 10               | 16                | 85                     | 10                   | 125                       | 1.6           | 6           | 500                    | 0.469                  | 0.422 | 0.188 | 1               |
| TPST106*016#0800  | T         | 10               | 16                | 85                     | 10                   | 125                       | 1.6           | 8           | 800                    | 0.316                  | 0.285 | 0.126 | 1               |
| TPST106*016#1000  | T         | 10               | 16                | 85                     | 10                   | 125                       | 1.6           | 8           | 1000                   | 0.283                  | 0.255 | 0.113 | 1               |
| TPSW106*016#0500  | W         | 10               | 16                | 85                     | 10                   | 125                       | 1.6           | 6           | 500                    | 0.424                  | 0.382 | 0.170 | 1               |
| TPSW106*016#0600  | W         | 10               | 16                | 85                     | 10                   | 125                       | 1.6           | 6           | 600                    | 0.387                  | 0.349 | 0.155 | 1               |
| TPSB156*016#0500  | B         | 15               | 16                | 85                     | 10                   | 125                       | 2.4           | 6           | 500                    | 0.412                  | 0.371 | 0.165 | 1               |
| TPSB156*016#0800  | B         | 15               | 16                | 85                     | 10                   | 125                       | 2.4           | 6           | 800                    | 0.326                  | 0.293 | 0.130 | 1               |
| TPSC156*016#0300  | C         | 15               | 16                | 85                     | 10                   | 125                       | 2.4           | 6           | 300                    | 0.606                  | 0.545 | 0.242 | 1               |
| TPSC156*016#0700  | C         | 15               | 16                | 85                     | 10                   | 125                       | 2.4           | 6           | 700                    | 0.396                  | 0.357 | 0.159 | 1               |
| TPSB226*016#0400  | B         | 22               | 16                | 85                     | 10                   | 125                       | 3.5           | 6           | 400                    | 0.461                  | 0.415 | 0.184 | 1               |
| TPSB226*016#0600  | B         | 22               | 16                | 85                     | 10                   | 125                       | 3.5           | 6           | 600                    | 0.376                  | 0.339 | 0.151 | 1               |
| TPSC226*016#0150  | C         | 22               | 16                | 85                     | 10                   | 125                       | 3.5           | 6           | 150                    | 0.856                  | 0.771 | 0.343 | 1               |
| TPSC226*016#0250  | C         | 22               | 16                | 85                     | 10                   | 125                       | 3.5           | 6           | 250                    | 0.663                  | 0.597 | 0.265 | 1               |
| TPSC226*016#0300  | C         | 22               | 16                | 85                     | 10                   | 125                       | 3.5           | 6           | 300                    | 0.606                  | 0.545 | 0.242 | 1               |
| TPSC226*016#0375  | C         | 22               | 16                | 85                     | 10                   | 125                       | 3.5           | 6           | 375                    | 0.542                  | 0.487 | 0.217 | 1               |
| TPSD226*016#0700  | D         | 22               | 16                | 85                     | 10                   | 125                       | 3.5           | 6           | 700                    | 0.463                  | 0.417 | 0.185 | 1 <sup>1)</sup> |
| TPSW226*016#0500  | W         | 22               | 16                | 85                     | 10                   | 125                       | 3.5           | 6           | 500                    | 0.424                  | 0.382 | 0.170 | 1               |
| TPSB336*016#0350  | B         | 33               | 16                | 85                     | 10                   | 125                       | 5.3           | 8           | 350                    | 0.493                  | 0.444 | 0.197 | 1               |
| TPSB336*016#0500  | B         | 33               | 16                | 85                     | 10                   | 125                       | 5.3           | 8           | 500                    | 0.412                  | 0.371 | 0.165 | 1               |
| TPSC336*016#0100  | C         | 33               | 16                | 85                     | 10                   | 125                       | 5.3           | 6           | 100                    | 1.049                  | 0.944 | 0.420 | 1               |
| TPSC336*016#0150  | C         | 33               | 16                | 85                     | 10                   | 125                       | 5.3           | 6           | 150                    | 0.856                  | 0.771 | 0.343 | 1               |

## RATINGS &amp; PART NUMBER REFERENCE

| Part Number       | 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) | 100kHz RMS Current (A) |       |       | MSL             |
|-------------------|-----------|------------------|-------------------|------------------------|----------------------|---------------------------|---------------|-------------|------------------------|------------------------|-------|-------|-----------------|
|                   |           |                  |                   |                        |                      |                           |               |             |                        | 25°C                   | 85°C  | 125°C |                 |
| TPSC336*016#0225  | C         | 33               | 16                | 85                     | 10                   | 125                       | 5.3           | 6           | 225                    | 0.699                  | 0.629 | 0.280 | 1               |
| TPSC336*016#0300  | C         | 33               | 16                | 85                     | 10                   | 125                       | 5.3           | 6           | 300                    | 0.606                  | 0.545 | 0.242 | 1               |
| TPSD336*016#0200  | D         | 33               | 16                | 85                     | 10                   | 125                       | 5.3           | 6           | 200                    | 0.866                  | 0.779 | 0.346 | 1 <sup>1)</sup> |
| TPSW336*016#0140  | W         | 33               | 16                | 85                     | 10                   | 125                       | 5.3           | 6           | 140                    | 0.802                  | 0.722 | 0.321 | 1               |
| TPSW336*016#0175  | W         | 33               | 16                | 85                     | 10                   | 125                       | 5.3           | 6           | 175                    | 0.717                  | 0.645 | 0.287 | 1               |
| TPSW336*016#0250  | W         | 33               | 16                | 85                     | 10                   | 125                       | 5.3           | 6           | 250                    | 0.600                  | 0.540 | 0.240 | 1               |
| TPSW336*016#0400  | W         | 33               | 16                | 85                     | 10                   | 125                       | 5.3           | 6           | 400                    | 0.474                  | 0.427 | 0.190 | 1               |
| TPSW336*016#0500  | W         | 33               | 16                | 85                     | 10                   | 125                       | 5.3           | 6           | 500                    | 0.424                  | 0.382 | 0.170 | 1               |
| TPSY336*016#0300  | Y         | 33               | 16                | 85                     | 10                   | 125                       | 5.3           | 6           | 300                    | 0.645                  | 0.581 | 0.258 | 1 <sup>1)</sup> |
| TPSY336*016#0400  | Y         | 33               | 16                | 85                     | 10                   | 125                       | 5.3           | 6           | 400                    | 0.559                  | 0.503 | 0.224 | 1 <sup>1)</sup> |
| TPSC476*016#0110  | C         | 47               | 16                | 85                     | 10                   | 125                       | 7.5           | 6           | 110                    | 1.000                  | 0.900 | 0.400 | 1               |
| TPSC476*016#0350  | C         | 47               | 16                | 85                     | 10                   | 125                       | 7.5           | 6           | 350                    | 0.561                  | 0.505 | 0.224 | 1               |
| TPSD476*016#0080  | D         | 47               | 16                | 85                     | 10                   | 125                       | 7.5           | 6           | 80                     | 1.369                  | 1.232 | 0.548 | 1 <sup>1)</sup> |
| TPSD476*016#0100  | D         | 47               | 16                | 85                     | 10                   | 125                       | 7.5           | 6           | 100                    | 1.225                  | 1.102 | 0.490 | 1 <sup>1)</sup> |
| TPSD476*016#0150  | D         | 47               | 16                | 85                     | 10                   | 125                       | 7.5           | 6           | 150                    | 1.000                  | 0.900 | 0.400 | 1 <sup>1)</sup> |
| TPSD476*016#0200  | D         | 47               | 16                | 85                     | 10                   | 125                       | 7.5           | 6           | 200                    | 0.866                  | 0.779 | 0.346 | 1 <sup>1)</sup> |
| TPSW476*016#0200  | W         | 47               | 16                | 85                     | 10                   | 125                       | 7.5           | 6           | 200                    | 0.671                  | 0.604 | 0.268 | 1               |
| TPSX476*016#0180  | X         | 47               | 16                | 85                     | 10                   | 125                       | 7.5           | 6           | 180                    | 0.745                  | 0.671 | 0.298 | 1 <sup>1)</sup> |
| TPSY476*016#0250  | Y         | 47               | 16                | 85                     | 10                   | 125                       | 7.5           | 6           | 250                    | 0.707                  | 0.636 | 0.283 | 1 <sup>1)</sup> |
| TPSC686*016#0125  | C         | 68               | 16                | 85                     | 10                   | 125                       | 10.9          | 6           | 125                    | 0.938                  | 0.844 | 0.375 | 1               |
| TPSC686*016#0200  | C         | 68               | 16                | 85                     | 10                   | 125                       | 10.9          | 6           | 200                    | 0.742                  | 0.667 | 0.297 | 1               |
| TPSD686*016#0070  | D         | 68               | 16                | 85                     | 10                   | 125                       | 10.9          | 6           | 70                     | 1.464                  | 1.317 | 0.586 | 1 <sup>1)</sup> |
| TPSD686*016#0100  | D         | 68               | 16                | 85                     | 10                   | 125                       | 10.9          | 6           | 100                    | 1.225                  | 1.102 | 0.490 | 1 <sup>1)</sup> |
| TPSD686*016#0150  | D         | 68               | 16                | 85                     | 10                   | 125                       | 10.9          | 6           | 150                    | 1.000                  | 0.900 | 0.400 | 1 <sup>1)</sup> |
| TPSF686*016#0200  | F         | 68               | 16                | 85                     | 10                   | 125                       | 10.9          | 10          | 200                    | 0.707                  | 0.636 | 0.283 | 1               |
| TPSX686*016#0150  | X         | 68               | 16                | 85                     | 10                   | 125                       | 10.9          | 8           | 150                    | 0.816                  | 0.735 | 0.327 | 1 <sup>1)</sup> |
| TPSY686*016#0150  | Y         | 68               | 16                | 85                     | 10                   | 125                       | 10.9          | 6           | 150                    | 0.913                  | 0.822 | 0.365 | 1 <sup>1)</sup> |
| TPSY686*016#0200  | Y         | 68               | 16                | 85                     | 10                   | 125                       | 10.9          | 6           | 200                    | 0.791                  | 0.712 | 0.316 | 1 <sup>1)</sup> |
| TPSY686*016#0250  | Y         | 68               | 16                | 85                     | 10                   | 125                       | 10.9          | 6           | 250                    | 0.707                  | 0.636 | 0.283 | 1 <sup>1)</sup> |
| TPSC107*016#0200  | C         | 100              | 16                | 85                     | 10                   | 125                       | 16            | 8           | 200                    | 0.742                  | 0.667 | 0.297 | 1               |
| TPSD107*016#0060  | D         | 100              | 16                | 85                     | 10                   | 125                       | 16            | 6           | 60                     | 1.581                  | 1.423 | 0.632 | 1 <sup>1)</sup> |
| TPSD107*016#0100  | D         | 100              | 16                | 85                     | 10                   | 125                       | 16            | 6           | 100                    | 1.225                  | 1.102 | 0.490 | 1 <sup>1)</sup> |
| TPSD107*016#0125  | D         | 100              | 16                | 85                     | 10                   | 125                       | 16            | 6           | 125                    | 1.095                  | 0.986 | 0.438 | 1 <sup>1)</sup> |
| TPSD107*016#0150  | D         | 100              | 16                | 85                     | 10                   | 125                       | 16            | 6           | 150                    | 1.000                  | 0.900 | 0.400 | 1 <sup>1)</sup> |
| TPSE107*016#0055  | E         | 100              | 16                | 85                     | 10                   | 125                       | 16            | 6           | 55                     | 1.732                  | 1.559 | 0.693 | 1 <sup>1)</sup> |
| TPSE107*016#0100  | E         | 100              | 16                | 85                     | 10                   | 125                       | 16            | 6           | 100                    | 1.285                  | 1.156 | 0.514 | 1 <sup>1)</sup> |
| TPSE107*016#0125  | E         | 100              | 16                | 85                     | 10                   | 125                       | 16            | 6           | 125                    | 1.149                  | 1.034 | 0.460 | 1 <sup>1)</sup> |
| TPSE107*016#0150  | E         | 100              | 16                | 85                     | 10                   | 125                       | 16            | 6           | 150                    | 1.049                  | 0.944 | 0.420 | 1 <sup>1)</sup> |
| TPSF107*016#0150  | F         | 100              | 16                | 85                     | 10                   | 125                       | 16            | 10          | 150                    | 0.816                  | 0.735 | 0.327 | 1               |
| TPSF107*016#0200  | F         | 100              | 16                | 85                     | 10                   | 125                       | 16            | 10          | 200                    | 0.707                  | 0.636 | 0.283 | 1               |
| TPSY107*016#0100  | Y         | 100              | 16                | 85                     | 10                   | 125                       | 16            | 8           | 100                    | 1.118                  | 1.006 | 0.447 | 1 <sup>1)</sup> |
| TPSY107*016#0150  | Y         | 100              | 16                | 85                     | 10                   | 125                       | 16            | 8           | 150                    | 0.913                  | 0.822 | 0.365 | 1 <sup>1)</sup> |
| TPSY107*016#0200  | Y         | 100              | 16                | 85                     | 10                   | 125                       | 16            | 8           | 200                    | 0.791                  | 0.712 | 0.316 | 1 <sup>1)</sup> |
| TPSD157*016#0060  | D         | 150              | 16                | 85                     | 10                   | 125                       | 24            | 6           | 60                     | 1.581                  | 1.423 | 0.632 | 1 <sup>1)</sup> |
| TPSD157*016#0085  | D         | 150              | 16                | 85                     | 10                   | 125                       | 24            | 6           | 85                     | 1.328                  | 1.196 | 0.531 | 1 <sup>1)</sup> |
| TPSD157*016#0100  | D         | 150              | 16                | 85                     | 10                   | 125                       | 24            | 6           | 100                    | 1.225                  | 1.102 | 0.490 | 1 <sup>1)</sup> |
| TPSD157*016#0125  | D         | 150              | 16                | 85                     | 10                   | 125                       | 24            | 6           | 125                    | 1.095                  | 0.986 | 0.438 | 1 <sup>1)</sup> |
| TPSD157*016#0150  | D         | 150              | 16                | 85                     | 10                   | 125                       | 24            | 6           | 150                    | 1.000                  | 0.900 | 0.400 | 1 <sup>1)</sup> |
| TPSE157*016#0050V | E         | 150              | 16                | 85                     | 10                   | 125                       | 24            | 8           | 50                     | 1.817                  | 1.635 | 0.727 | 3               |
| TPSE157*016#0100  | E         | 150              | 16                | 85                     | 10                   | 125                       | 24            | 8           | 100                    | 1.285                  | 1.156 | 0.514 | 1 <sup>1)</sup> |
| TPSV157*016#0045  | V         | 150              | 16                | 85                     | 10                   | 125                       | 24            | 8           | 45                     | 2.357                  | 2.121 | 0.943 | 1 <sup>1)</sup> |
| TPSV157*016#0075  | V         | 150              | 16                | 85                     | 10                   | 125                       | 24            | 8           | 75                     | 1.826                  | 1.643 | 0.730 | 1 <sup>1)</sup> |
| TPSY157*016#0200  | Y         | 150              | 16                | 85                     | 10                   | 125                       | 24            | 15          | 200                    | 0.791                  | 0.712 | 0.316 | 1 <sup>1)</sup> |
| TPSD227*016#0200V | D         | 220              | 16                | 85                     | 10                   | 125                       | 35.2          | 10          | 200                    | 0.866                  | 0.779 | 0.346 | 3               |
| TPSE227*016#0050V | E         | 220              | 16                | 85                     | 10                   | 125                       | 35.2          | 10          | 50                     | 1.817                  | 1.635 | 0.727 | 3               |
| TPSE227*016#0100  | E         | 220              | 16                | 85                     | 10                   | 125                       | 35.2          | 10          | 100                    | 1.285                  | 1.156 | 0.514 | 1 <sup>1)</sup> |
| TPSE227*016#0150  | E         | 220              | 16                | 85                     | 10                   | 125                       | 35.2          | 10          | 150                    | 1.049                  | 0.944 | 0.420 | 1 <sup>1)</sup> |
| TPSV227*016#0050  | V         | 220              | 16                | 85                     | 10                   | 125                       | 35.2          | 8           | 50                     | 2.236                  | 2.012 | 0.894 | 1 <sup>1)</sup> |
| TPSV227*016#0075  | V         | 220              | 16                | 85                     | 10                   | 125                       | 35.2          | 8           | 75                     | 1.826                  | 1.643 | 0.730 | 1 <sup>1)</sup> |
| TPSV227*016#0100  | V         | 220              | 16                | 85                     | 10                   | 125                       | 35.2          | 8           | 100                    | 1.581                  | 1.423 | 0.632 | 1 <sup>1)</sup> |
| TPSV227*016#0150  | V         | 220              | 16                | 85                     | 10                   | 125                       | 35.2          | 8           | 150                    | 1.291                  | 1.162 | 0.516 | 1 <sup>1)</sup> |
| TPSE337*016#0200  | E         | 330              | 16                | 85                     | 10                   | 125                       | 52.8          | 30          | 200                    | 0.908                  | 0.817 | 0.363 | 1 <sup>1)</sup> |
| 20 Volt @ 85°C    |           |                  |                   |                        |                      |                           |               |             |                        |                        |       |       |                 |
| TPSA105*020#3000  | A         | 1                | 20                | 85                     | 13                   | 125                       | 0.5           | 4           | 3000                   | 0.158                  | 0.142 | 0.063 | 1               |
| TPSR105*020#6000  | R         | 1                | 20                | 85                     | 13                   | 125                       | 0.5           | 4           | 6000                   | 0.096                  | 0.086 | 0.038 | 1               |
| TPSS105*020#6000  | S         | 1                | 20                | 85                     | 13                   | 125                       | 0.5           | 4           | 6000                   | 0.104                  | 0.094 | 0.042 | 1               |
| TPST105*020#2000  | T         | 1                | 20                | 85                     | 13                   | 125                       | 0.5           | 4           | 2000                   | 0.200                  | 0.180 | 0.080 | 1               |
| TPSA155*020#3000  | A         | 1.5              | 20                | 85                     | 13                   | 125                       | 0.5           | 6           | 3000                   | 0.158                  | 0.142 | 0.063 | 1               |
| TPSA225*020#3000  | A         | 2.2              | 20                | 85                     | 13                   | 125                       | 0.5           | 6           | 3000                   | 0.158                  | 0.142 | 0.063 | 1               |
| TPSB225*020#1700  | B         | 2.2              | 20                | 85                     | 13                   | 125                       | 0.5           | 6           | 1700                   | 0.224                  | 0.201 | 0.089 | 1               |
| TPSA335*020#2500  | A         | 3.3              | 20                | 85                     | 13                   | 125                       | 0.7           | 6           | 2500                   | 0.173                  | 0.156 | 0.069 | 1               |
| TPSB335*020#1300  | B         | 3.3              | 20                | 85                     | 13                   | 125                       | 0.7           | 6           | 1300                   | 0.256                  | 0.230 | 0.102 | 1               |
| TPSA475*020#1800  | A         | 4.7              | 20                | 85                     | 13                   | 125                       | 0.9           | 6           | 1800                   | 0.204                  | 0.184 | 0.082 | 1               |
| TPSB475*020#0750  | B         | 4.7              | 20                | 85                     | 13                   | 125                       | 0.9           | 6           | 750                    | 0.337                  | 0.303 | 0.135 | 1               |
| TPSB475*020#1000  | B         | 4.7              | 20                | 85                     | 13                   | 125                       | 0.9           | 6           | 1000                   | 0.292                  | 0.262 | 0.117 | 1               |
| TPSA685*020#1000  | A         | 6.8              | 20                | 85                     | 13                   | 125                       | 1.4           | 6           | 1000                   | 0.274                  | 0.246 | 0.110 | 1               |
| TPSB685*020#0600  | B         | 6.8              | 20                | 85                     | 13                   | 125                       | 1.4           | 6           | 600                    | 0.376                  | 0.339 | 0.151 | 1               |
| TPSB685*020#1000  | B         | 6.8              | 20                | 85                     | 13                   | 125                       | 1.4           | 6           | 1000                   | 0.292                  | 0.262 | 0.117 | 1               |
| TPSC685*020#0700  | C         | 6.8              | 20                | 85                     | 13                   | 125                       | 1.4           | 6           | 700                    | 0.396                  | 0.357 | 0.159 | 1               |
| TPSB106*020#0500  | B         | 10               | 20                | 85                     | 13                   | 125                       | 2             | 6           | 500                    | 0.412                  | 0.371 | 0.165 | 1               |
| TPSB106*020#1000  | B         | 10               | 20                | 85                     | 13                   | 125                       | 2             | 6           | 1000                   | 0.292                  | 0.262 | 0.117 | 1               |

# TPS Series

## Low ESR



### RATINGS & PART NUMBER REFERENCE

| Part Number      | 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) | 100kHz RMS Current (A) |       |       | MSL             |
|------------------|-----------|------------------|-------------------|------------------------|----------------------|---------------------------|---------------|-------------|------------------------|------------------------|-------|-------|-----------------|
|                  |           |                  |                   |                        |                      |                           |               |             |                        | 25°C                   | 85°C  | 125°C |                 |
| TPSC106*020#0500 | C         | 10               | 20                | 85                     | 13                   | 125                       | 2             | 6           | 500                    | 0.469                  | 0.422 | 0.188 | 1               |
| TPSC106*020#0700 | C         | 10               | 20                | 85                     | 13                   | 125                       | 2             | 6           | 700                    | 0.396                  | 0.357 | 0.159 | 1               |
| TPSW106*020#0250 | W         | 10               | 20                | 85                     | 13                   | 125                       | 2             | 6           | 250                    | 0.600                  | 0.540 | 0.240 | 1               |
| TPSW106*020#0500 | W         | 10               | 20                | 85                     | 13                   | 125                       | 2             | 6           | 500                    | 0.424                  | 0.382 | 0.170 | 1               |
| TPSB156*020#0500 | B         | 15               | 20                | 85                     | 13                   | 125                       | 3             | 6           | 500                    | 0.412                  | 0.371 | 0.165 | 1               |
| TPSC156*020#0400 | C         | 15               | 20                | 85                     | 13                   | 125                       | 3             | 6           | 400                    | 0.524                  | 0.472 | 0.210 | 1               |
| TPSC156*020#0450 | C         | 15               | 20                | 85                     | 13                   | 125                       | 3             | 6           | 450                    | 0.494                  | 0.445 | 0.198 | 1               |
| TPSB226*020#0400 | B         | 22               | 20                | 85                     | 13                   | 125                       | 4.4           | 6           | 400                    | 0.461                  | 0.415 | 0.184 | 1               |
| TPSB226*020#0600 | B         | 22               | 20                | 85                     | 13                   | 125                       | 4.4           | 6           | 600                    | 0.376                  | 0.339 | 0.151 | 1               |
| TPSC226*020#0100 | C         | 22               | 20                | 85                     | 13                   | 125                       | 4.4           | 6           | 100                    | 1.049                  | 0.944 | 0.420 | 1               |
| TPSC226*020#0150 | C         | 22               | 20                | 85                     | 13                   | 125                       | 4.4           | 6           | 150                    | 0.856                  | 0.771 | 0.343 | 1               |
| TPSC226*020#0400 | C         | 22               | 20                | 85                     | 13                   | 125                       | 4.4           | 6           | 400                    | 0.524                  | 0.472 | 0.210 | 1               |
| TPSD226*020#0200 | D         | 22               | 20                | 85                     | 13                   | 125                       | 4.4           | 6           | 200                    | 0.866                  | 0.779 | 0.346 | 1 <sup>1)</sup> |
| TPSD226*020#0300 | D         | 22               | 20                | 85                     | 13                   | 125                       | 4.4           | 6           | 300                    | 0.707                  | 0.636 | 0.283 | 1 <sup>1)</sup> |
| TPSC336*020#0300 | C         | 33               | 20                | 85                     | 13                   | 125                       | 6.6           | 6           | 300                    | 0.606                  | 0.545 | 0.242 | 1               |
| TPSD336*020#0100 | D         | 33               | 20                | 85                     | 13                   | 125                       | 6.6           | 6           | 100                    | 1.225                  | 1.102 | 0.490 | 1 <sup>1)</sup> |
| TPSD336*020#0200 | D         | 33               | 20                | 85                     | 13                   | 125                       | 6.6           | 6           | 200                    | 0.866                  | 0.779 | 0.346 | 1 <sup>1)</sup> |
| TPSD476*020#0075 | D         | 47               | 20                | 85                     | 13                   | 125                       | 9.4           | 6           | 75                     | 1.414                  | 1.273 | 0.566 | 1 <sup>1)</sup> |
| TPSD476*020#0100 | D         | 47               | 20                | 85                     | 13                   | 125                       | 9.4           | 6           | 100                    | 1.225                  | 1.102 | 0.490 | 1 <sup>1)</sup> |
| TPSD476*020#0200 | D         | 47               | 20                | 85                     | 13                   | 125                       | 9.4           | 6           | 200                    | 0.866                  | 0.779 | 0.346 | 1 <sup>1)</sup> |
| TPSE476*020#0070 | E         | 47               | 20                | 85                     | 13                   | 125                       | 9.4           | 6           | 70                     | 1.535                  | 1.382 | 0.614 | 1 <sup>1)</sup> |
| TPSE476*020#0125 | E         | 47               | 20                | 85                     | 13                   | 125                       | 9.4           | 6           | 125                    | 1.149                  | 1.034 | 0.460 | 1 <sup>1)</sup> |
| TPSE476*020#0150 | E         | 47               | 20                | 85                     | 13                   | 125                       | 9.4           | 6           | 150                    | 1.049                  | 0.944 | 0.420 | 1 <sup>1)</sup> |
| TPSE476*020#0200 | E         | 47               | 20                | 85                     | 13                   | 125                       | 9.4           | 6           | 200                    | 0.908                  | 0.817 | 0.363 | 1 <sup>1)</sup> |
| TPSE476*020#0250 | E         | 47               | 20                | 85                     | 13                   | 125                       | 9.4           | 6           | 250                    | 0.812                  | 0.731 | 0.325 | 1 <sup>1)</sup> |
| TPSX476*020#0200 | X         | 47               | 20                | 85                     | 13                   | 125                       | 9.4           | 6           | 200                    | 0.707                  | 0.636 | 0.283 | 1 <sup>1)</sup> |
| TPSD686*020#0070 | D         | 68               | 20                | 85                     | 13                   | 125                       | 13.6          | 6           | 70                     | 1.464                  | 1.317 | 0.586 | 1 <sup>1)</sup> |
| TPSD686*020#0150 | D         | 68               | 20                | 85                     | 13                   | 125                       | 13.6          | 6           | 150                    | 1.000                  | 0.900 | 0.400 | 1 <sup>1)</sup> |
| TPSD686*020#0200 | D         | 68               | 20                | 85                     | 13                   | 125                       | 13.6          | 6           | 200                    | 0.866                  | 0.779 | 0.346 | 1 <sup>1)</sup> |
| TPSD686*020#0300 | D         | 68               | 20                | 85                     | 13                   | 125                       | 13.6          | 6           | 300                    | 0.707                  | 0.636 | 0.283 | 1 <sup>1)</sup> |
| TPSE686*020#0125 | E         | 68               | 20                | 85                     | 13                   | 125                       | 13.6          | 6           | 125                    | 1.149                  | 1.034 | 0.460 | 1 <sup>1)</sup> |
| TPSE686*020#0150 | E         | 68               | 20                | 85                     | 13                   | 125                       | 13.6          | 6           | 150                    | 1.049                  | 0.944 | 0.420 | 1 <sup>1)</sup> |
| TPSE686*020#0200 | E         | 68               | 20                | 85                     | 13                   | 125                       | 13.6          | 6           | 200                    | 0.908                  | 0.817 | 0.363 | 1 <sup>1)</sup> |
| TPSY686*020#0200 | Y         | 68               | 20                | 85                     | 13                   | 125                       | 13.6          | 6           | 200                    | 0.791                  | 0.712 | 0.316 | 1 <sup>1)</sup> |
| TPSD107*020#0085 | D         | 100              | 20                | 85                     | 13                   | 125                       | 20            | 6           | 85                     | 1.328                  | 1.196 | 0.531 | 1 <sup>1)</sup> |
| TPSD107*020#0100 | D         | 100              | 20                | 85                     | 13                   | 125                       | 20            | 6           | 100                    | 1.225                  | 1.102 | 0.490 | 1 <sup>1)</sup> |
| TPSD107*020#0150 | D         | 100              | 20                | 85                     | 13                   | 125                       | 20            | 6           | 150                    | 1.000                  | 0.900 | 0.400 | 1 <sup>1)</sup> |
| TPSE107*020#0100 | E         | 100              | 20                | 85                     | 13                   | 125                       | 20            | 6           | 100                    | 1.285                  | 1.156 | 0.514 | 1 <sup>1)</sup> |
| TPSE107*020#0150 | E         | 100              | 20                | 85                     | 13                   | 125                       | 20            | 6           | 150                    | 1.049                  | 0.944 | 0.420 | 1 <sup>1)</sup> |
| TPSE107*020#0200 | E         | 100              | 20                | 85                     | 13                   | 125                       | 20            | 6           | 200                    | 0.908                  | 0.817 | 0.363 | 1 <sup>1)</sup> |
| TPSV107*020#0060 | V         | 100              | 20                | 85                     | 13                   | 125                       | 20            | 8           | 60                     | 2.041                  | 1.837 | 0.816 | 1 <sup>1)</sup> |
| TPSV107*020#0085 | V         | 100              | 20                | 85                     | 13                   | 125                       | 20            | 8           | 85                     | 1.715                  | 1.543 | 0.686 | 1 <sup>1)</sup> |
| TPSV107*020#0100 | V         | 100              | 20                | 85                     | 13                   | 125                       | 20            | 8           | 100                    | 1.581                  | 1.423 | 0.632 | 1 <sup>1)</sup> |
| TPSV107*020#0200 | V         | 100              | 20                | 85                     | 13                   | 125                       | 20            | 8           | 200                    | 1.118                  | 1.006 | 0.447 | 1 <sup>1)</sup> |
| TPSV157*020#0080 | V         | 150              | 20                | 85                     | 13                   | 125                       | 30            | 8           | 80                     | 1.768                  | 1.591 | 0.707 | 1 <sup>1)</sup> |
| 25 Volt @ 85°C   |           |                  |                   |                        |                      |                           |               |             |                        |                        |       |       |                 |
| TPSA474*025#7000 | A         | 0.47             | 25                | 85                     | 17                   | 125                       | 0.5           | 4           | 7000                   | 0.104                  | 0.093 | 0.041 | 1               |
| TPSA684*025#6000 | A         | 0.68             | 25                | 85                     | 17                   | 125                       | 0.5           | 4           | 6000                   | 0.112                  | 0.101 | 0.045 | 1               |
| TPSA105*025#4000 | A         | 1                | 25                | 85                     | 17                   | 125                       | 0.5           | 4           | 4000                   | 0.137                  | 0.123 | 0.055 | 1               |
| TPSR105*025#2500 | R         | 1                | 25                | 85                     | 17                   | 125                       | 0.5           | 4           | 2500                   | 0.148                  | 0.133 | 0.059 | 1               |
| TPSR105*025#4000 | R         | 1                | 25                | 85                     | 17                   | 125                       | 0.5           | 4           | 4000                   | 0.117                  | 0.106 | 0.047 | 1               |
| TPSA155*025#3000 | A         | 1.5              | 25                | 85                     | 17                   | 125                       | 0.5           | 6           | 3000                   | 0.158                  | 0.142 | 0.063 | 1               |
| TPSB155*025#1800 | B         | 1.5              | 25                | 85                     | 17                   | 125                       | 0.5           | 6           | 1800                   | 0.217                  | 0.196 | 0.087 | 1               |
| TPSA225*025#2500 | A         | 2.2              | 25                | 85                     | 17                   | 125                       | 0.6           | 6           | 2500                   | 0.173                  | 0.156 | 0.069 | 1               |
| TPSB225*025#0900 | B         | 2.2              | 25                | 85                     | 17                   | 125                       | 0.6           | 6           | 900                    | 0.307                  | 0.277 | 0.123 | 1               |
| TPSB225*025#1200 | B         | 2.2              | 25                | 85                     | 17                   | 125                       | 0.6           | 6           | 1200                   | 0.266                  | 0.240 | 0.106 | 1               |
| TPSB225*025#2500 | B         | 2.2              | 25                | 85                     | 17                   | 125                       | 0.6           | 6           | 2500                   | 0.184                  | 0.166 | 0.074 | 1               |
| TPSA335*025#1000 | A         | 3.3              | 25                | 85                     | 17                   | 125                       | 0.8           | 6           | 1000                   | 0.274                  | 0.246 | 0.110 | 1               |
| TPSA335*025#1500 | A         | 3.3              | 25                | 85                     | 17                   | 125                       | 0.8           | 6           | 1500                   | 0.224                  | 0.201 | 0.089 | 1               |
| TPSB335*025#0750 | B         | 3.3              | 25                | 85                     | 17                   | 125                       | 0.8           | 6           | 750                    | 0.337                  | 0.303 | 0.135 | 1               |
| TPSB335*025#1500 | B         | 3.3              | 25                | 85                     | 17                   | 125                       | 0.8           | 6           | 1500                   | 0.238                  | 0.214 | 0.095 | 1               |
| TPSB335*025#2000 | B         | 3.3              | 25                | 85                     | 17                   | 125                       | 0.8           | 6           | 2000                   | 0.206                  | 0.186 | 0.082 | 1               |
| TPSB475*025#0700 | B         | 4.7              | 25                | 85                     | 17                   | 125                       | 1.2           | 6           | 700                    | 0.348                  | 0.314 | 0.139 | 1               |
| TPSB475*025#0900 | B         | 4.7              | 25                | 85                     | 17                   | 125                       | 1.2           | 6           | 900                    | 0.307                  | 0.277 | 0.123 | 1               |
| TPSB475*025#1500 | B         | 4.7              | 25                | 85                     | 17                   | 125                       | 1.2           | 6           | 1500                   | 0.238                  | 0.214 | 0.095 | 1               |
| TPSC475*025#0700 | C         | 4.7              | 25                | 85                     | 17                   | 125                       | 1.2           | 6           | 700                    | 0.396                  | 0.357 | 0.159 | 1               |
| TPSB685*025#0700 | B         | 6.8              | 25                | 85                     | 17                   | 125                       | 1.7           | 6           | 700                    | 0.348                  | 0.314 | 0.139 | 1               |
| TPSC685*025#0500 | C         | 6.8              | 25                | 85                     | 17                   | 125                       | 1.7           | 6           | 500                    | 0.469                  | 0.422 | 0.188 | 1               |
| TPSC685*025#0600 | C         | 6.8              | 25                | 85                     | 17                   | 125                       | 1.7           | 6           | 600                    | 0.428                  | 0.385 | 0.171 | 1               |
| TPSC685*025#0700 | C         | 6.8              | 25                | 85                     | 17                   | 125                       | 1.7           | 6           | 700                    | 0.396                  | 0.357 | 0.159 | 1               |
| TPSB106*025#1800 | B         | 10               | 25                | 85                     | 17                   | 125                       | 2.5           | 6           | 1800                   | 0.217                  | 0.196 | 0.087 | 1               |
| TPSC106*025#0300 | C         | 10               | 25                | 85                     | 17                   | 125                       | 2.5           | 6           | 300                    | 0.606                  | 0.545 | 0.242 | 1               |
| TPSC106*025#0500 | C         | 10               | 25                | 85                     | 17                   | 125                       | 2.5           | 6           | 500                    | 0.469                  | 0.422 | 0.188 | 1               |
| TPSD106*025#0500 | D         | 10               | 25                | 85                     | 17                   | 125                       | 2.5           | 6           | 500                    | 0.548                  | 0.493 | 0.219 | 1 <sup>1)</sup> |
| TPSC156*025#0220 | C         | 15               | 25                | 85                     | 17                   | 125                       | 3.8           | 6           | 220                    | 0.707                  | 0.636 | 0.283 | 1               |
| TPSC156*025#0300 | C         | 15               | 25                | 85                     | 17                   | 125                       | 3.8           | 6           | 300                    | 0.606                  | 0.545 | 0.242 | 1               |
| TPSD156*025#0100 | D         | 15               | 25                | 85                     | 17                   | 125                       | 3.8           | 6           | 100                    | 1.225                  | 1.102 | 0.490 | 1 <sup>1)</sup> |
| TPSD156*025#0300 | D         | 15               | 25                | 85                     | 17                   | 125                       | 3.8           | 6           | 300                    | 0.707                  | 0.636 | 0.283 | 1 <sup>1)</sup> |
| TPSC226*025#0275 | C         | 22               | 25                | 85                     | 17                   | 125                       | 5.5           | 6           | 275                    | 0.632                  | 0.569 | 0.253 | 1               |
| TPSC226*025#0400 | C         | 22               | 25                | 85                     | 17                   | 125                       | 5.5           | 6           | 400                    | 0.524                  | 0.472 | 0.210 | 1               |
| TPSD226*025#0100 | D         | 22               | 25                | 85                     | 17                   | 125                       | 5.5           | 6           | 100                    | 1.225                  | 1.102 | 0.490 | 1 <sup>1)</sup> |

### RATINGS & PART NUMBER REFERENCE

| Part Number       | 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) | 100kHz RMS Current (A) |       |       | MSL             |
|-------------------|-----------|------------------|-------------------|------------------------|----------------------|---------------------------|---------------|-------------|------------------------|------------------------|-------|-------|-----------------|
|                   |           |                  |                   |                        |                      |                           |               |             |                        | 25°C                   | 85°C  | 125°C |                 |
| TPSD226*025#0200  | D         | 22               | 25                | 85                     | 17                   | 125                       | 5.5           | 6           | 200                    | 0.866                  | 0.779 | 0.346 | 1 <sup>1)</sup> |
| TPSD226*025#0300  | D         | 22               | 25                | 85                     | 17                   | 125                       | 5.5           | 6           | 300                    | 0.707                  | 0.636 | 0.283 | 1 <sup>1)</sup> |
| TPSF226*025#0300  | F         | 22               | 25                | 85                     | 17                   | 125                       | 5.5           | 6           | 300                    | 0.577                  | 0.520 | 0.231 | 1               |
| TPSC336*025#0400  | C         | 33               | 25                | 85                     | 17                   | 125                       | 8.3           | 6           | 400                    | 0.524                  | 0.472 | 0.210 | 1               |
| TPSD336*025#0100  | D         | 33               | 25                | 85                     | 17                   | 125                       | 8.3           | 6           | 100                    | 1.225                  | 1.102 | 0.490 | 1 <sup>1)</sup> |
| TPSD336*025#0200  | D         | 33               | 25                | 85                     | 17                   | 125                       | 8.3           | 6           | 200                    | 0.866                  | 0.779 | 0.346 | 1 <sup>1)</sup> |
| TPSD336*025#0300  | D         | 33               | 25                | 85                     | 17                   | 125                       | 8.3           | 6           | 300                    | 0.707                  | 0.636 | 0.283 | 1 <sup>1)</sup> |
| TPSE336*025#0100  | E         | 33               | 25                | 85                     | 17                   | 125                       | 8.3           | 6           | 100                    | 1.285                  | 1.156 | 0.514 | 1 <sup>1)</sup> |
| TPSE336*025#0175  | E         | 33               | 25                | 85                     | 17                   | 125                       | 8.3           | 6           | 175                    | 0.971                  | 0.874 | 0.388 | 1 <sup>1)</sup> |
| TPSE336*025#0200  | E         | 33               | 25                | 85                     | 17                   | 125                       | 8.3           | 6           | 200                    | 0.908                  | 0.817 | 0.363 | 1 <sup>1)</sup> |
| TPSE336*025#0300  | E         | 33               | 25                | 85                     | 17                   | 125                       | 8.3           | 6           | 300                    | 0.742                  | 0.667 | 0.297 | 1 <sup>1)</sup> |
| TPSF336*025#0150  | F         | 33               | 25                | 85                     | 17                   | 125                       | 8.3           | 6           | 150                    | 0.816                  | 0.735 | 0.327 | 1 <sup>1)</sup> |
| TPSF336*025#0200  | F         | 33               | 25                | 85                     | 17                   | 125                       | 8.3           | 6           | 200                    | 0.707                  | 0.636 | 0.283 | 1               |
| TPSF336*025#0400  | F         | 33               | 25                | 85                     | 17                   | 125                       | 8.3           | 6           | 400                    | 0.500                  | 0.450 | 0.200 | 1               |
| TPSY336*025#0200  | Y         | 33               | 25                | 85                     | 17                   | 125                       | 8.3           | 6           | 200                    | 0.791                  | 0.712 | 0.316 | 1 <sup>1)</sup> |
| TPSD476*025#0125  | D         | 47               | 25                | 85                     | 17                   | 125                       | 11.8          | 6           | 125                    | 1.095                  | 0.986 | 0.438 | 1 <sup>1)</sup> |
| TPSD476*025#0150  | D         | 47               | 25                | 85                     | 17                   | 125                       | 11.8          | 6           | 150                    | 1.000                  | 0.900 | 0.400 | 1 <sup>1)</sup> |
| TPSD476*025#0250  | D         | 47               | 25                | 85                     | 17                   | 125                       | 11.8          | 6           | 250                    | 0.775                  | 0.697 | 0.310 | 1 <sup>1)</sup> |
| TPSE476*025#0080  | E         | 47               | 25                | 85                     | 17                   | 125                       | 11.8          | 6           | 80                     | 1.436                  | 1.293 | 0.574 | 1 <sup>1)</sup> |
| TPSE476*025#0100  | E         | 47               | 25                | 85                     | 17                   | 125                       | 11.8          | 6           | 100                    | 1.285                  | 1.156 | 0.514 | 1 <sup>1)</sup> |
| TPSE476*025#0125  | E         | 47               | 25                | 85                     | 17                   | 125                       | 11.8          | 6           | 125                    | 1.149                  | 1.034 | 0.460 | 1 <sup>1)</sup> |
| TPSY476*025#0250  | Y         | 47               | 25                | 85                     | 17                   | 125                       | 11.8          | 6           | 250                    | 0.707                  | 0.636 | 0.283 | 1 <sup>1)</sup> |
| TPSD686*025#0150  | D         | 68               | 25                | 85                     | 17                   | 125                       | 17            | 6           | 150                    | 1.000                  | 0.900 | 0.400 | 1 <sup>1)</sup> |
| TPSD686*025#0200  | D         | 68               | 25                | 85                     | 17                   | 125                       | 17            | 6           | 200                    | 0.866                  | 0.779 | 0.346 | 1 <sup>1)</sup> |
| TPSD686*025#0300  | D         | 68               | 25                | 85                     | 17                   | 125                       | 17            | 6           | 300                    | 0.707                  | 0.636 | 0.283 | 1 <sup>1)</sup> |
| TPSE686*025#0125  | E         | 68               | 25                | 85                     | 17                   | 125                       | 17            | 6           | 125                    | 1.149                  | 1.034 | 0.460 | 1 <sup>1)</sup> |
| TPSE686*025#0200  | E         | 68               | 25                | 85                     | 17                   | 125                       | 17            | 6           | 200                    | 0.908                  | 0.817 | 0.363 | 1 <sup>1)</sup> |
| TPSV686*025#0080  | V         | 68               | 25                | 85                     | 17                   | 125                       | 17            | 6           | 80                     | 1.768                  | 1.591 | 0.707 | 1 <sup>1)</sup> |
| TPSV686*025#0095  | V         | 68               | 25                | 85                     | 17                   | 125                       | 17            | 6           | 95                     | 1.622                  | 1.460 | 0.649 | 1 <sup>1)</sup> |
| TPSV686*025#0150  | V         | 68               | 25                | 85                     | 17                   | 125                       | 17            | 6           | 150                    | 1.291                  | 1.162 | 0.516 | 1 <sup>1)</sup> |
| TPSV686*025#0200  | V         | 68               | 25                | 85                     | 17                   | 125                       | 17            | 6           | 200                    | 1.118                  | 1.006 | 0.447 | 1 <sup>1)</sup> |
| TPSE107*025#0150  | E         | 100              | 25                | 85                     | 17                   | 125                       | 25            | 10          | 150                    | 1.049                  | 0.944 | 0.420 | 1 <sup>1)</sup> |
| TPSV107*025#0100  | V         | 100              | 25                | 85                     | 17                   | 125                       | 25            | 8           | 100                    | 1.581                  | 1.423 | 0.632 | 1 <sup>1)</sup> |
| TPSV157M025#0150  | V         | 150              | 25                | 85                     | 17                   | 125                       | 37.5          | 10          | 150                    | 1.291                  | 1.162 | 0.516 | 1 <sup>1)</sup> |
| 35 Volt @ 85°C    |           |                  |                   |                        |                      |                           |               |             |                        |                        |       |       |                 |
| TPSA224*035#6000  | A         | 0.22             | 35                | 85                     | 23                   | 125                       | 0.5           | 4           | 6000                   | 0.112                  | 0.101 | 0.045 | 1               |
| TPSA334*035#6000  | A         | 0.33             | 35                | 85                     | 23                   | 125                       | 0.5           | 4           | 6000                   | 0.112                  | 0.101 | 0.045 | 1               |
| TPSA474*035#6000  | A         | 0.47             | 35                | 85                     | 23                   | 125                       | 0.5           | 4           | 6000                   | 0.112                  | 0.101 | 0.045 | 1               |
| TPSB474*035#4000  | B         | 0.47             | 35                | 85                     | 23                   | 125                       | 0.5           | 4           | 4000                   | 0.146                  | 0.131 | 0.058 | 1               |
| TPSA684*035#6000  | A         | 0.68             | 35                | 85                     | 23                   | 125                       | 0.5           | 4           | 6000                   | 0.112                  | 0.101 | 0.045 | 1               |
| TPSA105*035#3000  | A         | 1                | 35                | 85                     | 23                   | 125                       | 0.5           | 4           | 3000                   | 0.158                  | 0.142 | 0.063 | 1               |
| TPSB105*035#2000  | B         | 1                | 35                | 85                     | 23                   | 125                       | 0.5           | 4           | 2000                   | 0.206                  | 0.186 | 0.082 | 1               |
| TPSA155*035#3000  | A         | 1.5              | 35                | 85                     | 23                   | 125                       | 0.5           | 6           | 3000                   | 0.158                  | 0.142 | 0.063 | 1               |
| TPSB155*035#2500  | B         | 1.5              | 35                | 85                     | 23                   | 125                       | 0.5           | 6           | 2500                   | 0.184                  | 0.166 | 0.074 | 1               |
| TPSA225*035#1500  | A         | 2.2              | 35                | 85                     | 23                   | 125                       | 0.8           | 6           | 1500                   | 0.224                  | 0.201 | 0.089 | 1               |
| TPSB225*035#0750  | B         | 2.2              | 35                | 85                     | 23                   | 125                       | 0.8           | 6           | 750                    | 0.337                  | 0.303 | 0.135 | 1               |
| TPSB225*035#1500  | B         | 2.2              | 35                | 85                     | 23                   | 125                       | 0.8           | 6           | 1500                   | 0.238                  | 0.214 | 0.095 | 1               |
| TPSB225*035#2000  | B         | 2.2              | 35                | 85                     | 23                   | 125                       | 0.8           | 6           | 2000                   | 0.206                  | 0.186 | 0.082 | 1               |
| TPSC225*035#1000  | C         | 2.2              | 35                | 85                     | 23                   | 125                       | 0.8           | 6           | 1000                   | 0.332                  | 0.298 | 0.133 | 1               |
| TPSB335*035#1000  | B         | 3.3              | 35                | 85                     | 23                   | 125                       | 1.2           | 6           | 1000                   | 0.292                  | 0.262 | 0.117 | 1               |
| TPSC335*035#0700  | C         | 3.3              | 35                | 85                     | 23                   | 125                       | 1.2           | 6           | 700                    | 0.396                  | 0.357 | 0.159 | 1               |
| TPSB475*035#0700  | B         | 4.7              | 35                | 85                     | 23                   | 125                       | 1.6           | 6           | 700                    | 0.348                  | 0.314 | 0.139 | 1               |
| TPSB475*035#1500  | B         | 4.7              | 35                | 85                     | 23                   | 125                       | 1.6           | 6           | 1500                   | 0.238                  | 0.214 | 0.095 | 1               |
| TPSC475*035#0600  | C         | 4.7              | 35                | 85                     | 23                   | 125                       | 1.6           | 6           | 600                    | 0.428                  | 0.385 | 0.171 | 1               |
| TPSD475*035#0700  | D         | 4.7              | 35                | 85                     | 23                   | 125                       | 1.6           | 6           | 700                    | 0.463                  | 0.417 | 0.185 | 1 <sup>1)</sup> |
| TPSC685*035#0350  | C         | 6.8              | 35                | 85                     | 23                   | 125                       | 2.4           | 6           | 350                    | 0.561                  | 0.505 | 0.224 | 1               |
| TPSD685*035#0150  | D         | 6.8              | 35                | 85                     | 23                   | 125                       | 2.4           | 6           | 150                    | 1.000                  | 0.900 | 0.400 | 1 <sup>1)</sup> |
| TPSD685*035#0400  | D         | 6.8              | 35                | 85                     | 23                   | 125                       | 2.4           | 6           | 400                    | 0.612                  | 0.551 | 0.245 | 1 <sup>1)</sup> |
| TPSD685*035#0500  | D         | 6.8              | 35                | 85                     | 23                   | 125                       | 2.4           | 6           | 500                    | 0.548                  | 0.493 | 0.219 | 1 <sup>1)</sup> |
| TPSC106*035#0600  | C         | 10               | 35                | 85                     | 23                   | 125                       | 3.5           | 6           | 600                    | 0.428                  | 0.385 | 0.171 | 1               |
| TPSD106*035#0125  | D         | 10               | 35                | 85                     | 23                   | 125                       | 3.5           | 6           | 125                    | 1.095                  | 0.986 | 0.438 | 1 <sup>1)</sup> |
| TPSD106*035#0300  | D         | 10               | 35                | 85                     | 23                   | 125                       | 3.5           | 6           | 300                    | 0.707                  | 0.636 | 0.283 | 1 <sup>1)</sup> |
| TPSE106*035#0100V | E         | 10               | 35                | 85                     | 23                   | 125                       | 3.5           | 6           | 100                    | 1.285                  | 1.156 | 0.514 | 3               |
| TPSE106*035#0150V | E         | 10               | 35                | 85                     | 23                   | 125                       | 3.5           | 6           | 150                    | 1.049                  | 0.944 | 0.420 | 3               |
| TPSE106*035#0200  | E         | 10               | 35                | 85                     | 23                   | 125                       | 3.5           | 6           | 200                    | 0.908                  | 0.817 | 0.363 | 1 <sup>1)</sup> |
| TPSY106*035#0250  | Y         | 10               | 35                | 85                     | 23                   | 125                       | 3.5           | 6           | 250                    | 0.707                  | 0.636 | 0.283 | 1 <sup>1)</sup> |
| TPSC156*035#0350  | C         | 15               | 35                | 85                     | 23                   | 125                       | 5.3           | 6           | 350                    | 0.561                  | 0.505 | 0.224 | 1               |
| TPSC156*035#0450  | C         | 15               | 35                | 85                     | 23                   | 125                       | 5.3           | 6           | 450                    | 0.494                  | 0.445 | 0.198 | 1               |
| TPSD156*035#0100  | D         | 15               | 35                | 85                     | 23                   | 125                       | 5.3           | 6           | 100                    | 1.225                  | 1.102 | 0.490 | 1 <sup>1)</sup> |
| TPSD156*035#0300  | D         | 15               | 35                | 85                     | 23                   | 125                       | 5.3           | 6           | 300                    | 0.707                  | 0.636 | 0.283 | 1 <sup>1)</sup> |
| TPSY156*035#0250  | Y         | 15               | 35                | 85                     | 23                   | 125                       | 5.3           | 6           | 250                    | 0.707                  | 0.636 | 0.283 | 1 <sup>1)</sup> |
| TPSD226*035#0125  | D         | 22               | 35                | 85                     | 23                   | 125                       | 7.7           | 6           | 125                    | 1.095                  | 0.986 | 0.438 | 1 <sup>1)</sup> |
| TPSD226*035#0200  | D         | 22               | 35                | 85                     | 23                   | 125                       | 7.7           | 6           | 200                    | 0.866                  | 0.779 | 0.346 | 1 <sup>1)</sup> |
| TPSD226*035#0300  | D         | 22               | 35                | 85                     | 23                   | 125                       | 7.7           | 6           | 300                    | 0.707                  | 0.636 | 0.283 | 1 <sup>1)</sup> |
| TPSD226*035#0400  | D         | 22               | 35                | 85                     | 23                   | 125                       | 7.7           | 6           | 400                    | 0.612                  | 0.551 | 0.245 | 1 <sup>1)</sup> |
| TPSE226*035#0125  | E         | 22               | 35                | 85                     | 23                   | 125                       | 7.7           | 6           | 125                    | 1.149                  | 1.034 | 0.460 | 1 <sup>1)</sup> |
| TPSE226*035#0200  | E         | 22               | 35                | 85                     | 23                   | 125                       | 7.7           | 6           | 200                    | 0.908                  | 0.817 | 0.363 | 1 <sup>1)</sup> |
| TPSE226*035#0300  | E         | 22               | 35                | 85                     | 23                   | 125                       | 7.7           | 6           | 300                    | 0.742                  | 0.667 | 0.297 | 1 <sup>1)</sup> |
| TPSY226*035#0200  | Y         | 22               | 35                | 85                     | 23                   | 125                       | 7.7           | 6           | 200                    | 0.791                  | 0.712 | 0.316 | 1 <sup>1)</sup> |
| TPSD336*035#0200  | D         | 33               | 35                | 85                     | 23                   | 125                       | 11.6          | 6           | 200                    | 0.866                  | 0.779 | 0.346 | 1 <sup>1)</sup> |
| TPSD336*035#0300  | D         | 33               | 35                | 85                     | 23                   | 125                       | 11.6          | 6           | 300                    | 0.707                  | 0.636 | 0.283 | 1 <sup>1)</sup> |

# TPS Series

## Low ESR



### RATINGS & PART NUMBER REFERENCE

| Part Number       | 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) | 100kHz RMS Current (A) |       |       | MSL             |
|-------------------|-----------|------------------|-------------------|------------------------|----------------------|---------------------------|---------------|-------------|------------------------|------------------------|-------|-------|-----------------|
|                   |           |                  |                   |                        |                      |                           |               |             |                        | 25°C                   | 85°C  | 125°C |                 |
| TPSE336*035#0100  | E         | 33               | 35                | 85                     | 23                   | 125                       | 11.6          | 6           | 100                    | 1.285                  | 1.156 | 0.514 | 1 <sup>1)</sup> |
| TPSE336*035#0250  | E         | 33               | 35                | 85                     | 23                   | 125                       | 11.6          | 6           | 250                    | 0.812                  | 0.731 | 0.325 | 1 <sup>1)</sup> |
| TPSE336*035#0300  | E         | 33               | 35                | 85                     | 23                   | 125                       | 11.6          | 6           | 300                    | 0.742                  | 0.667 | 0.297 | 1 <sup>1)</sup> |
| TPSV336*035#0200  | V         | 33               | 35                | 85                     | 23                   | 125                       | 11.6          | 6           | 200                    | 1.118                  | 1.006 | 0.447 | 1 <sup>1)</sup> |
| TPSD476*035#0300V | D         | 47               | 35                | 85                     | 23                   | 125                       | 16.5          | 6           | 300                    | 0.707                  | 0.636 | 0.283 | 3               |
| TPSE476*035#0200  | E         | 47               | 35                | 85                     | 23                   | 125                       | 16.5          | 6           | 200                    | 0.908                  | 0.817 | 0.363 | 1 <sup>1)</sup> |
| TPSE476*035#0250  | E         | 47               | 35                | 85                     | 23                   | 125                       | 16.5          | 6           | 250                    | 0.812                  | 0.731 | 0.325 | 1 <sup>1)</sup> |
| TPSV476*035#0150  | V         | 47               | 35                | 85                     | 23                   | 125                       | 16.5          | 6           | 150                    | 1.291                  | 1.162 | 0.516 | 1 <sup>1)</sup> |
| TPSV476*035#0200  | V         | 47               | 35                | 85                     | 23                   | 125                       | 16.5          | 6           | 200                    | 1.118                  | 1.006 | 0.447 | 1 <sup>1)</sup> |
| TPSV686*035#0150  | V         | 68               | 35                | 85                     | 23                   | 125                       | 23.8          | 6           | 150                    | 1.291                  | 1.162 | 0.516 | 1 <sup>1)</sup> |
| TPSV686*035#0200  | V         | 68               | 35                | 85                     | 23                   | 125                       | 23.8          | 6           | 200                    | 1.118                  | 1.006 | 0.447 | 1 <sup>1)</sup> |
| 50 Volt @ 85°C    |           |                  |                   |                        |                      |                           |               |             |                        |                        |       |       |                 |
| TPSA154*050#9000  | A         | 0.15             | 50                | 85                     | 33                   | 125                       | 0.5           | 4           | 9000                   | 0.091                  | 0.082 | 0.037 | 1               |
| TPSA224*050#7000  | A         | 0.22             | 50                | 85                     | 33                   | 125                       | 0.5           | 4           | 7000                   | 0.104                  | 0.093 | 0.041 | 1               |
| TPSA334*050#7000  | A         | 0.33             | 50                | 85                     | 33                   | 125                       | 0.5           | 4           | 7000                   | 0.104                  | 0.093 | 0.041 | 1               |
| TPSA474*050#6500  | A         | 0.47             | 50                | 85                     | 33                   | 125                       | 0.5           | 4           | 6500                   | 0.107                  | 0.097 | 0.043 | 1               |
| TPSB474*050#6000  | B         | 0.47             | 50                | 85                     | 33                   | 125                       | 0.5           | 4           | 6000                   | 0.119                  | 0.107 | 0.048 | 1               |
| TPSC474*050#2300  | C         | 0.47             | 50                | 85                     | 33                   | 125                       | 0.5           | 4           | 2300                   | 0.219                  | 0.197 | 0.087 | 1               |
| TPSB684*050#4000  | B         | 0.68             | 50                | 85                     | 33                   | 125                       | 0.5           | 4           | 4000                   | 0.146                  | 0.131 | 0.058 | 1               |
| TPSB105*050#3000  | B         | 1                | 50                | 85                     | 33                   | 125                       | 0.5           | 6           | 3000                   | 0.168                  | 0.151 | 0.067 | 1               |
| TPSC105*050#2500  | C         | 1                | 50                | 85                     | 33                   | 125                       | 0.5           | 4           | 2500                   | 0.210                  | 0.189 | 0.084 | 1               |
| TPSC155*050#1500  | C         | 1.5              | 50                | 85                     | 33                   | 125                       | 0.8           | 6           | 1500                   | 0.271                  | 0.244 | 0.108 | 1               |
| TPSC155*050#2000  | C         | 1.5              | 50                | 85                     | 33                   | 125                       | 0.8           | 6           | 2000                   | 0.235                  | 0.211 | 0.094 | 1               |
| TPSC225*050#1500  | C         | 2.2              | 50                | 85                     | 33                   | 125                       | 1.1           | 8           | 1500                   | 0.271                  | 0.244 | 0.108 | 1               |
| TPSD225*050#1200  | D         | 2.2              | 50                | 85                     | 33                   | 125                       | 1.1           | 6           | 1200                   | 0.354                  | 0.318 | 0.141 | 1 <sup>1)</sup> |
| TPSC335*050#1000  | C         | 3.3              | 50                | 85                     | 33                   | 125                       | 1.6           | 6           | 1000                   | 0.332                  | 0.298 | 0.133 | 1               |
| TPSD335*050#0800  | D         | 3.3              | 50                | 85                     | 33                   | 125                       | 1.7           | 6           | 800                    | 0.433                  | 0.390 | 0.173 | 1 <sup>1)</sup> |
| TPSC475*050#0800  | C         | 4.7              | 50                | 85                     | 33                   | 125                       | 2.4           | 6           | 800                    | 0.371                  | 0.334 | 0.148 | 1               |
| TPSD475*050#0250  | D         | 4.7              | 50                | 85                     | 33                   | 125                       | 2.4           | 6           | 250                    | 0.775                  | 0.697 | 0.310 | 1 <sup>1)</sup> |
| TPSD475*050#0300  | D         | 4.7              | 50                | 85                     | 33                   | 125                       | 2.4           | 6           | 300                    | 0.707                  | 0.636 | 0.283 | 1 <sup>1)</sup> |
| TPSD475*050#0500  | D         | 4.7              | 50                | 85                     | 33                   | 125                       | 2.4           | 6           | 500                    | 0.548                  | 0.493 | 0.219 | 1 <sup>1)</sup> |
| TPSD475*050#0700  | D         | 4.7              | 50                | 85                     | 33                   | 125                       | 2.4           | 6           | 700                    | 0.463                  | 0.417 | 0.185 | 1 <sup>1)</sup> |
| TPSX475*050#0500V | X         | 4.7              | 50                | 85                     | 33                   | 125                       | 2.4           | 6           | 500                    | 0.447                  | 0.402 | 0.179 | 3               |
| TPSD685*050#0200  | D         | 6.8              | 50                | 85                     | 33                   | 125                       | 3.4           | 6           | 200                    | 0.866                  | 0.779 | 0.346 | 1 <sup>1)</sup> |
| TPSD685*050#0300  | D         | 6.8              | 50                | 85                     | 33                   | 125                       | 3.4           | 6           | 300                    | 0.707                  | 0.636 | 0.283 | 1 <sup>1)</sup> |
| TPSD685*050#0500  | D         | 6.8              | 50                | 85                     | 33                   | 125                       | 3.4           | 6           | 500                    | 0.548                  | 0.493 | 0.219 | 1 <sup>1)</sup> |
| TPSD685*050#0600  | D         | 6.8              | 50                | 85                     | 33                   | 125                       | 3.4           | 6           | 600                    | 0.500                  | 0.450 | 0.200 | 1 <sup>1)</sup> |
| TPSD106*050#0500  | D         | 10               | 50                | 85                     | 33                   | 125                       | 5             | 6           | 500                    | 0.548                  | 0.493 | 0.219 | 1 <sup>1)</sup> |
| TPSE106*050#0250  | E         | 10               | 50                | 85                     | 33                   | 125                       | 5             | 6           | 250                    | 0.812                  | 0.731 | 0.325 | 1 <sup>1)</sup> |
| TPSE106*050#0300  | E         | 10               | 50                | 85                     | 33                   | 125                       | 5             | 6           | 300                    | 0.742                  | 0.667 | 0.297 | 1 <sup>1)</sup> |
| TPSE106*050#0400  | E         | 10               | 50                | 85                     | 33                   | 125                       | 5             | 6           | 400                    | 0.642                  | 0.578 | 0.257 | 1 <sup>1)</sup> |
| TPSE106*050#0500  | E         | 10               | 50                | 85                     | 33                   | 125                       | 5             | 6           | 500                    | 0.574                  | 0.517 | 0.230 | 1 <sup>1)</sup> |
| TPSE156*050#0250  | E         | 15               | 50                | 85                     | 33                   | 125                       | 7.5           | 6           | 250                    | 0.812                  | 0.731 | 0.325 | 1 <sup>1)</sup> |
| TPSV156*050#0250  | V         | 15               | 50                | 85                     | 33                   | 125                       | 7.5           | 6           | 250                    | 1.000                  | 0.900 | 0.400 | 1 <sup>1)</sup> |

1<sup>1)</sup> –Dry pack option (see How to order) is recommended for reduction of stress during soldering.

Dry pack parts are treated as MSL 3.

For AEC-Q200 availability, please contact KYOCERA AVX.

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

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

DCL is measured at rated voltage after 5 minutes.

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 253.

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

# TPS Series

## Low ESR



### QUALIFICATION TABLE

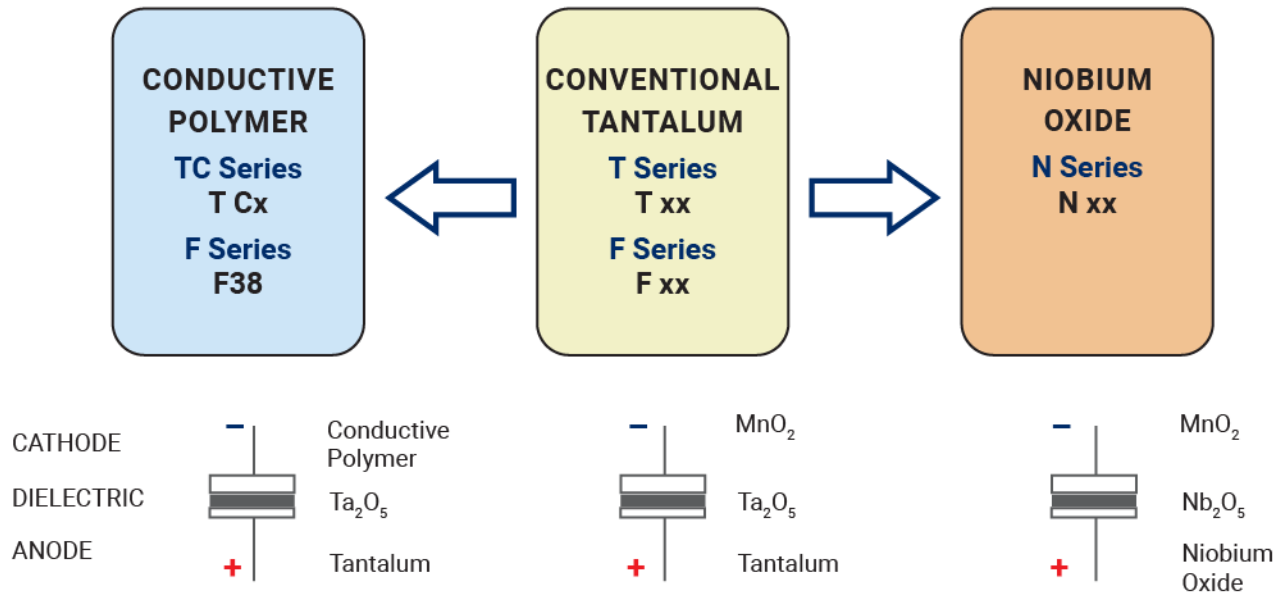
| TEST                  | TPS series (Temperature range -55°C to +125°C)                                                                                                                                                            |               |               |                    |                                    |           |           |           |            |           |
|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|---------------|--------------------|------------------------------------|-----------|-----------|-----------|------------|-----------|
|                       | Condition                                                                                                                                                                                                 |               |               | Characteristics    |                                    |           |           |           |            |           |
| Endurance             | Apply rated voltage (Ur) at 85°C and / or category voltage (Uc) at 125°C for 2000 hours through a circuit impedance of $\leq 0.1\Omega/V$ . Stabilize at room temperature for 1-2 hours before measuring. |               |               | Visual examination | no visible damage                  |           |           |           |            |           |
|                       |                                                                                                                                                                                                           |               |               | DCL                | 1.5 x initial limit                |           |           |           |            |           |
|                       |                                                                                                                                                                                                           |               |               | $\Delta C/C$       | within $\pm 10\%$ of initial value |           |           |           |            |           |
|                       |                                                                                                                                                                                                           |               |               | DF                 | initial limit                      |           |           |           |            |           |
|                       |                                                                                                                                                                                                           |               |               | ESR                | 1.25 x initial limit               |           |           |           |            |           |
| Humidity              | Store at 65°C and 95% relative humidity for 500 hours, with no applied voltage. Stabilize at room temperature and humidity for 1-2 hours before measuring.                                                |               |               | Visual examination | no visible damage                  |           |           |           |            |           |
|                       |                                                                                                                                                                                                           |               |               | DCL                | 1.5 x initial limit                |           |           |           |            |           |
|                       |                                                                                                                                                                                                           |               |               | $\Delta C/C$       | within $\pm 10\%$ of initial value |           |           |           |            |           |
|                       |                                                                                                                                                                                                           |               |               | DF                 | 1.2 x initial limit                |           |           |           |            |           |
|                       |                                                                                                                                                                                                           |               |               | ESR                | 1.25 x initial limit               |           |           |           |            |           |
| Temperature Stability | Step                                                                                                                                                                                                      | Temperature°C | Duration(min) |                    | +20°C                              | -55°C     | +20°C     | +85°C     | +125°C     | +20°C     |
|                       | 1                                                                                                                                                                                                         | +20           | 15            | DCL                | IL*                                | n/a       | IL*       | 10 x IL*  | 12.5 x IL* | IL*       |
|                       | 2                                                                                                                                                                                                         | -55           | 15            | $\Delta C/C$       | n/a                                | +0/-10%   | $\pm 5\%$ | +10/-0%   | +12/-0%    | $\pm 5\%$ |
|                       | 3                                                                                                                                                                                                         | +20           | 15            | DF                 | IL*                                | 1.5 x IL* | IL*       | 1.5 x IL* | 2 x IL*    | IL*       |
|                       | 4                                                                                                                                                                                                         | +85           | 15            |                    |                                    |           |           |           |            |           |
|                       | 5                                                                                                                                                                                                         | +125          | 15            |                    |                                    |           |           |           |            |           |
| Surge Voltage         | Apply 1.3x category voltage (Uc) at 125°C for 1000 cycles of duration 6 min (30 sec charge, 5 min 30 sec discharge) through a charge / discharge resistance of 1000 $\Omega$                              |               |               | Visual examination | no visible damage                  |           |           |           |            |           |
|                       |                                                                                                                                                                                                           |               |               | DCL                | initial limit                      |           |           |           |            |           |
|                       |                                                                                                                                                                                                           |               |               | $\Delta C/C$       | within $\pm 5\%$ of initial value  |           |           |           |            |           |
|                       |                                                                                                                                                                                                           |               |               | DF                 | initial limit                      |           |           |           |            |           |
|                       |                                                                                                                                                                                                           |               |               | ESR                | 1.25 x initial limit               |           |           |           |            |           |
| Mechanical Shock      | MIL-STD-202, Method 213, Condition C                                                                                                                                                                      |               |               | Visual examination | no visible damage                  |           |           |           |            |           |
|                       |                                                                                                                                                                                                           |               |               | DCL                | initial limit                      |           |           |           |            |           |
|                       |                                                                                                                                                                                                           |               |               | $\Delta C/C$       | within $\pm 5\%$ of initial value  |           |           |           |            |           |
|                       |                                                                                                                                                                                                           |               |               | DF                 | initial limit                      |           |           |           |            |           |
|                       |                                                                                                                                                                                                           |               |               | ESR                | initial limit                      |           |           |           |            |           |
| Vibration             | MIL-STD-202, Method 204, Condition D                                                                                                                                                                      |               |               | Visual examination | no visible damage                  |           |           |           |            |           |
|                       |                                                                                                                                                                                                           |               |               | DCL                | initial limit                      |           |           |           |            |           |
|                       |                                                                                                                                                                                                           |               |               | $\Delta C/C$       | within $\pm 5\%$ of initial value  |           |           |           |            |           |
|                       |                                                                                                                                                                                                           |               |               | DF                 | initial limit                      |           |           |           |            |           |
|                       |                                                                                                                                                                                                           |               |               | ESR                | initial limit                      |           |           |           |            |           |

\*Initial Limit

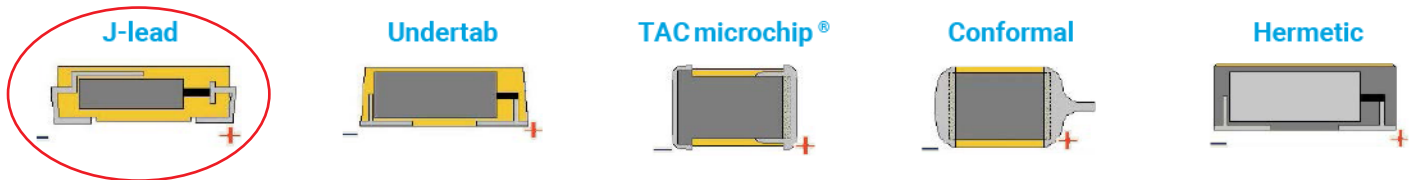
# TPS Series

## Low ESR

### SOLID ELECTROLYTIC CAPACITOR ROADMAP



### FIVE CAPACITOR CONSTRUCTION STYLES



### SERIES LINE UP : CONVENTIONAL SMD MnO<sub>2</sub>

