Type AVS

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

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

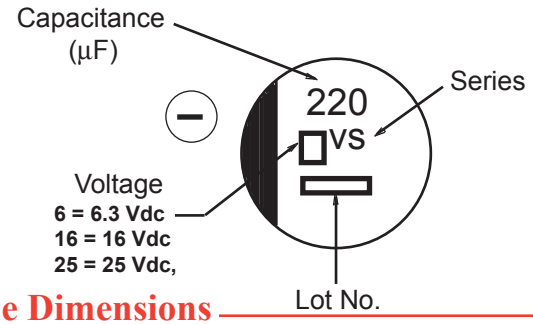
Δ Capacitance: ±20%
DF: ≤200% of limit
DCL: <100% of limit

Shelf Life: 1000 h @ 85°C

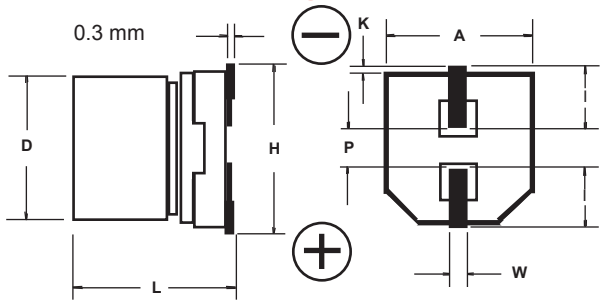
Δ Capacitance: ±20%
DF: ≤200% of limit
DCL: <100% of limit

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

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SMT Aluminum Electrolytic Capacitors - General Purpose, 85°C

Ratings

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

SMT Aluminum Electrolytic Capacitors - General Purpose, 85°C

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

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

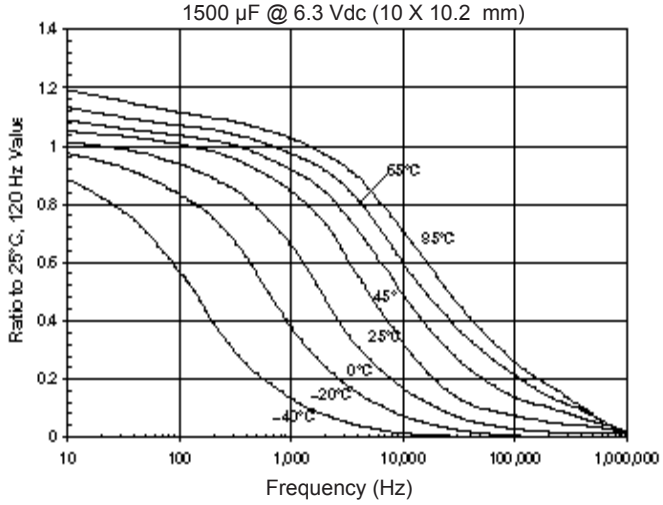
Part Numbering System

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

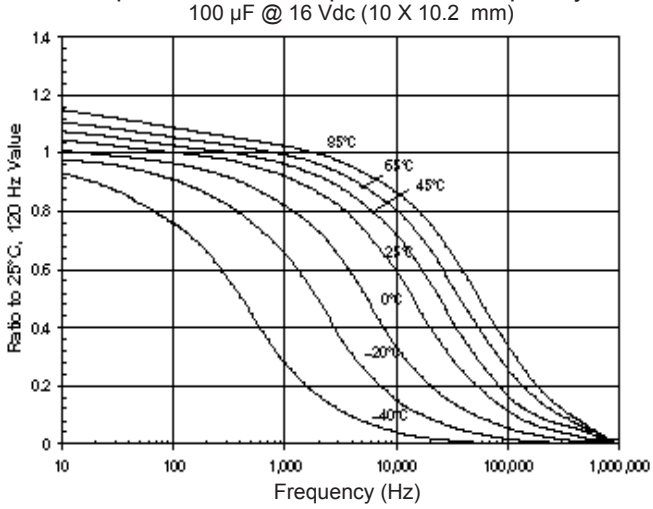
Type AVS
SMT Aluminum Electrolytic Capacitors - General Purpose, 85°C

Typical Performance Curves

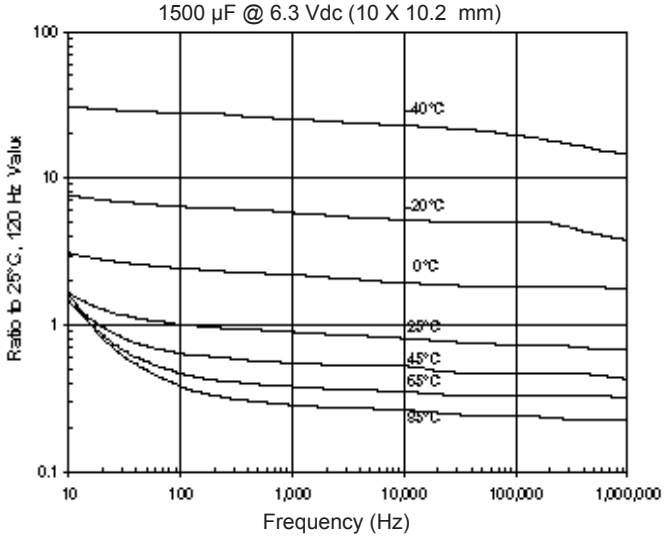
Capacitance vs. Temperature & Frequency
1500 µF @ 6.3 Vdc (10 X 10.2 mm)



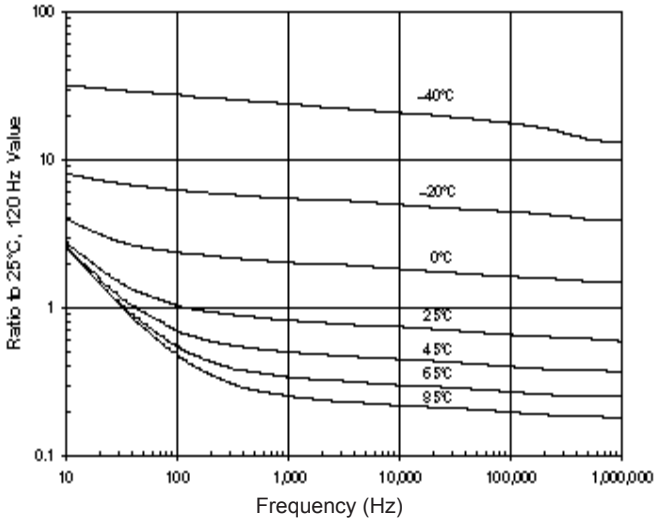
Capacitance vs. Temperature & Frequency
100 µF @ 16 Vdc (10 X 10.2 mm)



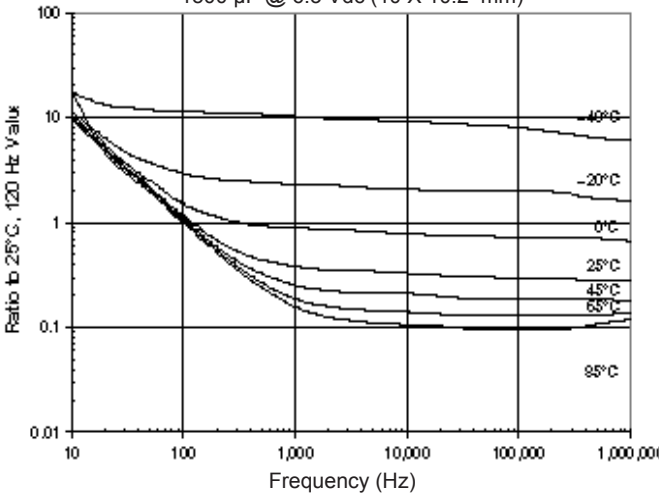
ESR vs. Temperature and Frequency
1500 µF @ 6.3 Vdc (10 X 10.2 mm)



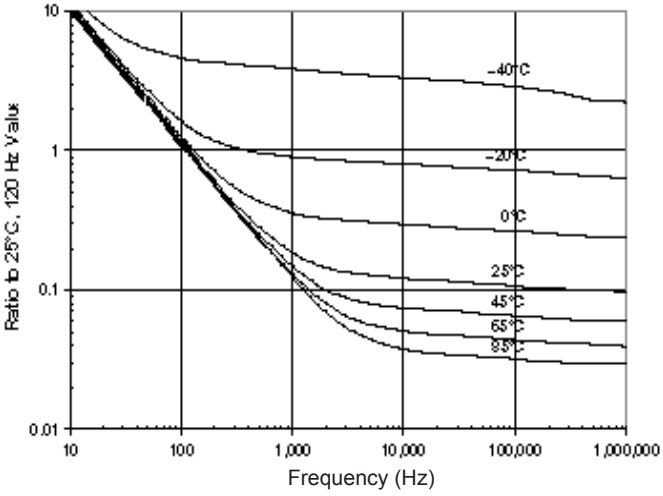
ESR vs. Temperature and Frequency
100 µF @ 16 Vdc (10 X 10.2 mm)



Impedance vs. Temperature and Frequency
1500 µF @ 6.3 Vdc (10 X 10.2 mm)



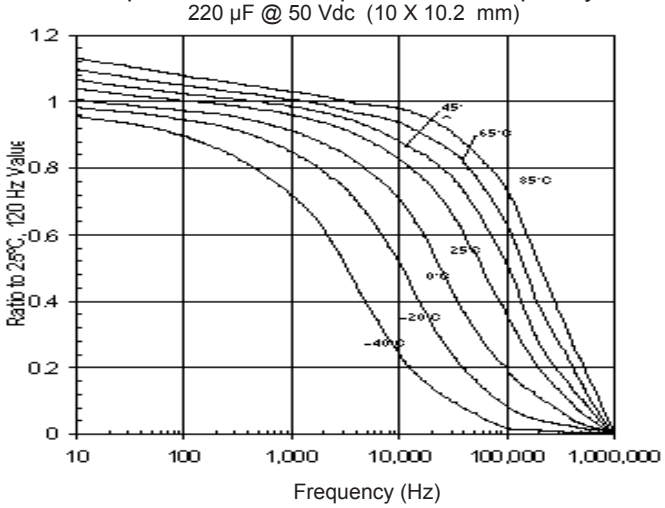
Impedance vs. Temperature and Frequency
100 µF @ 16 Vdc (10 X 10.2 mm)



SMT Aluminum Electrolytic Capacitors - General Purpose, 85°C

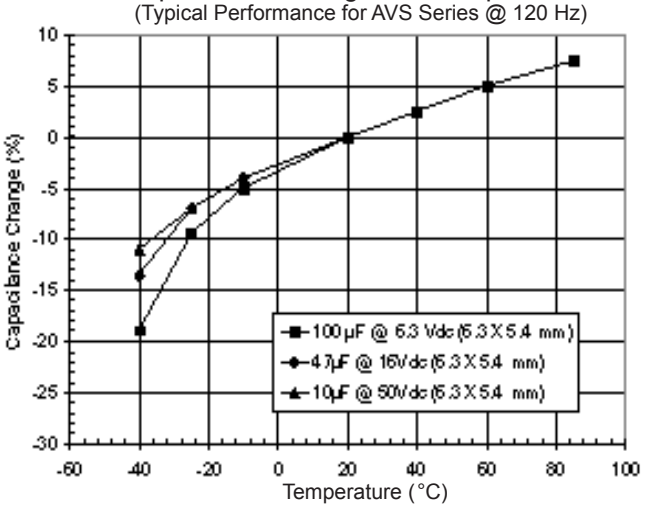
Capacitance vs. Temperature & Frequency

220 µF @ 50 Vdc (10 X 10.2 mm)



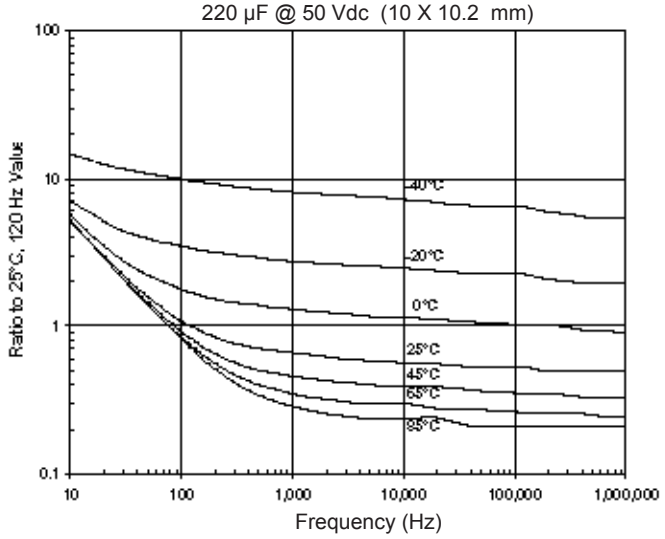
Capacitance Change with Temperature

(Typical Performance for AVS Series @ 120 Hz)



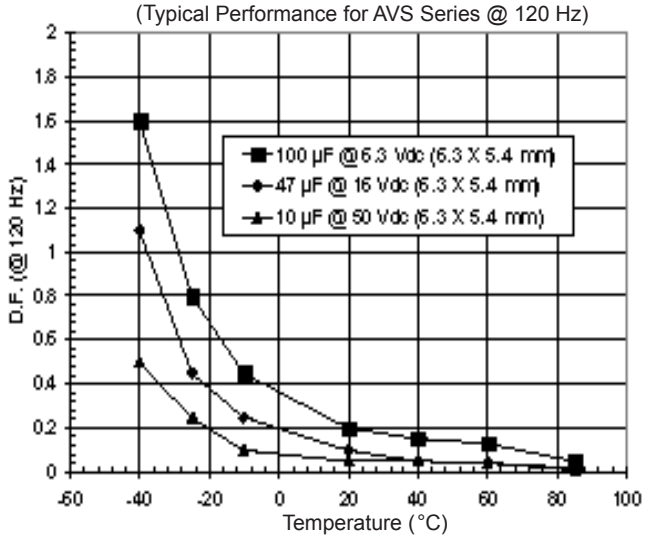
ESR vs. Temperature and Frequency

220 µF @ 50 Vdc (10 X 10.2 mm)



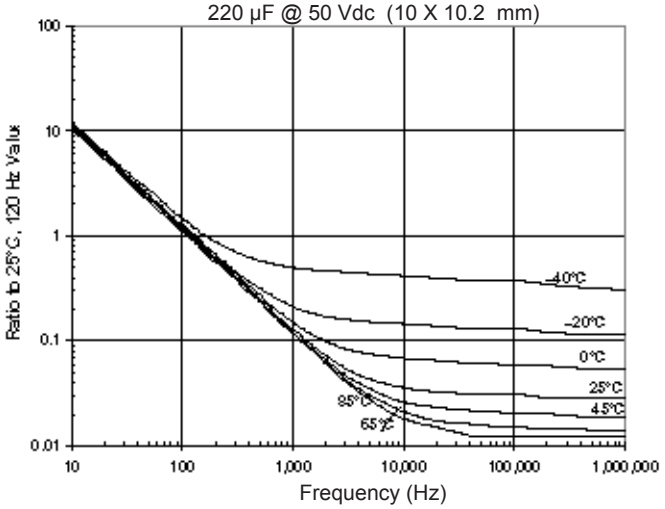
Dissipation Factor vs. Temperature

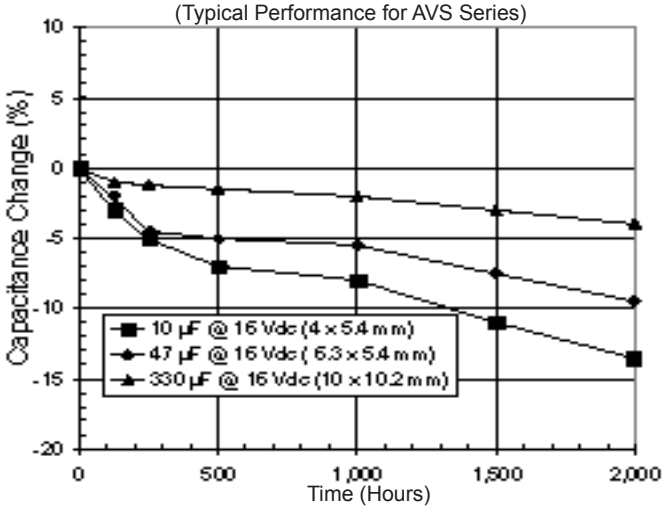
(Typical Performance for AVS Series @ 120 Hz)



Impedance vs. Temperature and Frequency

220 µF @ 50 Vdc (10 X 10.2 mm)



Capacitance Change vs. Time

(Typical Performance for AVS Series)