

Type AVEZ $-55\text{ }^{\circ}\text{C}$ to $+105\text{ }^{\circ}\text{C}$

Low Impedance SMT Aluminum Electrolytic Capacitors

For Filtering, Bypassing and Power Supply Decoupling



Type AVEZ Capacitors are rated for 1000 hours at $105\text{ }^{\circ}\text{C}$ with low impedance characteristics. They are ideal for high density PC board packaging. The Type AVEZ offers a low in-place-cost for a high quality performer. The vertical cylindrical cases facilitate automatic mounting and reflow soldering into the same footprint of like-rated tantalum capacitors except without the need for voltage derating. Type AVEZ is RoHS compliant.

Highlights

- $+105\text{ }^{\circ}\text{C}$, Up to 1000 Hours Load Life
- Capacitance Range: $1.0\text{ }\mu\text{F}$ to $220\text{ }\mu\text{F}$
- Voltage Range: 6.3 Vdc to 50 Vdc

Specifications

| | |
|-------------------------------|---|
| Operating Temperature: | $-55\text{ }^{\circ}\text{C}$ to $+105\text{ }^{\circ}\text{C}$ |
| Rated Voltage: | 6.3, 10, 16, 25, 35, 50 Vdc |
| Capacitance: | $1.0\text{ }\mu\text{F}$ to $220\text{ }\mu\text{F}$ |
| Capacitance Tolerance: | $\pm 20\%$ @ 120 Hz and $+20\text{ }^{\circ}\text{C}$ |
| Leakage Current: | $I = 0.01\text{ CV}$ or 3 (μA) whichever is greater after 2 minutes C = rated capacitance in μF , V = rated DC working voltage |

Ripple Current Multiplier:

| Freq. (Hz) | 50, 60 | 120 | 1 k | 10 k up |
|------------|--------|------|------|---------|
| Vdc | | | | |
| 6.3 ~ 50 | 0.64 | 0.80 | 0.93 | 1.00 |

Dissipation Factor: ($\text{Tan } \delta$ at 120 Hz, $20\text{ }^{\circ}\text{C}$)

| Rated Voltage | 6.3 | 10 | 16 | 25 | 35 | 50 |
|------------------|------|------|------|------|------|------|
| Tan δ Max | 0.28 | 0.24 | 0.20 | 0.16 | 0.14 | 0.12 |

Low Temperature Characteristic (at 120 Hz):

| Rated Voltage | | 6.3 | 10 | 16 | 25 | 35 | 50 |
|-----------------|---|-----|----|----|----|----|----|
| Impedance Ratio | $Z(-25\text{ }^{\circ}\text{C}) / Z(+20\text{ }^{\circ}\text{C})$ | 4 | 3 | 2 | 2 | 2 | 2 |
| | $Z(-40\text{ }^{\circ}\text{C}) / Z(+20\text{ }^{\circ}\text{C})$ | 8 | 5 | 4 | 3 | 3 | 3 |

Load Life Test:

| | |
|--------------------|------------------------------------|
| Test Time | 1,000 Hours |
| Capacitance Change | Within $\pm 25\%$ of initial value |
| Dissipation Factor | Less than 200% of specified value |
| Leakage Current | Within specified value |

* The above specifications shall be satisfied when the capacitors are restored to $20\text{ }^{\circ}\text{C}$ after the rated voltage is applied for 1,000 hrs at $105\text{ }^{\circ}\text{C}$

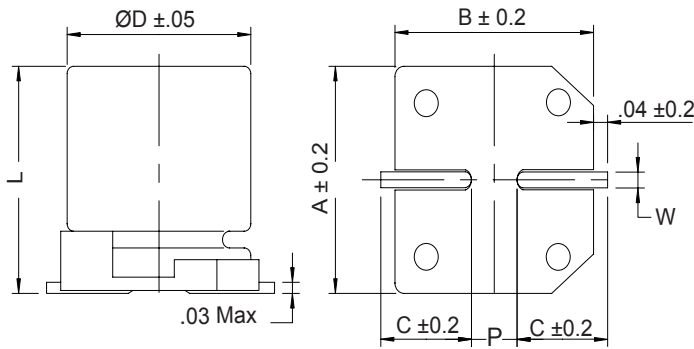


Shelf Life Test: Test time: 1000 hours; test limits are the same as those for life test.

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Outline Drawing, Case Code & Dimensions Table



| Case Code | Ø D (mm) | L (mm) | A (mm) | B (mm) | C (mm) | W (mm) | P ±0.2 (mm) |
|-----------|----------|----------|--------|--------|--------|------------|-------------|
| B | 4.0 | 5.3 ±0.2 | 4.3 | 4.3 | 2.0 | 0.5 to 0.8 | 1.0 |
| C | 5.0 | 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 |

Part Numbering System

| AVEZ | 106 | M | 25 | C | 12T | -F |
|------|--|-----------------------|--|---|--|----------------|
| Type | Capacitance | Capacitance Tolerance | Voltage Code | Case Code | Packaging Code | RoHS Compliant |
| AVEZ | 105 = 1.0 μF 106 = 10.0 μF 107 = 100.0 μF | M = $\pm 20\%$ | 06 = 6.3 Vdc 10 = 10 Vdc 16 = 16 Vdc | 25 = 25 Vdc 35 = 35 Vdc 50 = 50 Vdc | See Table 12 = Carrier Tape Width (mm) T = Tape & Reel | |

Ratings Table

| Cap (µF) | Catalog Part Number | Max DCL 2 min. (µA) | Max DF 120 Hz 20 °C | Max Impedance 100 kHz 20 °C (ohms) | Max Ripple Current 100 kHz 105 °C (mA) | Case Code | Size D x L (mm) | Quantity per Reel (each) |
|-------------------------------|---------------------|---------------------|---------------------|------------------------------------|--|-----------|-----------------|--------------------------|
| 6.3 Vdc (8 Vdc Surge) | | | | | | | | |
| 22 | AVEZ226M06B12T-F | 3.0 | 0.28 | 3.20 | 65 | B | 4 x 5.3 | 2000 |
| 33 | AVEZ336M06C12T-F | 3.0 | 0.28 | 1.50 | 110 | C | 5 x 5.3 | 1000 |
| 47 | AVEZ476M06C12T-F | 3.0 | 0.28 | 1.50 | 110 | C | 5 x 5.3 | 1000 |
| 100 | AVEZ107M06D16T-F | 6.3 | 0.28 | 0.85 | 170 | D | 6.3 x 5.3 | 1000 |
| 150 | AVEZ157M06X16T-F | 9.5 | 0.28 | 0.50 | 255 | X | 6.3 x 7.7 | 1000 |
| 220 | AVEZ227M06X16T-F | 13.9 | 0.28 | 0.50 | 255 | X | 6.3 x 7.7 | 1000 |
| 10 Vdc (13 Vdc Surge) | | | | | | | | |
| 10 | AVEZ106M10B12T-F | 3.0 | 0.24 | 3.20 | 65 | B | 4 x 5.3 | 2000 |
| 22 | AVEZ226M10C12T-F | 3.0 | 0.24 | 1.50 | 110 | C | 5 x 5.3 | 1000 |
| 33 | AVEZ336M10C12T-F | 3.0 | 0.24 | 1.50 | 110 | C | 5 x 5.3 | 1000 |
| 47 | AVEZ476M10D16T-F | 3.0 | 0.24 | 0.85 | 170 | D | 6.3 x 5.3 | 1000 |
| 100 | AVEZ107M10D16T-F | 6.3 | 0.24 | 0.85 | 170 | D | 6.3 x 5.3 | 1000 |
| 150 | AVEZ157M10X16T-F | 9.5 | 0.24 | 0.50 | 255 | X | 6.3 x 7.7 | 1000 |
| 220 | AVEZ227M10X16T-F | 13.9 | 0.24 | 0.50 | 255 | X | 6.3 x 7.7 | 1000 |

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Ratings Table

| Cap (μF) | Catalog Part Number | Max DCL 2 min. (μA) | Max DF 120 Hz 20 $^{\circ}\text{C}$ | Max Impedance 100 kHz 20 $^{\circ}\text{C}$ (ohms) | Max Ripple Current 100 kHz 105 $^{\circ}\text{C}$ (mA) | Case Code | Size D x L (mm) | Quantity per Reel (each) |
|-------------------------------|------------------------|---|---|---|---|--------------|-----------------------|--------------------------------|
| 16 Vdc (13 Vdc Surge) | | | | | | | | |
| 10 | AVEZ106M16B12T-F | 3.0 | 0.2 | 3.20 | 65 | B | 4 x 5.3 | 2000 |
| 22 | AVEZ226M16C12T-F | 3.0 | 0.2 | 1.50 | 110 | C | 5 x 5.3 | 1000 |
| 33 | AVEZ336M16D16T-F | 3.0 | 0.2 | 0.85 | 170 | D | 6.3 x 5.3 | 1000 |
| 47 | AVEZ476M16D16T-F | 3.0 | 0.2 | 0.85 | 170 | D | 6.3 x 5.3 | 1000 |
| 100 | AVEZ107M16D16T-F | 6.3 | 0.2 | 0.85 | 170 | D | 6.3 x 5.3 | 1000 |
| 150 | AVEZ157M16X16T-F | 9.5 | 0.2 | 0.50 | 255 | X | 6.3 x 7.7 | 1000 |
| 220 | AVEZ227M16X16T-F | 13.9 | 0.2 | 0.50 | 255 | X | 6.3 x 7.7 | 1000 |
| 25 Vdc (31 Vdc Surge) | | | | | | | | |
| 4.7 | AVEZ475M25B12T-F | 3.0 | 0.16 | 3.20 | 65 | B | 4 x 5.3 | 2000 |
| 10 | AVEZ106M25C12T-F | 3.0 | 0.16 | 1.50 | 110 | C | 5 x 5.3 | 1000 |
| 22 | AVEZ226M25D16T-F | 3.0 | 0.16 | 0.85 | 170 | D | 6.3 x 5.3 | 1000 |
| 33 | AVEZ336M25D16T-F | 3.0 | 0.16 | 0.85 | 170 | D | 6.3 x 5.3 | 1000 |
| 47 | AVEZ476M25D16T-F | 3.0 | 0.16 | 0.85 | 170 | D | 6.3 x 5.3 | 1000 |
| 100 | AVEZ107M25X16T-F | 6.3 | 0.16 | 0.5 | 255 | X | 6.3 x 7.7 | 1000 |
| 35 Vdc (44 Vdc Surge) | | | | | | | | |
| 4.7 | AVEZ475M35B12T-F | 3.0 | 0.14 | 3.20 | 65 | B | 4 x 5.3 | 2000 |
| 10 | AVEZ106M35C12T-F | 3.0 | 0.14 | 1.50 | 110 | C | 5 x 5.3 | 1000 |
| 22 | AVEZ226M35D16T-F | 3.0 | 0.14 | 0.85 | 170 | D | 6.3 x 5.3 | 1000 |
| 33 | AVEZ336M35D16T-F | 3.0 | 0.14 | 0.85 | 170 | D | 6.3 x 5.3 | 1000 |
| 47 | AVEZ476M35X16T-F | 3.0 | 0.14 | 0.50 | 255 | X | 6.3 x 7.7 | 1000 |
| 50 Vdc (63 Vdc Surge) | | | | | | | | |
| 1.0 | AVEZ105M50B12T-F | 3.0 | 0.12 | 5.0 | 30 | B | 4 x 5.3 | 2000 |
| 2.2 | AVEZ225M50B12T-F | 3.0 | 0.12 | 5.0 | 30 | B | 4 x 5.3 | 2000 |
| 3.3 | AVEZ335M50B12T-F | 3.0 | 0.12 | 5.0 | 30 | B | 4 x 5.3 | 2000 |
| 4.7 | AVEZ475M50C12T-F | 3.0 | 0.12 | 3.0 | 50 | C | 5 x 5.3 | 1000 |
| 10 | AVEZ106M50D16T-F | 3.0 | 0.12 | 2.0 | 70 | D | 6.3 x 5.3 | 1000 |
| 22 | AVEZ226M50D16T-F | 3.0 | 0.12 | 3.0 | 70 | D | 6.3 x 5.3 | 1000 |
| 33 | AVEZ336M50X16T-F | 3.0 | 0.12 | 1.0 | 170 | X | 6.3 x 7.7 | 1000 |

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