

Type AHA

SMT Aluminum Electrolytic Capacitors -55 °C to +105 °C - Long Life

Long Life Filtering, Bypassing, Power Supply Decoupling



Type AHA Capacitors deliver twice the life of many SMT aluminum capacitor types, and they handle high levels of ripple current. The AHA can handle the ripple current of Type AVS at 20 °C higher temperature. The vertical cylindrical cases facilitate automatic mounting and reflow soldering and Type AHA offers a significant cost savings over tantalum capacitors.

Highlights

- +105 °C, Up to 2000 Hour Load Life
- Capacitance Range: 0.1 µF to 1500 µF
- Voltage Range: 6.3 Vdc to 100 Vdc

Specifications

Operating Temperature: -55 °C to +105 °C

Rated Voltage: 6.3, 10, 16, 25, 35, 50, 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	1.3	1.7

Load Life: 1000 h @ +105 °C, 4.0 - 6.3 mm dia.
2000 h @ +105 °C, 8.0 - 10.0 mm dia.

Δ Capacitance ±20%

DF: < 200% of limit

DCL: ≤100% of limit

Shelf Life: 1000 h @ +105 °C

Δ Capacitance ±20%

DF: < 200% of limit

DCL: ≤100% of limit

Maximum Impedance Ratio at 120 Hz								
W.V. Vdc	6.3	10	16	25	35	50	63	100
-25 °C / +20 °C	4	3	2	2	2	2	3	3
-40 °C / +20 °C	8	6	4	4	3	3	4	4

AHA Series Marking



Outline Drawing



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Case Dimensions

Case								
Code	D ± 0.5	L	A ± 0.2	H (max)	I (ref)	W	P (ref)	K
B	4	5.4 +.1,-.2	4.3	5.5	1.8	0.65 ± 0.1	1	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	7.7 ±.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	3.4	0.90 ± 0.2	3.1	0.70 ± 0.20
G	10	10.2 ±.3	10.3	12	3.5	0.90 ± 0.2	4.6	0.70 ± 0.20

Ratings

Cap Cap (µF)	Catalog Part Number	Max DCL 2 min. (µA)	Max DF 120 Hz /20 °C	Max ESR 120 Hz /20 °C (Ω)	Max Ripple Current 120 Hz /105 °C (mA)	Case Code	Size D x L (mm)	Quantity per Reel
6.3 Vdc (8 Vdc Surge)								
22.0	AHA226M06B12T-F	3.0	0.30	22.6	29	B	4 x 5.4	2000
33.0	AHA336M06B12T-F	3.0	0.35	17.6	29	B	4 x 5.4	2000
47.0	AHA476M06B12T-F	3.0	0.35	12.3	36	B	4 x 5.4	2000
47.0	AHA476M06C12T-F	3.0	0.30	10.6	46	C	5 x 5.4	1000
100.0	AHA107M06C12T-F	6.3	0.35	5.8	47	C	5 x 5.4	1000
100.0	AHA107M06D16T-F	6.3	0.30	5.0	71	D	6.3 x 5.4	1000
220.0	AHA227M06D16T-F	13.9	0.35	2.6	74	D	6.3 x 5.4	1000
330.0	AHA337M06X16T-F	20.8	0.30	1.5	105	X	6.3 x 7.7	900
330.0	AHA337M06F24T-F	20.8	0.35	1.8	230	F	8 x 10.2	500
470.0	AHA477M06F24T-F	29.6	0.35	1.2	300	F	8 x 10.2	500
1000.0	AHA108M06F24T-F	63.0	0.35	0.6	300	F	8 x 10.2	500
1000.0	AHA108M06G24T-F	63.0	0.35	0.6	400	G	10 x 10.2	500
1500.0	AHA158M06G24T-F	94.5	0.35	0.4	480	G	10 x 10.2	500
10 Vdc (13 Vdc Surge)								
22.0	AHA226M10B12T-F	3.0	0.30	22.6	28	B	4 x 5.4	2000
33.0	AHA336M10B12T-F	3.3	0.30	15.1	29	B	4 x 5.4	2000
33.0	AHA336M10C12T-F	3.3	0.22	11.1	43	C	5 x 5.4	1000
47.0	AHA476M10C12T-F	4.7	0.30	10.6	43	C	5 x 5.4	1000
100.0	AHA107M10D16T-F	10.0	0.30	5.0	70	D	6.3 x 5.4	1000
100.0	AHA107M10E16T-F	10.0	0.26	4.3	110	E	8 x 6.2	1000
220.0	AHA227M10X16T-F	22.0	0.22	1.7	105	X	6.3 x 7.7	900
220.0	AHA227M10F24T-F	22.0	0.26	2.0	160	F	8 x 10.2	500
470.0	AHA477M10F24T-F	47.0	0.26	0.9	200	F	8 x 10.2	500
470.0	AHA477M10G24T-F	47.0	0.26	0.9	270	G	10 x 10.2	500
1000.0	AHA108M10G24T-F	100.0	0.26	0.4	580	G	10 x 10.2	500
16 Vdc (20 Vdc Surge)								
10.0	AHA106M16B12T-F	3.0	0.16	26.5	28	B	4 x 5.4	2000
22.0	AHA226M16B12T-F	3.5	0.26	19.6	28	B	4 x 5.4	2000
22.0	AHA226M16C12T-F	3.5	0.16	12.1	39	C	5 x 5.4	1000
33.0	AHA336M16C12T-F	5.3	0.26	13.1	35	C	5 x 5.4	1000
47.0	AHA476M16C12T-F	7.5	0.26	9.2	39	C	5 x 5.4	1000
47.0	AHA476M16D16T-F	7.5	0.16	5.6	70	D	6.3 x 5.4	1000
100.0	AHA107M16D16T-F	16.0	0.26	4.3	70	D	6.3 x 5.4	1000
220.0	AHA227M16X16T-F	35.2	0.16	1.2	105	X	6.3 x 7.7	900
220.0	AHA227M16F24T-F	35.2	0.20	1.5	150	F	8 x 10.2	500
220.0	AHA227M16G24T-F	35.2	0.20	1.5	210	G	10 x 10.2	500
330.0	AHA337M16F24T-F	52.8	0.20	1.0	170	F	8 x 10.2	500
330.0	AHA337M16G24T-F	52.8	0.20	1.0	230	G	10 x 10.2	500
470.0	AHA477M16F24T-F	75.2	0.20	0.7	190	F	8 x 10.2	500
470.0	AHA477M16G24T-F	75.2	0.20	0.7	340	G	10 x 10.2	500
25 Vdc (31 Vdc Surge)								
4.7	AHA475M25B12T-F	3.0	0.14	49.4	22	B	4 x 5.4	2000
10.0	AHA106M25B12T-F	3.0	0.20	33.2	22	B	4 x 5.4	2000
10.0	AHA106M25C12T-F	3.0	0.14	23.2	28	C	5 x 5.4	1000
22.0	AHA226M25C12T-F	5.5	0.20	15.1	35	C	5 x 5.4	1000
22.0	AHA226M25D16T-F	5.5	0.14	10.6	55	D	6.3 x 5.4	1000
33.0	AHA336M25C12T-F	8.3	0.20	10.0	42	C	5 x 5.4	1000
33.0	AHA336M25D16T-F	8.3	0.14	7.0	65	D	6.3 x 5.4	1000
47.0	AHA476M25D16T-F	11.8	0.20	7.1	70	D	6.3 x 5.4	1000
47.0	AHA476M25E16T-F	11.8	0.16	5.6	91	E	8 x 6.2	1000
100.0	AHA107M25E16T-F	25.0	0.16	2.7	91	E	8 x 6.2	1000
100.0	AHA107M25F24T-F	25.0	0.16	2.7	130	F	8 x 10.2	500
220.0	AHA227M25F24T-F	55.0	0.16	1.2	160	F	8 x 10.2	500
220.0	AHA227M25G24T-F	55.0	0.16	1.2	190	G	10 x 10.2	500
330.0	AHA337M25F24T-F	82.5	0.16	0.8	180	F	8 x 10.2	500
330.0	AHA337M25G24T-F	82.5	0.16	0.8	340	G	10 x 10.2	500
470.0	AHA477M25G24T-F	117.5	0.16	0.6	360	G	10 x 10.2	500

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Cap Cap (µF)	Catalog Part Number	Max DCL 2 min. (µA)	Max DF 120 Hz /20 °C	Max ESR 120 Hz /20 °C (Ω)	Max Ripple Current 120 Hz /105 °C (mA)	Case Code	Size D x L (mm)	Quantity per Reel
35 Vdc (44 Vdc Surge)								
4.7	AHA475M35B12T-F	3.0	0.12	42.3	22	B	4 x 5.4	2000
10.0	AHA106M35B12T-F	3.6	0.16	26.5	22	B	4 x 5.4	2000
10.0	AHA106M35C12T-F	3.6	0.12	19.9	30	C	5 x 5.4	1000
22.0	AHA226M35C12T-F	7.7	0.16	12.1	35	C	5 x 5.4	1000
22.0	AHA226M35D16T-F	7.7	0.12	9.0	60	D	6.3 x 5.4	1000
33.0	AHA336M35D16T-F	11.6	0.16	8.0	42	D	6.3 x 5.4	1000
33.0	AHA336M35E16T-F	11.6	0.14	7.0	84	E	8 x 6.2	1000
47.0	AHA476M35E16T-F	16.5	0.14	4.9	84	E	8 x 6.2	1000
47.0	AHA476M35F24T-F	16.5	0.14	4.9	98	F	8 x 10.2	500
100.0	AHA107M35X16T-F	35.0	0.12	2.0	84	X	6.3 x 7.7	900
100.0	AHA107M35F24T-F	35.0	0.14	2.3	120	F	8 x 10.2	500
100.0	AHA107M35G24T-F	35.0	0.14	2.3	160	G	10 x 10.2	500
220.0	AHA227M35F24T-F	77.0	0.14	1.1	170	F	8 x 10.2	500
220.0	AHA227M35G24T-F	77.0	0.14	1.1	210	G	10 x 10.2	500
330.0	AHA337M35G24T-F	115.5	0.14	0.7	250	G	10 x 10.2	500
50 Vdc (63 Vdc Surge)								
0.10	AHA104M50B12T-F	3.0	0.12	1990.0	1	B	4 x 5.4	2000
0.22	AHA224M50B12T-F	3.0	0.12	905.0	2	B	4 x 5.4	2000
0.33	AHA334M50B12T-F	3.0	0.12	603.0	3	B	4 x 5.4	2000
0.47	AHA474M50B12T-F	3.0	0.12	424.0	5	B	4 x 5.4	2000
1.0	AHA105M50B12T-F	3.0	0.12	199.0	10	B	4 x 5.4	2000
2.2	AHA225M50B12T-F	3.0	0.12	90.5	16	B	4 x 5.4	2000
3.3	AHA335M50B12T-F	3.0	0.12	60.3	16	B	4 x 5.4	2000
4.7	AHA475M50C12T-F	3.0	0.12	42.4	23	C	5 x 5.4	1000
10.0	AHA106M50D16T-F	5.0	0.12	19.9	35	D	6.3 x 5.4	1000
22.0	AHA226M50E16T-F	11.0	0.12	9.0	70	E	8 x 6.2	1000
33.0	AHA336M50X16T-F	16.5	0.12	6.0	60	X	6.3 x 7.7	900
33.0	AHA336M50E16T-F	16.5	0.12	6.0	70	E	8 x 6.2	1000
33.0	AHA336M50F24T-F	16.5	0.12	6.0	91	F	8 x 10.2	500
47.0	AHA476M50X16T-F	23.5	0.12	4.2	63	X	6.3 x 7.7	900
47.0	AHA476M50F24T-F	23.5	0.12	4.2	95	F	8 x 10.2	500
47.0	AHA476M50G24T-F	23.5	0.12	4.2	100	G	10 x 10.2	500
100.0	AHA107M50F24T-F	50.0	0.12	2.0	110	F	8 x 10.2	500
100.0	AHA107M50G24T-F	50.0	0.12	2.0	120	G	10 x 10.2	500
220.0	AHA227M50G24T-F	110.0	0.12	0.9	150	G	10 x 10.2	500
63 Vdc (75 Vdc Surge)								
10.0	AHA106M63E16T-F	6.3	0.18	29.9	25	E	8 x 6.2	1000
22.0	AHA226M63E16T-F	13.9	0.18	13.6	30	E	8 x 6.2	1000
22.0	AHA226M63F24T-F	13.9	0.18	13.6	30	F	8 x 10.2	500
33.0	AHA336M63G24T-F	20.8	0.18	9.0	45	G	10 x 10.2	500
47.0	AHA476M63F24T-F	29.6	0.18	6.3	50	F	8 x 10.2	500
47.0	AHA476M63G24T-F	29.6	0.18	6.3	50	G	10 x 10.2	500
100 Vdc (125 Vdc Surge)								
3.3	AHA335M2AE16T-F	3.3	0.18	90.5	30	E	8 x 6.2	1000
4.7	AHA475M2AE16T-F	4.7	0.18	63.5	30	E	8 x 6.2	1000
4.7	AHA475M2AF24T-F	4.7	0.18	63.5	50	F	8 x 10.2	500
10.0	AHA106M2AF24T-F	10.0	0.18	29.8	55	F	8 x 10.2	500
22.0	AHA226M2AF24T-F	22.0	0.18	13.6	55	F	8 x 10.2	500
22.0	AHA226M2AG24T-F	22.0	0.18	13.6	60	G	10 x 10.2	500
33.0	AHA336M2AG24T-F	33.0	0.18	9.0	65	G	10 x 10.2	500

Part Numbering System

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

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Typical Performance Curves

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



Capacitance vs. Temperature & Frequency
470 μ F @ 16 Vdc (10 X 10.2 mm)



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



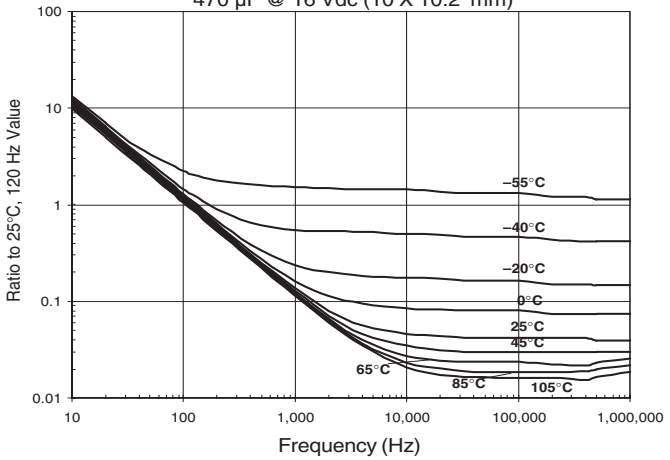
ESR vs. Temperature and Frequency
470 μ F @ 16 Vdc (10 X 10.2 mm)



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



Impedance vs. Temperature and Frequency
470 μ F @ 16 Vdc (10 X 10.2 mm)



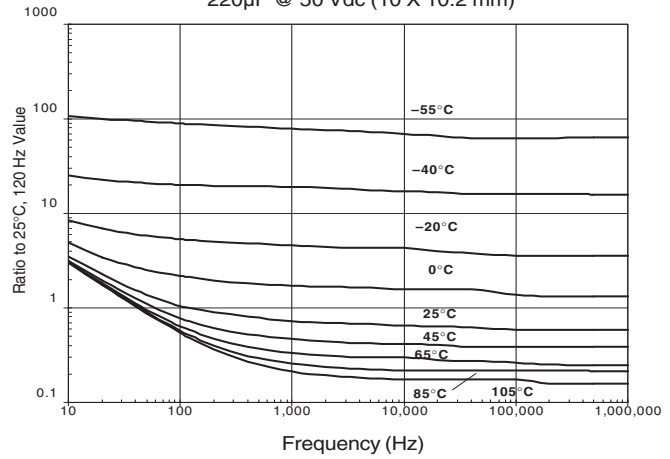
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Capacitance vs. Temperature & Frequency
220 μF @ 50 Vdc (10 X 10.2 mm)



ESR vs. Temperature and Frequency
220μF @ 50 Vdc (10 X 10.2 mm)



Impedance vs. Temperature and Frequency
220 μF @ 50 Vdc (10 X 10.2 mm)



Capacitance Change vs Time



Reflow Soldering Temperature Profile for Part Numbers Ending in -F



Case Code	Peak Temperature (°C)	Max. Time at or above 200°C (sec.)	Number of Reflow Processes
B, C, D, X	250	60	1
E, F, G	235	60	1

See SMT application guide for land pattern, tape and reel specifications, and cleaning information.



Стандарт Электрон Связь

Мы молодая и активно развивающаяся компания в области поставок электронных компонентов. Мы поставляем электронные компоненты отечественного и импортного производства напрямую от производителей и с крупнейших складов мира.

Благодаря сотрудничеству с мировыми поставщиками мы осуществляем комплексные и плановые поставки широчайшего спектра электронных компонентов.

Собственная эффективная логистика и склад в обеспечивает надежную поставку продукции в точно указанные сроки по всей России.

Мы осуществляем техническую поддержку нашим клиентам и предпродажную проверку качества продукции. На все поставляемые продукты мы предоставляем гарантию .

Осуществляем поставки продукции под контролем ВП МО РФ на предприятия военно-промышленного комплекса России , а также работаем в рамках 275 ФЗ с открытием отдельных счетов в уполномоченном банке. Система менеджмента качества компании соответствует требованиям ГОСТ ISO 9001.

Минимальные сроки поставки, гибкие цены, неограниченный ассортимент и индивидуальный подход к клиентам являются основой для выстраивания долгосрочного и эффективного сотрудничества с предприятиями радиоэлектронной промышленности, предприятиями ВПК и научно-исследовательскими институтами России.

С нами вы становитесь еще успешнее!

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