

Type AVE -40 °C to 85 °C General Purpose SMT Capacitors

Aluminum Electrolytic Capacitors for Filtering and Bypass



Type AVE capacitors are a great value for filter and bypass applications not requiring wide temperature performance or high ripple current. Their vertical cylindrical cases facilitate automatic mounting and reflow soldering and offer a significant savings over tantalum capacitors.

Highlights

- +85 °C, Up to 2000 Hour Load Life
- Low Impedance
- Voltage Range: 4 Vdc to 100 Vdc

Specifications

Operating Temperature: -40 °C to +85 °C

Rated Voltage: 4, 6.3, 10, 16, 25, 35, 50, 63 & 100 Vdc

Capacitance: 0.1 µF to 1500 µF

Capacitance Tolerance: ±20% @ 120 Hz and +20 °C

Leakage Current: 0.01 CV or 3 µA @ +20 °C, after two minutes (whichever is greater)

Dissipation Factor:

| 4V | 6.3V | 10 V | 16 V | 25 V | 35 V | 50 V | 63 V | 100 V |
|------|------|------|------|------|------|------|------|-------|
| 0.42 | 0.28 | 0.24 | 0.20 | 0.14 | 0.12 | 0.10 | 0.10 | 0.10 |

Low Temperature Characteristics @ 120 Hz:

| Rated Voltage (Vdc) | | 4 | 6.3 | 10 | 16 | 25 | 35 | 50 | 63 | 100 |
|---------------------|-------------------|-------------------|-----|----|----|----|----|----|----|-----|
| Impedance | Z(-25°C)/Z(+20°C) | 7 | 4 | 3 | 2 | 2 | 2 | 2 | 2 | 2 |
| | Ratio | Z(-40°C)/Z(+20°C) | 15 | 8 | 5 | 4 | 3 | 3 | 3 | 3 |

Ripple Current Multipliers:

| Frequency | 50 Hz | 120 Hz | 1 kHz | 10 kHz up | |
|-----------|------------|--------|-------|-----------|------|
| Vdc (V) | Multiplier | | | | |
| | ≤ 16 | 0.80 | 1.00 | 1.15 | 1.25 |
| | 25 - 35 | 0.80 | 1.00 | 1.25 | 1.40 |
| | 50 - 63 | 0.80 | 1.00 | 1.35 | 1.50 |
| | 100 | 0.70 | 1.00 | 1.35 | 1.50 |

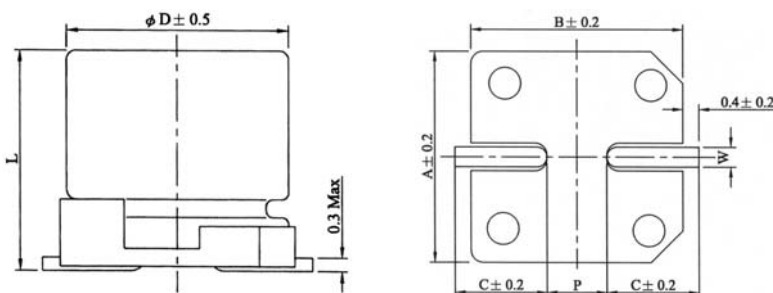


Complies with the EU Directive 2002/95/EC requirement restricting the use of Lead (Pb), Mercury (Hg), Cadmium (Cd), Hexavalent chromium (Cr(VI)), PolyBrominated Biphenyls (PBB) and PolyBrominated Diphenyl Ethers (PBDE).

Life Test: 2000 h @ 85 °C
 Δ Capacitance ±20% (4 WV: ±30%)
 DF: ≤ 200% of limit (4 WV: ±30%)
 DCL: ≤ 100% of limit

Shelf Test: 1000 h @ 85 °C
 Δ Capacitance ±20% (4 WV: ±30%)
 DF: ≤ 200% of limit (4 WV: ±30%)

Outline Drawing



| Case Code | Dimensions in millimeters (mm) | | | | | | |
|-----------|--------------------------------|---------|------|------|-----|------------|-------|
| | ∅ D | L | A | B | C | W | P±0.2 |
| A | 3 | 5.3±0.2 | 3.3 | 3.3 | 1.5 | .45 ~ 0.75 | 0.8 |
| B | 4 | 5.3±0.2 | 4.3 | 4.3 | 2.0 | 0.5 to 0.8 | 1.0 |
| C | 5 | 5.3±0.2 | 5.3 | 5.3 | 2.3 | 0.5 to 0.8 | 1.5 |
| D | 6.3 | 5.3±0.2 | 6.6 | 6.6 | 2.7 | 0.5 to 0.8 | 2.0 |
| X | 6.3 | 7.7±0.3 | 6.6 | 6.6 | 2.7 | 0.5 to 0.8 | 2.0 |
| E | 8 | 6.5±0.3 | 8.4 | 8.4 | 3.4 | 0.5 to 0.8 | 2.3 |
| F | 8 | 10±0.5 | 8.4 | 8.4 | 3.0 | 0.7 to 1.1 | 3.1 |
| G | 10 | 10±0.5 | 10.4 | 10.4 | 3.3 | 0.7 to 1.1 | 4.7 |

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Part Numbering System

| | | | | | | |
|-------------|------------------------|--------------------|---------------------|---------------------|------------------|--------------------------|
| AVE | 106 | M | 16 | B | 12T | -F |
| | | | | | | |
| Type | Capacitance | Capacitance | Voltage | Case | Packaging | RoHS |
| | 104 = 0.1 µF | Tolerance | 04 = 4 Vdc | 06 = 6.3 Vdc | Code | Information |
| | 105 = 1.0 µF | M = ±20% | 10 = 10 Vdc | 16 = 16 Vdc | B = B | 12 = Carrier Tape |
| | 106 = 10.0 µF | | 25 = 25 Vdc | 35 = 35 Vdc | | Width (mm) |
| | 107 = 100.0 µF | | 50 = 50 Vdc | 63 = 63 Vdc | | T = Tape & Reel |
| | 108 = 1000.0 µF | | 2A = 100 Vdc | | | |

Ratings

| Cap (µF) | Catalog Part Number | Max. DCL 2 min. (µA) | Max. DF @120Hz/20°C (%) | Max. E.S.R. @120Hz/20°C (Ω) | Max. | Case Code | Size D x L (mm) | Qty. Per Reel (Each) |
|--------------------------------|------------------------|----------------------------|-------------------------------|-----------------------------------|---------------------------------------|--------------|-----------------------|----------------------------|
| | | | | | Ripple Current @120Hz/85°C (mA) | | | |
| 4 Vdc (5 Vdc Surge) | | | | | | | | |
| 22 | AVE226M04A12T-F | 3 | 0.42 | 31.65 | 14 | A | 3x5.3 | 2000 |
| 33 | AVE336M04B12T-F | 3 | 0.42 | 21.10 | 31 | B | 4x5.3 | 2000 |
| 47 | AVE476M04B12T-F | 3 | 0.42 | 14.81 | 37 | B | 4x5.3 | 2000 |
| 68 | AVE686M04C12T-F | 3 | 0.42 | 10.24 | 63 | C | 5x5.3 | 1000 |
| 100 | AVE107M04D16T-F | 4 | 0.42 | 6.96 | 110 | D | 6.3x5.3 | 1000 |
| 6.3 Vdc (8 Vdc Surge) | | | | | | | | |
| 22 | AVE226M06B12T-F | 3 | 0.28 | 21.10 | 23 | B | 4x5.3 | 2000 |
| 33 | AVE336M06B12T-F | 3 | 0.28 | 14.07 | 31 | B | 4x5.3 | 2000 |
| 47 | AVE476M06C12T-F | 3 | 0.28 | 9.88 | 52 | C | 5x5.3 | 1000 |
| 68 | AVE686M06D16T-F | 4.3 | 0.28 | 6.83 | 89 | D | 6.3x5.3 | 1000 |
| 100 | AVE107M06D16T-F | 6.3 | 0.28 | 4.64 | 120 | D | 6.3x5.3 | 1000 |
| 220 | AVE227M06X16T-F | 13.9 | 0.28 | 2.11 | 123 | X | 6.3x7.7 | 1000 |
| 220 | AVE227M06E16T-F | 13.9 | 0.28 | 2.11 | 155 | E | 8x6.5 | 1000 |
| 330 | AVE337M06X16T-F | 20.8 | 0.28 | 1.41 | 139 | X | 6.3x7.7 | 1000 |
| 330 | AVE337M06E16T-F | 20.8 | 0.28 | 1.41 | 155 | E | 8x6.5 | 1000 |
| 470 | AVE477M06F24T-F | 29.6 | 0.28 | 0.99 | 252 | F | 8x10 | 500 |
| 1000 | AVE108M06G24T-F | 63.0 | 0.28 | 0.46 | 458 | G | 10x10 | 500 |
| 1500 | AVE158M06G24T-F | 94.5 | 0.28 | 0.31 | 458 | G | 10x10 | 500 |
| 10 Vdc (13 Vdc Surge) | | | | | | | | |
| 10 | AVE106M10B12T-F | 3 | 0.24 | 39.79 | 23 | B | 4x5.3 | 2000 |
| 22 | AVE226M10C12T-F | 3 | 0.24 | 18.09 | 39 | C | 5x5.3 | 1000 |
| 33 | AVE336M10C12T-F | 3.3 | 0.24 | 12.06 | 48 | C | 5x5.3 | 1000 |
| 47 | AVE476M10D16T-F | 4.7 | 0.24 | 8.47 | 67 | D | 6.3x5.3 | 1000 |
| 68 | AVE686M10D16T-F | 6.8 | 0.24 | 5.85 | 98 | D | 6.3x5.3 | 1000 |
| 100 | AVE107M10X16T-F | 10 | 0.24 | 3.98 | 108 | X | 6.3x7.7 | 1000 |
| 100 | AVE107M10E16T-F | 10 | 0.24 | 3.98 | 155 | E | 8x6.5 | 1000 |
| 220 | AVE227M10X16T-F | 22 | 0.24 | 1.81 | 130 | X | 6.3x7.7 | 1000 |
| 220 | AVE227M10E16T-F | 22 | 0.24 | 1.81 | 155 | E | 8x6.5 | 1000 |
| 330 | AVE337M10F24T-F | 33 | 0.24 | 1.21 | 252 | F | 8x10 | 500 |
| 470 | AVE477M10G24T-F | 47 | 0.24 | 0.85 | 458 | G | 10x10 | 500 |
| 1000 | AVE108M10G24T-F | 100 | 0.24 | 0.40 | 458 | G | 10x10 | 500 |

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Ratings

| Cap (μ F) | Catalog Part Number | Max. DCL 2 min. (μ A) | Max. DF @120Hz/20°C (%) | Max. E.S.R. @120Hz/20°C (Ω) | Max. | Case Code | Size D x L (mm) | Qty. Per Reel (Each) |
|--------------------------------|------------------------|----------------------------------|-------------------------------|--|---------------------------------------|--------------|-----------------------|----------------------------|
| | | | | | Ripple Current @120Hz/85°C (mA) | | | |
| 16 Vdc (20 Vdc Surge) | | | | | | | | |
| 10 | AVE106M16A12T-F | 3.0 | 0.2 | 33.16 | 14 | A | 3x5.3 | 2000 |
| 10 | AVE106M16B12T-F | 3.0 | 0.2 | 33.16 | 26 | B | 4x5.3 | 2000 |
| 22 | AVE226M16C12T-F | 3.5 | 0.2 | 15.07 | 44 | C | 5x5.3 | 1000 |
| 33 | AVE336M16D16T-F | 5.3 | 0.2 | 10.05 | 63 | D | 6.3x5.3 | 1000 |
| 47 | AVE476M16D16T-F | 7.5 | 0.2 | 7.05 | 75 | D | 6.3x5.3 | 1000 |
| 68 | AVE686M16D16T-F | 10.9 | 0.2 | 4.88 | 103 | D | 6.3x5.3 | 1000 |
| 100 | AVE107M16X16T-F | 16.0 | 0.2 | 3.32 | 108 | X | 6.3x7.7 | 1000 |
| 100 | AVE107M16E16T-F | 16.0 | 0.2 | 3.32 | 155 | E | 8x6.5 | 1000 |
| 220 | AVE227M16X16T-F | 35.2 | 0.2 | 1.51 | 124 | X | 6.3x7.7 | 1000 |
| 220 | AVE227M16F24T-F | 35.2 | 0.2 | 1.51 | 252 | F | 8x10 | 500 |
| 330 | AVE337M16F24T-F | 52.8 | 0.2 | 1.00 | 252 | F | 8x10 | 500 |
| 470 | AVE477M16G24T-F | 75.2 | 0.2 | 0.71 | 458 | G | 10x10 | 500 |
| 25 Vdc (31 Vdc Surge) | | | | | | | | |
| 4.7 | AVE475M25B12T-F | 3.0 | 0.14 | 49.38 | 19 | B | 4x5.3 | 2000 |
| 10 | AVE106M25C12T-F | 3.0 | 0.14 | 23.21 | 32 | C | 5x5.3 | 1000 |
| 22 | AVE226M25D16T-F | 5.5 | 0.14 | 10.55 | 55 | D | 6.3x5.3 | 1000 |
| 33 | AVE336M25D16T-F | 8.3 | 0.14 | 7.03 | 67 | D | 6.3x5.3 | 1000 |
| 47 | AVE476M25X16T-F | 11.8 | 0.14 | 4.94 | 98 | X | 6.3x7.7 | 1000 |
| 47 | AVE476M25E16T-F | 11.8 | 0.14 | 4.94 | 155 | E | 8x6.5 | 1000 |
| 68 | AVE686M25X16T-F | 17.0 | 0.14 | 3.41 | 109 | X | 6.3x7.7 | 1000 |
| 68 | AVE686M25E16T-F | 17.0 | 0.14 | 3.41 | 155 | E | 8x6.5 | 1000 |
| 100 | AVE107M25X16T-F | 25.0 | 0.14 | 2.32 | 124 | X | 6.3x7.7 | 1000 |
| 100 | AVE107M25E16T-F | 25.0 | 0.14 | 2.32 | 155 | E | 8x6.5 | 1000 |
| 220 | AVE227M25F24T-F | 55.0 | 0.14 | 1.06 | 252 | F | 8x10 | 500 |
| 330 | AVE337M25G24T-F | 82.5 | 0.14 | 0.70 | 458 | G | 10x10 | 500 |
| 35 Vdc (44 Vdc Surge) | | | | | | | | |
| 3.3 | AVE335M35A12T-F | 3.0 | 0.12 | 60.28 | 8 | A | 3x5.3 | 2000 |
| 4.7 | AVE475M35B12T-F | 3.0 | 0.12 | 42.33 | 20 | B | 4x5.3 | 2000 |
| 10 | AVE106M35C12T-F | 3.5 | 0.12 | 19.89 | 34 | C | 5x5.3 | 1000 |
| 22 | AVE226M35D16T-F | 7.7 | 0.12 | 9.04 | 59 | D | 6.3x5.3 | 1000 |
| 33 | AVE336M35X16T-F | 11.6 | 0.12 | 6.03 | 85 | X | 6.3x7.7 | 1000 |
| 33 | AVE336M35E16T-F | 11.6 | 0.12 | 6.03 | 155 | E | 8x6.5 | 1000 |
| 47 | AVE476M35X16T-F | 16.5 | 0.12 | 4.23 | 98 | X | 6.3x7.7 | 1000 |
| 47 | AVE476M35E16T-F | 16.5 | 0.12 | 4.23 | 155 | E | 8x6.5 | 1000 |
| 68 | AVE686M35X16T-F | 23.8 | 0.12 | 2.93 | 109 | X | 6.3x7.7 | 1000 |
| 68 | AVE686M35E16T-F | 23.8 | 0.12 | 2.93 | 155 | E | 8x6.5 | 1000 |
| 100 | AVE107M35F24T-F | 35.0 | 0.12 | 1.99 | 252 | F | 8x10 | 500 |
| 220 | AVE227M35G24T-F | 77.0 | 0.12 | 0.90 | 458 | G | 10x10 | 500 |

Type AVE $-40\text{ }^{\circ}\text{C}$ to $85\text{ }^{\circ}\text{C}$ General Purpose SMT Capacitors

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Ratings

| Cap (μF) | Catalog Part Number | Max. DCL 2 min. (μA) | Max. DF @120Hz/20 $^{\circ}\text{C}$ (%) | Max. E.S.R. @120Hz/20 $^{\circ}\text{C}$ (Ω) | Max. | Case Code | Size D x L (mm) | Qty. Per Reel (Each) |
|----------------------------------|------------------------|---|--|---|--|--------------|-----------------------|----------------------------|
| | | | | | Ripple Current @120Hz/85 $^{\circ}\text{C}$ (mA) | | | |
| 50 Vdc (63 Vdc Surge) | | | | | | | | |
| .10 | AVE104M50B12T-F | 3.0 | 0.1 | 1657.83 | 3 | B | 4x5.3 | 2000 |
| .22 | AVE224M50B12T-F | 3.0 | 0.1 | 753.56 | 5 | B | 4x5.3 | 2000 |
| .33 | AVE334M50B12T-F | 3.0 | 0.1 | 502.37 | 6 | B | 4x5.3 | 2000 |
| .47 | AVE474M50B12T-F | 3.0 | 0.1 | 352.73 | 7 | B | 4x5.3 | 2000 |
| 1 | AVE105M50B12T-F | 3.0 | 0.1 | 165.78 | 10 | B | 4x5.3 | 2000 |
| 2.2 | AVE225M50B12T-F | 3.0 | 0.1 | 75.36 | 15 | B | 4x5.3 | 2000 |
| 3.3 | AVE335M50B12T-F | 3.0 | 0.1 | 50.24 | 19 | B | 4x5.3 | 2000 |
| 4.7 | AVE475M50C12T-F | 3.0 | 0.1 | 35.27 | 26 | C | 5x5.3 | 1000 |
| 10 | AVE106M50D16T-F | 5.0 | 0.1 | 16.58 | 44 | D | 6.3x5.3 | 1000 |
| 22 | AVE226M50X16T-F | 11.0 | 0.1 | 7.54 | 65 | X | 6.3x7.7 | 1000 |
| 22 | AVE226M50E16T-F | 11.0 | 0.1 | 7.54 | 155 | E | 8x6.5 | 1000 |
| 33 | AVE336M50X16T-F | 16.5 | 0.1 | 5.02 | 82 | X | 6.3x7.7 | 1000 |
| 33 | AVE336M50E16T-F | 16.5 | 0.1 | 5.02 | 155 | E | 8x6.5 | 1000 |
| 47 | AVE476M50X16T-F | 23.5 | 0.1 | 3.53 | 98 | X | 6.3x7.7 | 1000 |
| 47 | AVE476M50F24T-F | 23.5 | 0.1 | 3.53 | 252 | F | 8x10 | 500 |
| 68 | AVE686M50F24T-F | 34.0 | 0.1 | 2.44 | 252 | F | 8x10 | 500 |
| 100 | AVE107M50F24T-F | 50.0 | 0.1 | 1.66 | 252 | F | 8x10 | 500 |
| 220 | AVE227M50G24T-F | 110.0 | 0.1 | 0.75 | 458 | G | 10x10 | 500 |
| 63 Vdc (75 Vdc Surge) | | | | | | | | |
| 10 | AVE106M63E16T-F | 6.3 | 0.1 | 16.58 | 75 | E | 8x6.5 | 1000 |
| 22 | AVE226M63F24T-F | 13.9 | 0.1 | 7.54 | 139 | F | 8x10 | 500 |
| 33 | AVE336M63F24T-F | 20.8 | 0.1 | 5.02 | 139 | F | 8x10 | 500 |
| 47 | AVE476M63G24T-F | 29.6 | 0.1 | 3.53 | 226 | G | 10x10 | 500 |
| 68 | AVE686M63G24T-F | 42.8 | 0.1 | 2.44 | 226 | G | 10x10 | 500 |
| 100 | AVE107M63G24T-F | 63.0 | 0.1 | 1.66 | 226 | G | 10x10 | 500 |
| 100 Vdc (125 Vdc Surge) | | | | | | | | |
| 10 | AVE106M2AF24T-F | 10 | 0.1 | 16.58 | 94 | F | 8x10 | 500 |
| 22 | AVE226M2AG24T-F | 22 | 0.1 | 7.54 | 189 | G | 10x10 | 500 |
| 33 | AVE336M2AG24T-F | 33 | 0.1 | 5.02 | 189 | G | 10x10 | 500 |

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Нашей специализацией является поставка электронной компонентной базы двойного назначения, продукции таких производителей как XILINX, Intel (ex.ALTERA), Vicor, Microchip, Texas Instruments, Analog Devices, Mini-Circuits, Amphenol, Glenair.

Сотрудничество с глобальными дистрибьюторами электронных компонентов, предоставляет возможность заказывать и получать с международных складов практически любой перечень компонентов в оптимальные для Вас сроки.

На всех этапах разработки и производства наши партнеры могут получить квалифицированную поддержку опытных инженеров.

Система менеджмента качества компании отвечает требованиям в соответствии с ГОСТ Р ИСО 9001, ГОСТ РВ 0015-002 и ЭС РД 009

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