

SMD Aluminum Solid Capacitors with Conductive Polymer



FEATURES

- Vishay OS-CON series utilizes a polymerized organic semiconductor as electrolyte
- Features superior heat-proof characteristics compared with previous OS-CON series
- For power supply and other applications where high ripple current and low impedance are necessary
- Rated ripple current values are guaranteed at 105 °C
- No need to consider derating on maximum allowable ripple current
- SMD version with base plate, containing no lead (Pb)
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

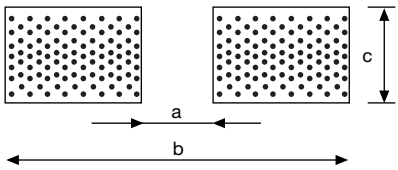

**RoHS
COMPLIANT**

| QUICK REFERENCE DATA | | | |
|---|--|--|--------------|
| DESCRIPTION | VALUE | | |
| Operating temperature range | -55 °C to +105 °C | | |
| Capacitance tolerance at 120 Hz | M: ± 20 % | | |
| Tangent of loss angle (tan δ) at 120 Hz | Values in Electrical Data and Ordering Information table | | |
| Leakage current (µA/2 min) (or less) ⁽¹⁾ | Values in Electrical Data and Ordering Information table | | |
| Equivalent series resistance (Ω), (100 kHz to 300 kHz) | Values in Electrical Data and Ordering Information table | | |
| Characteristics at high temp. and low temp. Impedance ratio at 100 kHz, +20 °C | -55 °C | Z/Z _{20 °C} | 0.75 to 1.25 |
| | +105 °C | Z/Z _{20 °C} | 0.75 to 1.25 |
| Endurance +105 °C, 2000 h Rated voltage applied (20 V for 25 V products) (1000 h for A5 / B6 sizes) | ΔC/C | Within ± 20 % | |
| | tan δ | ≤ 1.5 x the value of tangent of loss angle | |
| | Leakage current | ≤ the value of leakage current | |
| Damp heat (steady state) (+60 °C, 90 % to 95 % RH, 1000 h, no voltage) (500 h for A5 / B6 sizes) | ΔC/C | Within ± 20 % | |
| | tan δ | ≤ 1.5 x the value of tangent of loss angle | |
| | Leakage current | ≤ the value of leakage current after voltage treatment | |

Note

⁽¹⁾ If any doubt arises, measure the current after applying voltage (voltage treatment). Voltage treatment: the rated voltage is applied to Vishay OS-CON (2.5 WV to 20 WV) for 120 min at 105 °C.

| DIMENSIONS in millimeters | | | | | | | | |
|---------------------------|-----------|--------------|-----------|------------|------------|------------|------------|------------|
| | SIZE CODE | Ø D ± 0.5 | L max. | W ± 0.2 | H ± 0.2 | C ± 0.2 | R | P ± 0.2 |
| | | A5 | 4.0 | 5.5 | 4.3 | 4.3 | 5.0 | 0.5 to 0.8 |
| | B6 | 5.0 | 6.0 | 5.3 | 5.3 | 6.0 | 0.5 to 0.8 | 1.4 |
| | C6 | 6.3 | 6.0 | 6.6 | 6.6 | 7.3 | 0.5 to 0.8 | 2.1 |
| | E7 | 8.0 | 7.0 | 8.3 | 8.3 | 9.0 | 0.5 to 0.8 | 3.2 |
| | F8 | 10.0 | 8.0 | 10.3 | 10.3 | 11.0 | 0.5 to 0.8 | 4.6 |
| | E12 | 8.0 | 12.0 | 8.3 | 8.3 | 9.0 | 0.8 to 1.1 | 3.2 |
| | F12 | 10.0 | 12.7 | 10.3 | 10.3 | 11.0 | 0.8 to 1.1 | 4.6 |

| RECOMMENDED LAND PATTERN DIMENSIONS in millimeters | | | | |
|---|-----------|-----|------|-----|
|  | SIZE CODE | a | b | c |
| | A5 | 1.0 | 6.2 | 1.6 |
| | B6 | 1.4 | 7.4 | 1.6 |
| | C6 | 2.1 | 9.1 | 1.6 |
| | E7 | 2.8 | 11.1 | 1.9 |
| | F8 | 4.3 | 13.1 | 1.9 |
| | E12 | 2.8 | 11.1 | 1.9 |
| | F12 | 4.3 | 13.1 | 1.9 |

| CASE CODE LIST | | | | | | | |
|---------------------------|---------------------|-------|-------|---------|--------|--------|------|
| CAPACITANCE (μ F) | WV ⁽¹⁾ | 2.5 | 4 | 6.3 | 10 | 16 | 20 |
| | (SV) ⁽²⁾ | (3.3) | (5.2) | (8.2) | (11.5) | (18.4) | (23) |
| 3.3 | - | - | - | - | - | A5 | - |
| 4.7 | - | - | - | - | A5 | - | - |
| 6.8 | - | - | - | - | A5 | - | - |
| 10.0 | - | - | - | - | A5 | - | B6 |
| 15.0 | - | - | -vb | - | A5 | B6 | - |
| 22.0 | - | - | - | A5 | - | B6 | C6 |
| 27.0 | - | - | - | - | - | - | C6 |
| 33.0 | - | - | A5 | - | B6 | - | E7 |
| 39.0 | - | - | B6 | - | - | C6 | - |
| 47.0 | - | - | - | B6 | C6 | - | E7 |
| 56.0 | - | - | - | - | C6 | E7 | F8 |
| 68.0 | - | - | B6 | - | - | - | F8 |
| 82.0 | - | - | - | C6 | - | E7 | - |
| 100.0 | - | - | - | C6 | - | F8 | E12 |
| 120.0 | - | - | - | - | E7 | - | - |
| 150.0 | - | - | C6 | - | E7, F8 | F8 | F12 |
| 180.0 | - | - | - | - | - | E12 | - |
| 220.0 | - | - | - | E7, F8 | - | - | - |
| 270.0 | - | - | - | - | F8 | - | - |
| 330.0 | - | - | E7 | F8 | E12 | F12 | - |
| 470.0 | - | - | - | F8, E12 | - | - | - |
| 560.0 | - | - | E12 | - | F12 | - | - |
| 680.0 | - | E12 | F8 | - | - | - | - |
| 820.0 | - | - | - | F12 | - | - | - |
| 1200.0 | - | - | F12 | - | - | - | - |
| 1500.0 | - | F12 | - | - | - | - | - |

Notes

⁽¹⁾ WV = Rated Voltage.

⁽²⁾ (SV) = Surge Voltage (at room temperature). The description contents are subject to change due to technical improvement without notice. Please ask for latest specifications for order and use.



| ELECTRICAL DATA AND ORDERING INFORMATION | | | | | | | |
|--|------------------------|--------------|--|--|----------------------------------|--|----------------------------|
| U _R (V) | C _R (μF) | CASE CODE | MAX. ESR (100 kHz to 300 kHz) (mΩ) | ALLOWABLE RIPPLE CURRENT AT 100 kHz, +105 °C (mA) | MAX. TANGENT OF LOSS ANGLE | MAX. LEAKAGE CURRENT (μA) (after 2 min) | PART NUMBER ⁽¹⁾ |
| 2.5 | 680 | E12 | 16 | 4080 | 0.15 | 340 | 94SVP687X02R5E12 |
| | 1500 | F12 | 13 | 5230 | 0.18 | 750 | 94SVP158X02R5F12 |
| 4 | 33 | A5 | 200 | 740 | 0.15 | 66.0 | 94SVP336X0004A5 |
| | 39 | B6 | 70 | 1100 | 0.12 | 78 | 94SVP396X0004B6 |
| | 68 | B6 | 70 | 1100 | 0.12 | 136 | 94SVP686X0004B6 |
| | 150 | C6 | 50 | 1620 | 0.12 | 120 | 94SVP157X0004C6 |
| | 330 | E7 | 35 | 2560 | 0.12 | 264 | 94SVP337X0004E7 |
| | 680 | F8 | 25 | 3700 | 0.12 | 544 | 94SVP687X0004F8 |
| | 560 | E12 | 16 | 4080 | 0.15 | 448 | 94SVP567X0004E12 |
| | 1200 | F12 | 13 | 5230 | 0.18 | 960 | 94SVP128X0004F12 |
| 6.3 | 22 | A5 | 220 | 700 | 0.12 | 69.3 | 94SVP226X06R3A5 |
| | 47 | B6 | 90 | 1060 | 0.12 | 148 | 94SVP476X06R3B6 |
| | 82 | C6 | 50 | 1570 | 0.12 | 103 | 94SVP826X06R3C6 |
| | 100 | C6 | 40 | 1810 | 0.12 | 126 | 94SVP107X06R3C6 |
| | 220 | E7 | 35 | 2560 | 0.12 | 277 | 94SVP227X06R3E7 |
| | 220 | F8 | 30 | 3020 | 0.12 | 277 | 94SVP227X06R3F8 |
| | 330 | F8 | 25 | 3300 | 0.12 | 416 | 94SVP337X06R3F8 |
| | 470 | E12 | 17 | 3960 | 0.15 | 592 | 94SVP477X06R3E12 |
| | 470 | F8 | 25 | 3700 | 0.12 | 592 | 94SVP477X06R3F8 |
| | 820 | F12 | 14 | 5040 | 0.15 | 775 | 94SVP827X06R3F12 |
| 10 | 4.7 | A5 | 260 | 660 | 0.08 | 23.5 | 94SVP475X0010A5 |
| | 6.8 | A5 | 260 | 660 | 0.09 | 34.0 | 94SVP685X0010A5 |
| | 10 | A5 | 240 | 670 | 0.10 | 50.0 | 94SVP106X0010A5 |
| | 15 | A5 | 240 | 700 | 0.10 | 75.0 | 94SVP156X0010A5 |
| | 33 | B6 | 130 | 990 | 0.15 | 165 | 94SVP336X0010B6 |
| | 47 | C6 | 60 | 1450 | 0.12 | 94 | 94SVP476X0010C6 |
| | 56 | C6 | 55 | 1510 | 0.12 | 112 | 94SVP566X0010C6 |
| | 120 | E7 | 40 | 2120 | 0.12 | 240 | 94SVP127X0010E7 |
| | 150 | E7 | 35 | 2560 | 0.12 | 300 | 94SVP157X0010E7 |
| | 150 | F8 | 35 | 2670 | 0.12 | 300 | 94SVP157X0010F8 |
| | 270 | F8 | 30 | 3020 | 0.12 | 540 | 94SVP277X0010F8 |
| | 330 | E12 | 19 | 3740 | 0.15 | 660 | 94SVP337X0010E12 |
| 560 | F12 | 15 | 4870 | 0.15 | 840 | 94SVP567X0010F12 | |
| 16 | 3.3 | A5 | 280 | 590 | 0.07 | 26.4 | 94SVP335X0016A5 |
| | 15 | B6 | 150 | 920 | 0.10 | 120 | 94SVP156X0016B6 |
| | 22 | B6 | 120 | 980 | 0.10 | 176 | 94SVP226X0016B6 |
| | 39 | C6 | 65 | 1390 | 0.10 | 125 | 94SVP396X0016C6 |
| | 56 | E7 | 50 | 1800 | 0.12 | 179 | 94SVP566X0016E7 |
| | 82 | E7 | 45 | 1890 | 0.12 | 262 | 94SVP826X0016E7 |
| | 100 | F8 | 40 | 2400 | 0.12 | 320 | 94SVP107X0016F8 |
| | 150 | F8 | 35 | 2670 | 0.12 | 480 | 94SVP157X0016F8 |
| | 180 | E12 | 22 | 3480 | 0.15 | 576 | 94SVP187X0016E12 |
| | 330 | F12 | 17 | 4580 | 0.15 | 792 | 94SVP337X0016F12 |
| 20 | 10 | B6 | 170 | 850 | 0.10 | 100 | 94SVP106X0020B6 |
| | 22 | C6 | 65 | 1390 | 0.10 | 88 | 94SVP226X0020C6 |
| | 27 | C6 | 60 | 1450 | 0.10 | 108 | 94SVP276X0020C6 |
| | 33 | E7 | 50 | 1700 | 0.12 | 132 | 94SVP336X0020E7 |
| | 47 | E7 | 50 | 1750 | 0.12 | 188 | 94SVP476X0020E7 |
| | 56 | F8 | 45 | 2200 | 0.12 | 224 | 94SVP566X0020F8 |
| | 68 | F8 | 45 | 2200 | 0.12 | 272 | 94SVP686X0020F8 |
| | 100 | E12 | 25 | 3260 | 0.15 | 400 | 94SVP107X0020E12 |
| | 150 | F12 | 21 | 4220 | 0.15 | 600 | 94SVP157X0020F12 |

Note

(1) Part numbers shown are for ± 20 % capacitance tolerance (X0).

Statements about product lifetime are based on calculations and internal testing. They should only be interpreted as estimations. Also due to external factors, the lifetime in the field application may deviate from the calculated lifetime. In general, nothing stated herein shall be construed as a guarantee of durability.



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