

## SMT Aluminum Electrolytic Capacitors - General Purpose, 85°C

### General Purpose Filtering, Bypassing, Power Supply Decoupling



Type AVS Capacitors are the best 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 Type AVS offers a significant cost savings over tantalum capacitors.

### Highlights

- +85°C, 2000 Hour Load Life
- Capacitance Range: 0.1 μF to 1500 μF
- Voltage Range: 4.0 Vdc to 100 Vdc
- AEC-Q200 Compliant

### Specifications

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

**Rated voltage:** 4.0, 6.3, 10, 16, 25, 35, 63, & 100 Vdc

**Capacitance:** 0.1 μF to 1500 μF

**D.F. (@ 20°C):** See Ratings Table

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

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

**Ripple Current Multipliers:**

#### Frequency

50/60 Hz	120 Hz	1 kHz	10 kHz & up
0.7	1.0	1.3	1.7

**Load Life:** 2000 h @ 85°C

**Shelf Life:** 1000 h @ 85°C

Δ Capacitance: ±20%

Δ Capacitance: ±20%

DF: ≤200% of limit

**RoHS Compliant**

DF: ≤200% of limit

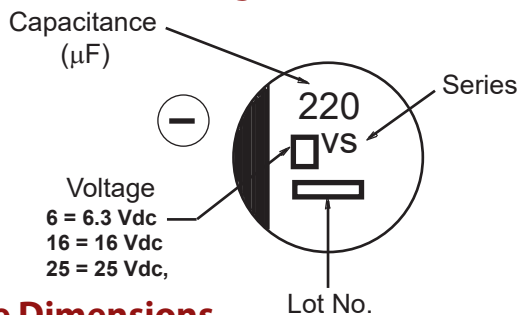
DCL: <100% of limit

DCL: <100% of limit

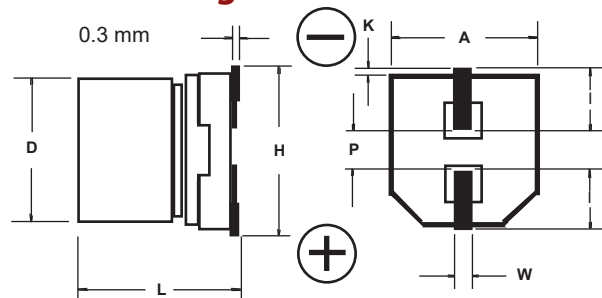
#### Maximum Impedance Ratio @ 120 Hz

W.V. (Vdc)	4.0	6.3	10.0	16.0	25.0	35.0	50.0	63.0	100.0
-25°C / +20°C	7.0	4.0	3.0	2.0	2.0	2.0	2.0	3.0	3.0
-40°C / +20°C	15.0	8.0	6.0	4.0	4.0	3.0	3.0	4.0	4.0

### AVS Series Marking



### Outline Drawing



### Case Dimensions

Case Code	D ± 0.5	L	A ± 0.2	H (max)	I (ref)	W	P (ref)	K
A	3	5.4 +1,-2	3.3	4.5	1.5	0.55 ± 0.1	0.6	0.35 + 0.15/-0.20
B	4	5.4 +1,-2	4.3	5.5	1.8	0.65 ± 0.1	1.0	0.35 + 0.15/-0.20
C	5	5.4 +1,-2	5.3	6.5	2.2	0.65 ± 0.1	1.5	0.35 + 0.15/-0.20
D	6.3	5.4 +1,-2	6.6	7.8	2.6	0.65 ± 0.1	1.8	0.35 + 0.15/-0.20
X	6.3	7.9 ± 3	6.6	7.8	2.6	0.65 ± 0.1	1.8	0.35 + 0.15/-0.20
E	8	6.2 ± 3	8.3	9.5	3.4	0.65 ± 0.1	2.2	0.35 + 0.15/-0.20
F	8	10.2 ± 3	8.3	10.0	3.4	0.90 ± 0.2	3.1	0.70 ± 0.20
G	10	10.2 ± 3	10.3	12.0	3.5	0.90 ± 0.2	4.6	0.70 ± 0.20

# Type AVS

## SMT Aluminum Electrolytic Capacitors - General Purpose, 85°C

Cap (µF)	CaT-Fallog ParT-F Number	Max. DCL (µA)	Max. Dissipation Factor @ 120 Hz	Max. ESR @ 120 Hz/20 °C (Ohms)	Max. Ripple Current 120 Hz/85 °C (mA)	Case Code	Size D x L (mm)	Quantity per Reel
<b>4 Vdc (5 Vdc Surge)</b>								
22	AVS226M04A12T-F*	3.0	0.37	27.9	19	A	3 x 5.4	2000
33	AVS336M04B12T-F	3.0	0.35	17.6	26	B	4 x 5.4	2000
47	AVS476M04B12T-F	3.0	0.35	12.3	34	B	4 x 5.4	2000
100	AVS107M04C12T-F	4.0	0.35	5.8	61	C	5 x 5.4	1000
220	AVS227M04D16T-F	8.8	0.35	2.6	82	D	6.3 x 5.4	1000
<b>6.3 Vdc (8 Vdc Surge)</b>								
22	AVS226M06A12T-F*	3.0	0.35	26.4	20	A	3 x 5.4	2000
22	AVS226M06B12T-F	3.0	0.26	19.6	29	B	4 x 5.4	2000
33	AVS336M06B12T-F	3.0	0.35	17.6	29	B	4 x 5.4	2000
47	AVS476M06B12T-F	3.0	0.35	12.3	36	B	4 x 5.4	2000
47	AVS476M06C12T-F	3.0	0.26	9.2	46	C	5 x 5.4	1000
100	AVS107M06C12T-F	6.3	0.35	5.8	47	C	5 x 5.4	1000
100	AVS107M06D16T-F	6.3	0.26	4.3	71	D	6.3 x 5.4	1000
220	AVS227M06D16T-F	13.9	0.35	2.6	74	D	6.3 x 5.4	1000
330	AVS337M06X16T-F	20.8	0.26	1.3	150	X	6.3 x 7.9	900
330	AVS337M06E16T-F	20.8	0.35	1.8	300	E	8 x 6.2	1000
470	AVS477M06F24T-F	29.6	0.35	1.2	380	F	8 x 10.2	500
1000	AVS108M06F24T-F	63.0	0.35	0.6	500	F	8 x 10.2	500
1000	AVS108M06G24T-F	63.0	0.35	0.6	700	G	10 x 10.2	500
1500	AVS158M06G24T-F	94.5	0.35	0.4	700	G	10 x 10.2	500
<b>10 Vdc (13 Vdc Surge)</b>								
22	AVS226M10B12T-F	3.0	0.3	22.6	28	B	4 x 5.4	2000
33	AVS336M10B12T-F	3.3	0.3	15.1	29	B	4 x 5.4	2000
33	AVS336M10C12T-F	3.3	0.2	10.1	43	C	5 x 5.4	1000
47	AVS476M10C12T-F	4.7	0.3	10.6	43	C	5 x 5.4	1000
100	AVS107M10C12T-F	10.0	0.3	5.0	50	C	5 x 5.4	1000
100	AVS107M10D16T-F	10.0	0.2	3.3	70	D	6.3 x 5.4	1000
220	AVS227M10X16T-F	22.0	0.2	1.5	150	X	6.3 x 7.9	900
220	AVS227M10E16T-F	22.0	0.26	2.0	250	E	8 x 6.2	1000
330	AVS337M10F24T-F	33.0	0.26	1.3	330	F	8 x 10.2	500
470	AVS477M10F24T-F	47.0	0.26	0.9	330	F	8 x 10.2	500
470	AVS477M10G24T-F	47.0	0.26	0.9	400	G	10 x 10.2	500
1000	AVS108M10G24T-F	100.0	0.26	0.4	580	G	10 x 10.2	500
<b>16 Vdc (20 Vdc Surge)</b>								
10	AVS106M16A12T-F*	3.0	0.18	29.9	20	A	3 x 5.4	2000
10	AVS106M16B12T-F	3.0	0.16	26.5	28	B	4 x 5.4	2000
22	AVS226M16B12T-F	3.5	0.26	19.6	28	B	4 x 5.4	2000
22	AVS226M16C12T-F	3.5	0.16	12.1	39	C	5 x 5.4	1000
33	AVS336M16C12T-F	5.3	0.26	13.1	35	C	5 x 5.4	1000
47	AVS476M16C12T-F	7.5	0.26	9.2	39	C	5 x 5.4	1000
47	AVS476M16D16T-F	7.5	0.16	5.6	70	D	6.3 x 5.4	1000
100	AVS107M16D16T-F	16.0	0.26	4.3	70	D	6.3 x 5.4	1000
100	AVS107M16E16T-F	16.0	0.2	3.3	200	E	8 x 6.2	1000
220	AVS227M16X16T-F	35.2	0.16	1.2	150	X	6.3 x 7.9	900
220	AVS227M16E16T-F	35.2	0.2	1.5	200	E	8 x 6.2	1000
220	AVS227M16F24T-F	35.2	0.2	1.5	280	F	8 x 10.2	500
330	AVS337M16F24T-F	52.8	0.2	1.0	320	F	8 x 10.2	500
330	AVS337M16G24T-F	52.8	0.2	1.0	380	G	10 x 10.2	500
470	AVS477M16F24T-F	75.2	0.2	0.7	320	F	8 x 10.2	500
470	AVS477M16G24T-F	75.2	0.2	0.7	420	G	10 x 10.2	500
<b>25 Vdc (31 Vdc Surge)</b>								
4.7	AVS475M25A12T-F*	3.0	0.16	56.5	12	A	3 x 5.4	2000
4.7	AVS475M25B12T-F	3.0	0.14	49.4	22	B	4 x 5.4	2000
10	AVS106M25B12T-F	3.0	0.2	33.2	22	B	4 x 5.4	2000
10	AVS106M25C12T-F	3.0	0.14	23.2	28	C	5 x 5.4	1000
22	AVS226M25C12T-F	5.5	0.2	15.1	35	C	5 x 5.4	1000
22	AVS226M25D16T-F	5.5	0.14	10.6	55	D	6.3 x 5.4	1000
33	AVS336M25C12T-F	8.3	0.2	10.0	42	C	5 x 5.4	1000
33	AVS336M25D16T-F	8.3	0.14	7.0	65	D	6.3 x 5.4	1000
47	AVS476M25D16T-F	11.8	0.2	7.1	70	D	6.3 x 5.4	1000
100	AVS107M25X16T-F	25.0	0.14	2.3	150	X	6.3 x 7.9	900
100	AVS107M25E16T-F	25.0	0.16	2.7	91	E	8 x 6.2	1000
100	AVS107M25F24T-F	25.0	0.16	2.7	180	F	8 x 10.2	500
220	AVS227M25F24T-F	55.0	0.16	1.2	140	F	8 x 10.2	500
220	AVS227M25G24T-F	55.0	0.16	1.2	310	G	10 x 10.2	500
330	AVS337M25F24T-F	82.5	0.16	0.8	150	F	8 x 10.2	500
330	AVS337M25G24T-F	82.5	0.16	0.8	340	G	10 x 10.2	500
470	AVS477M25G24T-F	117.5	0.16	0.6	360	G	10 x 10.2	500

\*Denotes discontinued part

## SMT Aluminum Electrolytic Capacitors - General Purpose, 85°C

Cap (µF)	CaT-Fallog Part-F Number	Max. DCL (µA)	Dissipation Factor @ 120 Hz	ESR @ 120 Hz/20 °C (Ohms)	Ripple Current 120 Hz/85 °C (mA)	Case Code	Size D x L (mm)	Quantity per Reel
<b>35 Vdc (44 Vdc Surge)</b>								
2.2	AVS225M35A12T-F*	3.0	0.14	105.6	8	A	3 x 5.4	2000
3.3	AVS335M35A12T-F*	3.0	0.14	70.4	10	A	3 x 5.4	2000
4.7	AVS475M35B12T-F	3.0	0.12	42.4	22	B	4 x 5.4	2000
10	AVS106M35B12T-F	3.5	0.16	26.5	22	B	4 x 5.4	2000
10	AVS106M35C12T-F	3.5	0.12	19.9	30	C	5 x 5.4	1000
22	AVS226M35C12T-F	7.7	0.16	12.1	36	C	5 x 5.4	1000
22	AVS226M35D16T-F	7.7	0.12	9.1	60	D	6.3 x 5.4	1000
33	AVS336M35D16T-F	11.6	0.16	8.0	60	D	6.3 x 5.4	1000
33	AVS336M35E16T-F	11.6	0.14	7.0	130	E	8 x 6.2	1000
47	AVS476M35D16T-F	16.5	0.16	5.6	70	D	6.3 x 5.4	1000
47	AVS476M35E16T-F	16.5	0.14	4.9	165	E	8 x 6.2	1000
100	AVS107M35X16T-F	35.0	0.12	2.0	130	X	6.3 x 7.9	900
100	AVS107M35F24T-F	35.0	0.14	2.3	140	F	8 x 10.2	500
100	AVS107M35G24T-F	35.0	0.14	2.3	210	G	10 x 10.2	500
220	AVS227M35F24T-F	77.0	0.14	1.1	200	F	8 x 10.2	500
220	AVS227M35G24T-F	77.0	0.14	1.1	310	G	10 x 10.2	500
330	AVS337M35G24T-F	115.5	0.14	0.7	320	G	10 x 10.2	500
<b>50 Vdc (63 Vdc Surge)</b>								
0.1	AVS104M50A12T-F*	3.0	0.14	2322.0	1	A	3 x 5.4	2000
0.1	AVS104M50B12T-F*	3.0	0.12	1990.0	1	B	4 x 5.4	2000
0.22	AVS224M50A12T-F*	3.0	0.14	1055.0	2	A	3 x 5.4	2000
0.22	AVS224M50B12T-F	3.0	0.12	905.0	2	B	4 x 5.4	2000
0.33	AVS334M50A12T-F*	3.0	0.14	704.0	3	A	3 x 5.4	2000
0.33	AVS334M50B12T-F	3.0	0.12	603.0	3	B	4 x 5.4	2000
0.47	AVS474M50A12T-F*	3.0	0.14	494.0	5	A	3 x 5.4	2000
0.47	AVS474M50B12T-F*	3.0	0.12	424.0	5	B	4 x 5.4	2000
1	AVS105M50A12T-F*	3.0	0.14	232.0	8	A	3 x 5.4	2000
1	AVS105M50B12T-F	3.0	0.12	199.0	10	B	4 x 5.4	2000
2.2	AVS225M50A12T-F*	3.0	0.14	106.0	10	A	3 x 5.4	2000
2.2	AVS225M50B12T-F	3.0	0.12	90.5	16	B	4 x 5.4	2000
3.3	AVS335M50B12T-F	3.0	0.12	60.3	16	B	4 x 5.4	2000
4.7	AVS475M50B12T-F	3.0	0.14	49.4	18	B	4 x 5.4	2000
4.7	AVS475M50C12T-F	3.0	0.12	42.4	23	C	5 x 5.4	1000
10	AVS106M50C12T-F	5.0	0.14	23.2	27	C	5 x 5.4	1000
10	AVS106M50D16T-F	5.0	0.12	19.9	35	D	6.3 x 5.4	1000
22	AVS226M50D16T-F	11.0	0.14	10.6	60	D	6.3 x 5.4	1000
22	AVS226M50E16T-F	11.0	0.12	9.1	120	E	8 x 6.2	1000
33	AVS336M50X16T-F	16.5	0.12	6.0	85	X	6.3 x 7.9	900
33	AVS336M50E16T-F	16.5	0.12	6.0	130	E	8 x 6.2	1000
33	AVS336M50F24T-F	16.5	0.12	6.0	140	F	8 x 10.2	500
47	AVS476M50X16T-F	23.5	0.12	4.2	90	X	6.3 x 7.9	900
47	AVS476M50F24T-F	23.5	0.12	4.2	150	F	8 x 10.2	500
47	AVS476M50G24T-F	23.5	0.12	4.2	160	G	10 x 10.2	500
100	AVS107M50F24T-F	50.0	0.12	2.0	200	F	8 x 10.2	500
100	AVS107M50G24T-F	50.0	0.12	2.0	250	G	10 x 10.2	500
220	AVS227M50G24T-F	110.0	0.12	0.9	300	G	10 x 10.2	500
<b>63 Vdc (75 Vdc Surge)</b>								
10	AVS106M63D16T-F	6.3	0.18	29.9	35	D*	6.3 x 5.7	1000
22	AVS226M63E16T-F	13.9	0.18	13.6	40	E	8 x 6.2	1000
22	AVS226M63F24T-F	13.9	0.18	13.6	40	F	8 x 10.2	500
33	AVS336M63F24T-F	20.8	0.18	9.1	45	F	8 x 10.2	500
47	AVS476M63F24T-F	29.6	0.18	6.4	45	F	8 x 10.2	500
100	AVS107M63G24T-F	63.0	0.18	3.0	60	G	10 x 10.2	500
<b>100 Vdc (125 Vdc Surge)</b>								
3.3	AVS335M2AE16T-F	3.3	0.18	90.4	50	E	8 x 6.2	1000
4.7	AVS475M2AE16T-F*	4.7	0.18	63.5	50	E	8 x 6.2	1000
4.7	AVS475M2AF24T-F*	4.7	0.18	63.5	80	F	8 x 10.2	500
10	AVS106M2AE16T-F	10.0	0.18	29.8	50	E	8 x 6.2	1000
10	AVS106M2AF24T-F	10.0	0.18	29.8	85	F	8 x 10.2	500
22	AVS226M2AF24T-F	22.0	0.18	13.6	70	F	8 x 10.2	500
22	AVS226M2AG24T-F	22.0	0.18	13.6	90	G	10 x 10.2	500
33	AVS336M2AG24T-F	33.0	0.18	8.0	90	G	10 x 10.2	500

\*Denotes discontinued part

\*Overall case height (L dimension) is 5.7 mm ±0.3 mm

### Part Numbering System

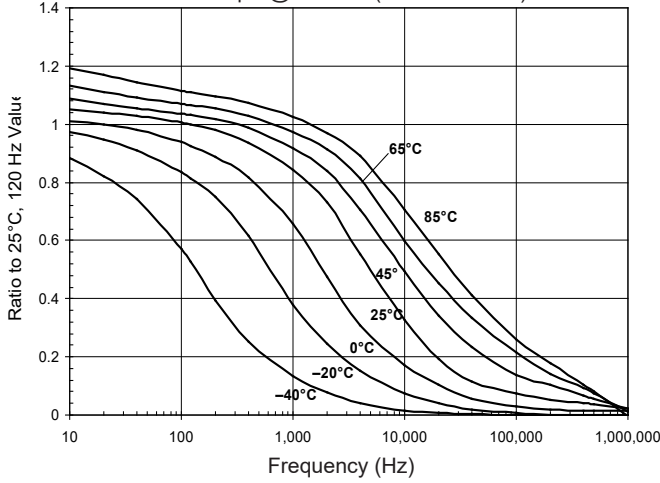
<b>AVS</b>	<b>106</b>	<b>M</b>	<b>16</b>	<b>B</b>	<b>12T</b>	<b>-F</b>
<b>Type</b>	<b>Capacitance</b>	<b>Capacitance Tolerance</b>	<b>Voltage</b>	<b>Case Code</b>	<b>Packaging Information</b>	<b>RoHS Compliant</b>
	104 = 0.1 µF 105 = 1.0 µF 106 = 10 µF 107 = 100 µF 108 = 1000 µF	M = ±20%	04 = 4 Vdc 06 = 6.3 Vdc 10 = 10 Vdc 16 = 16 Vdc 25 = 25 Vdc	35 = 35 Vdc 50 = 50 Vdc 10 = 10 Vdc 63 = 63 Vdc 2A = 100 Vdc	12 = Carrier Tape Width (mm) T = Tape & Reel B = Bulk	

# Type AVS

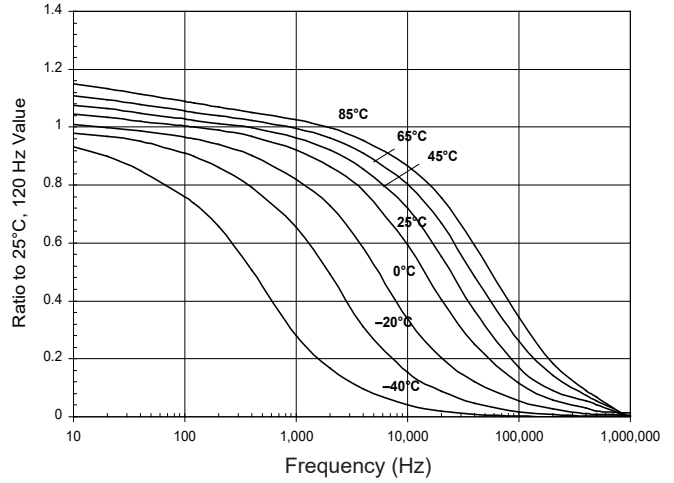
## SMT Aluminum Electrolytic Capacitors - General Purpose, 85°C

### Typical Performance Curves

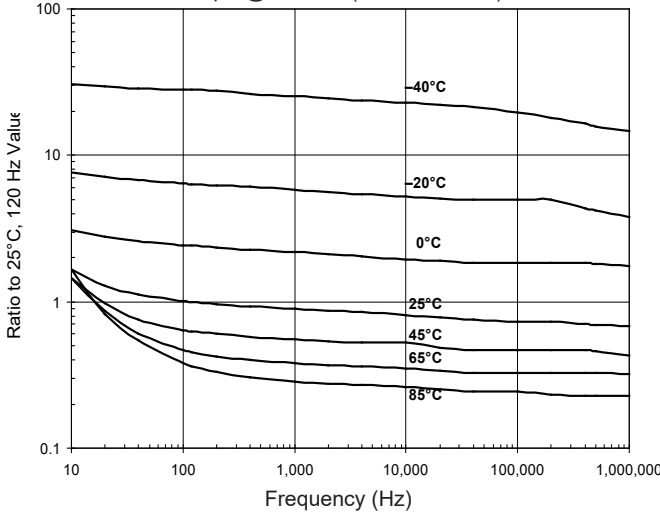
Capacitance vs. Temperature & Frequency  
1500  $\mu$ F @ 6.3 Vdc (10 X 10.2 mm)



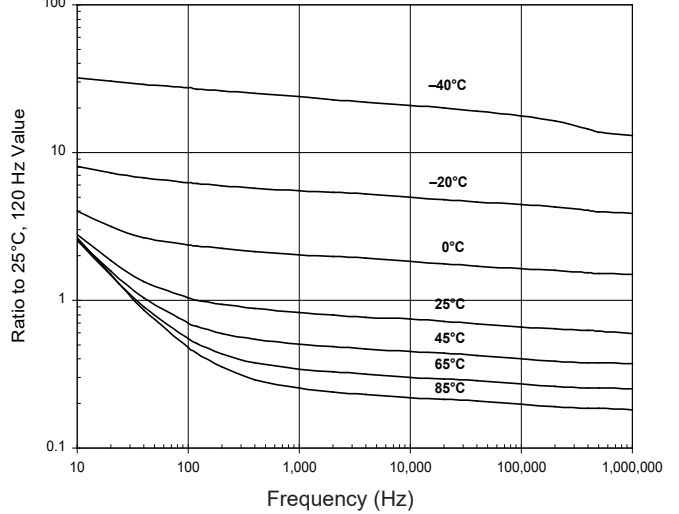
Capacitance vs. Temperature & Frequency  
100  $\mu$ F @ 16 Vdc (10 X 10.2 mm)



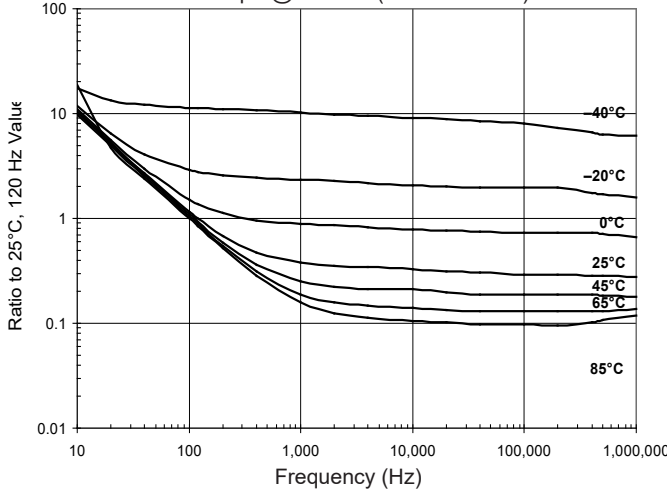
ESR vs. Temperature and Frequency  
1500  $\mu$ F @ 6.3 Vdc (10 X 10.2 mm)



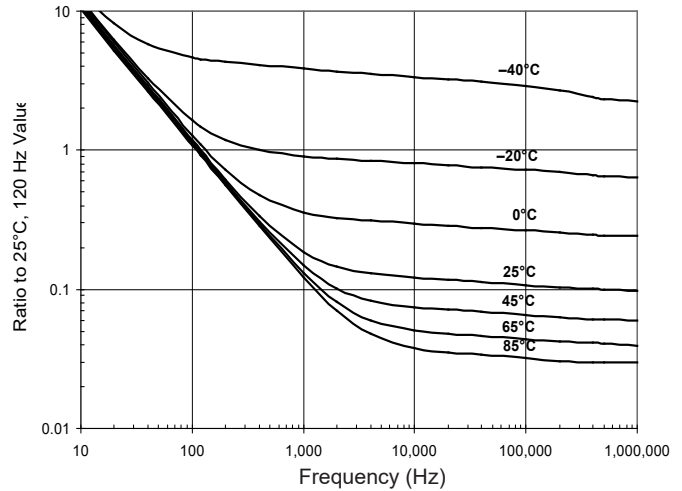
ESR vs. Temperature and Frequency  
100  $\mu$ F @ 16 Vdc (10 X 10.2 mm)



Impedance vs. Temperature and Frequency  
1500  $\mu$ F @ 6.3 Vdc (10 X 10.2 mm)

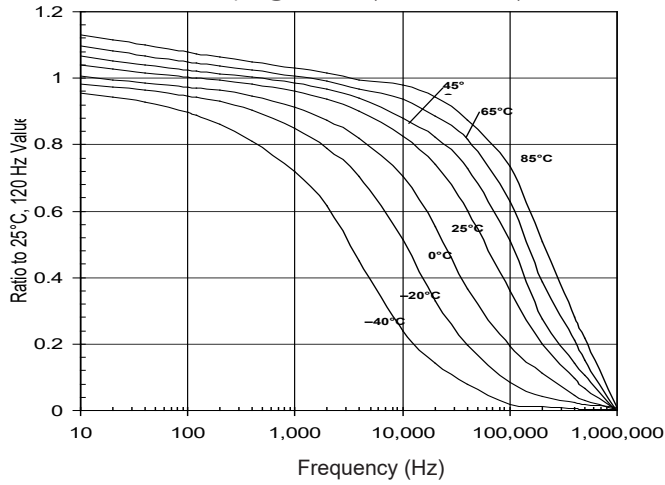


Impedance vs. Temperature and Frequency  
100  $\mu$ F @ 16 Vdc (10 X 10.2 mm)

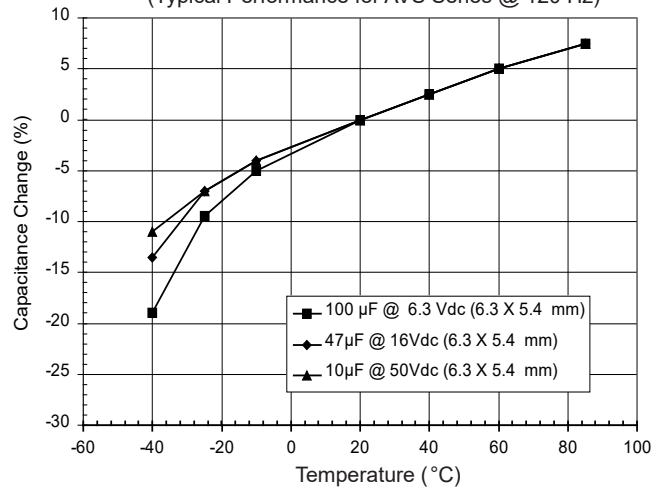


# SMT Aluminum Electrolytic Capacitors - General Purpose, 85°C

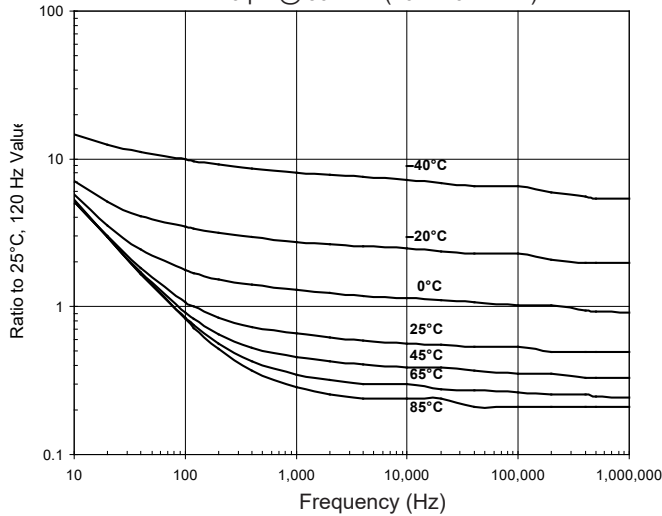
Capacitance vs. Temperature & Frequency  
220  $\mu$ F @ 50 Vdc (10 X 10.2 mm)



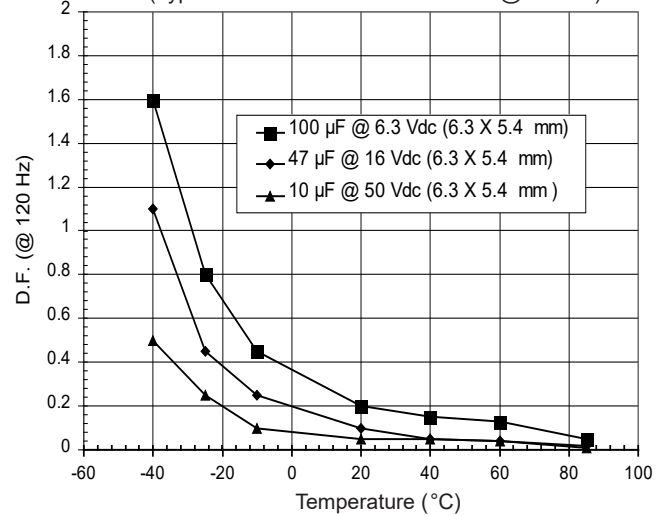
Capacitance Change with Temperature  
(Typical Performance for AVS Series @ 120 Hz)



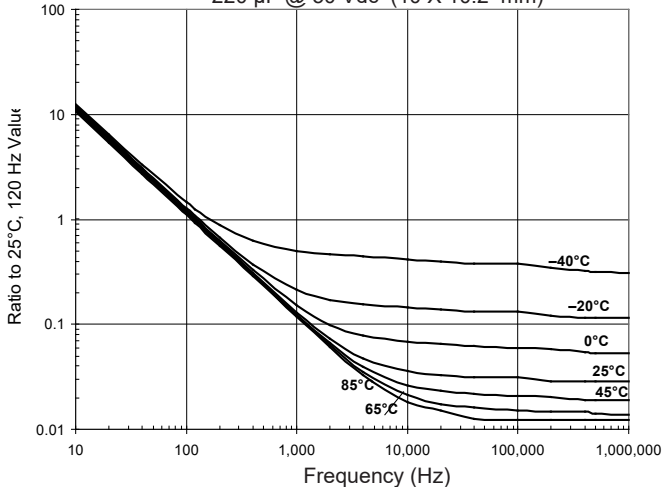
ESR vs. Temperature and Frequency  
220  $\mu$ F @ 50 Vdc (10 X 10.2 mm)



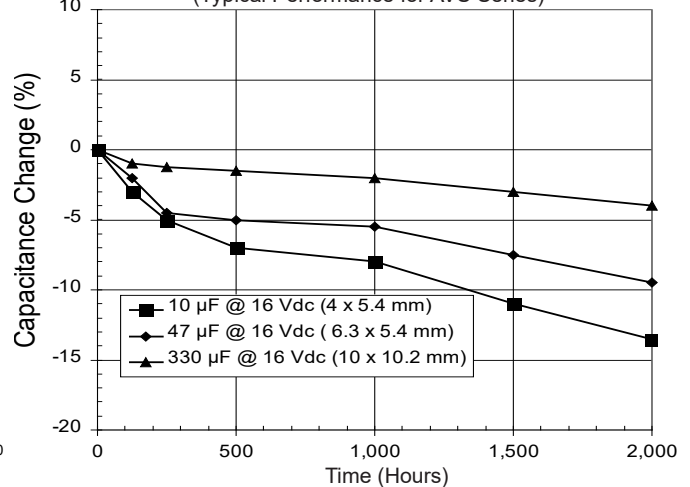
Dissipation Factor vs. Temperature  
(Typical Performance for AVS Series @ 120 Hz)



Impedance vs. Temperature and Frequency  
220  $\mu$ F @ 50 Vdc (10 X 10.2 mm)



Capacitance Change vs. Time  
(Typical Performance for AVS Series)



## Type AVS

# SMT Aluminum Electrolytic Capacitors - General Purpose, 85°C

---

**Notice and Disclaimer:** All product drawings, descriptions, specifications, statements, information and data (collectively, the "Information") in this datasheet or other publication are subject to change. The customer is responsible for checking, confirming and verifying the extent to which the Information contained in this datasheet or other publication is applicable to an order at the time the order is placed. All Information given herein is believed to be accurate and reliable, but it is presented without any guarantee, warranty, representation or responsibility of any kind, expressed or implied. Statements of suitability for certain applications are based on the knowledge that the Cornell Dubilier company providing such statements ("Cornell Dubilier") has of operating conditions that such Cornell Dubilier company regards as typical for such applications, but are not intended to constitute any guarantee, warranty or representation regarding any such matter – and Cornell Dubilier specifically and expressly disclaims any guarantee, warranty or representation concerning the suitability for a specific customer application, use, storage, transportation, or operating environment. The Information is intended for use only by customers who have the requisite experience and capability to determine the correct products for their application. Any technical advice inferred from this Information or otherwise provided by Cornell Dubilier with reference to the use of any Cornell Dubilier products is given gratis (unless otherwise specified by Cornell Dubilier), and Cornell Dubilier assumes no obligation or liability for the advice given or results obtained. Although Cornell Dubilier strives to apply the most stringent quality and safety standards regarding the design and manufacturing of its products, in light of the current state of the art, isolated component failures may still occur. Accordingly, customer applications which require a high degree of reliability or safety should employ suitable designs or other safeguards (such as installation of protective circuitry or redundancies or other appropriate protective measures) in order to ensure that the failure of an electrical component does not result in a risk of personal injury or property damage. Although all product-related warnings, cautions and notes must be observed, the customer should not assume that all safety measures are indicated in such warnings, cautions and notes, or that other safety measures may not be required.