

ALUMINUM ELECTROLYTIC CAPACITORS

HAX series



- Load life: 125°C 2000~5000hours.
- HIGH QUALITY.
- Low Impedance at 100KHz with selected materials.

HIGH TEMPERATURE
125°C

SPECIFICATIONS

Item	Performance Characteristics									
Operating Temperature Range	-40°C ~ +125°C									
Rated Voltage Range	6.3~63V									
Capacitance Range	3.3~4700									
Capacitance Tolerance	±20%(120Hz, 20°C)									
Leakage Current (MAX)	I=0.01CV or 3 μA whichever is greater.(after 2 minutes) I=Leakage Current(μA), C=Nominal Capacitance(μF), V=Rated Voltage(V)									
Dissipation Factor (tan δ)	When nominal capacitance is over 1000 μF, tan δ shall be added 0.02 to the listed value with increase of every 1000 μF,									
	Rated voltage (V)	6.3	10	16	25	35	50	63	20°C	
	Tan δ	0.24	0.20	0.16	0.14	0.12	0.10	0.08	120Hz	
Low Temperature Stability Impedance Ratio	Rated Voltage(V)	6.3	10	16	25	35	50	63	(120Hz)	
	Z(-25°C)/Z(+20°C)	3	3	2	2	2	2	2		
	Z(-40°C)/Z(+20°C)	6	6	4	3	3	3	3		
Load Life	After life test with rated ripple at conditions stated in the table below, the capacitors shall meet The following requirements.									
	Leakage Current	Not more than the specified value						Case Dia	Life Time(hrs)	
	Capacitance Change	Within ±30% of initial value.						φ D≤8	2000	
	Dissipation Factor	Not more than 300% of the specified value						φ D=10	2000	
							φ D≥12.5	5000		
Shelf Life	After leaving capacitors under no load at 125°C for 500 hours and applying voltage according to JIS C-5102 4-3, they meet the specified value for load life characteristics listed above.									
Standard	According to JIS C 5141									

MULTIPLIER FOR RIPPLE CURRENT

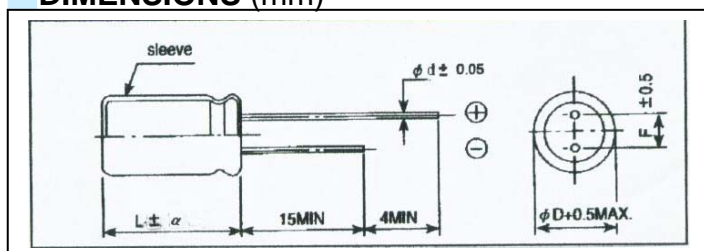
Frequency coefficient

Frequency(Hz) Cap(μF)	60(50)	120	1k	10k	≥ 100k
3.3~4.7μF	0.33	0.40	0.60	0.80	1.00
10~22μF	0.45	0.55	0.75	0.90	1.00
33~330μF	0.60	0.70	0.85	0.95	1.00
470~1000μF	0.65	0.75	0.90	0.98	1.00
2200~4700μF	0.75	0.80	0.95	1.00	1.00

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DIMENSIONS (mm)



φD	5	6.3	8	10	12.5	16	18
φd	0.5		0.6		0.8		
F	2.0	2.5	3.5	5.0		7.5	
α	$L \leq 16: \alpha = 1.5,$			$L \geq 20: \alpha = 2.0$			

STANDARD SIZE PERMISSIBLE RIPPLE CURRENT

Ripple Current (mA 125°C,100kHz) r.m.s

Rated voltage 6.3V (0J)			
Nominal capacitance (uF)	Size $\varphi D \times L$ (mm)	Ripple Current	Impedance (Ω MAX)
			20°C, 100kHz
100	5x11	150	0.35
220	6.3x11	220	0.30
330	8x11.5	300	0.25
470	8x11.5	380	0.20
680	8x16	500	0.18
	10x12.5	650	0.14
1000	10x16	820	0.095
1500	10x20	990	0.070
2200	12.5x20	1240	0.054
3300	12.5x25	1500	0.040
4700	12.5x30	1855	0.036

Ripple Current (mA 125°C,100kHz) r.m.s

Rated voltage 10V (1A)			
Nominal capacitance (uF)	Size $\varphi D \times L$ (mm)	Ripple Current	Impedance (Ω MAX)
			20°C, 100kHz
100	5x11	220	0.30
220	6.3x11	300	0.25
330	8x11.5	380	0.20
470	8x16	500	0.18
	10x12.5	650	0.14
680	8x20	550	0.16
	10x12.5	650	0.12
1000	10x20	990	0.070
2200	12.5x25	1500	0.042
3300	12.5x25	1757	0.038
4700	12.5x35	1855	0.036

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Ripple Current (mA 125°C, 100kHz) r.m.s

Rated voltage 16V (1C)			
Nominal capacitance (uF)	Size	Ripple Current	Impedance (Ω MAX)
	φ DxL(mm)		20°C, 100kHz
220	8X11.5	350	0.25
330	8X11.5	380	0.20
470	8X16	550	0.17
470	10X12.5	650	0.14
1000	10X20	990	0.070
1500	10X20	1100	0.065
2200	12.5X25	1500	0.038
3300	12.5X30	1855	0.036

Ripple Current (mA 125°C, 100kHz) r.m.s

Rated voltage 25V (1E)			
Nominal capacitance (uF)	Size	Ripple Current	Impedance (Ω MAX)
	φ DxL(mm)		20°C, 100kHz
220	8X11.5	380	0.20
330	10X12.5	650	0.14
470	10X16	900	0.09
1000	12.5X20	1200	0.05
1500	12.5X25	1500	0.04
2200	12.5X35	1855	0.035
3300	16X31.5	2155	0.030

Ripple Current (mA 125°C, 100kHz) r.m.s

Rated voltage 35V (1V)			
Nominal capacitance (uF)	Size	Ripple Current	Impedance (Ω MAX)
	φ DxL(mm)		20°C, 100kHz
33	6.3 X11	155	0.88
47	6.3 X11	243	0.59
100	8 X11.5	380	0.20
220	10 X12.5	650	0.14
330	10 X16	900	0.09
470	10 X20	990	0.070
1000	12.5 X25	1500	0.038
1500	16 X31.5	1900	0.032

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Ripple Current (mA 125°C, 100kHz) r.m.s

Rated voltage 50V (1H)			
Nominal capacitance (uF)	Size	Ripple Current	Impedance (Ω MAX)
	φ DxL(mm)		20°C, 100kHz
3.3	5 X11	55	2.97
4.7	5 X11	65	2.52
3.3	8 X11.5	75	1.25
4.7	8 X11.5	110	0.80
10	8 X11.5	220	0.55
22	8 X11.5	280	0.32
33	8 X11.5	330	0.27
47	8 X11.5	350	0.26
68	8 X11.5	400	0.20
100	10 X12.5	530	0.17
220	10 X20	780	0.12
330	10 X28	1280	0.07
470	12.5 X25	1530	0.05
820	12.5 X35	1757	0.038
1000	13 X35	1900	0.038
1500	16 X40	2100	0.030

★ 1000/50v 只能做 13 φ

Ripple Current (mA 125°C, 100kHz) r.m.s

Rated voltage 63V (1J)			
Nominal capacitance (uF)	Size	Ripple Current	Impedance (Ω MAX)
	φ DxL(mm)		20°C, 100kHz
33	8 x11.5	270	0.38
47	10 X12.5	400	0.26
100	10 X16	480	0.19
220	12.5 X20	930	0.09
330	16 X25	1500	0.06
470	16 X31.5	1757	0.05
820	16 X40	1900	0.038