

# SAK

## +85°C Low Profile Radial Lead Aluminum Electrolytic Capacitors



For all general purpose applications

### FEATURES

- Low Profile
- Voltage range: 6.3 WVDC to 400 WVDC
- Capacitance range: 1  $\mu$ F to 10,000  $\mu$ F

### SPECIFICATIONS

Capacitance Tolerance		$\pm 20\%$ at 120Hz, 20°C												
Operating Temperature Range		-40°C to +85°C												
Dissipation Factor 120Hz, 20°C	WVDC	6.3	10	16	25	35	50	63	100	160	200	250	400	
	tan $\delta$	.28	.24	.20	.28	.16	.14	.10	.08	.20	.20	.20	.25	
		Note: For above D.F. specifications, add .02 for every 1,000 $\mu$ F above 1,000 $\mu$ F												
Impedance Ratio (Max.) @120Hz	WVDC	6.3	10	16	25	35	50	63	100	160	200	250	400	
	-25/20°C	5	4	3	2	2	2	2	2	4	4	4	4	
	-40/20°C	12	10	8	5	4	3	3	3	15	15	15	10	
Leakage Current	WVDC	$\leq 100$ WVDC				$\leq 100$ WVDC				$\leq 150$ WVDC				
	Time	1 minute				2 minutes				1 minute				
		.03 CV or 4 $\mu$ A Whichever is greater				.01 CV or 3 $\mu$ A Whichever is greater				.04 CV or 100 $\mu$ A				
Load Life	2,000 hours at 85°C with rated WVDC Capacitors will meet the requirements listed below													
	Capacitance change Dissipation factor Leakage current						<20% of initial measured value <200% of initial specified value <Initial specified value							
Shelf Life		1,000 hours at 85°C with no voltage applied. Units will meet load life specifications.												
Ripple Multipliers	WVDC	Capacitance ( $\mu$ F)	Frequency(Hz)					Temperature(°C)						
			60	120	300	1K	10K	+105°C	+85°C	+70°C				
	6.3 to 100	$\leq 47$	0.75	1.0	1.35	1.57	2.0	1.0	1.3	1.5				
		$47 < C \leq 470 \mu$ F	0.8	1.0	1.23	1.32	1.5	1.0	1.3	1.5				
		$470 < C \leq 1,000 \mu$ F	0.85	1.0	1.1	1.13	1.15	1.0	1.3	1.5				
160 to 400	10 to 150 $\mu$ F	0.8	1.0	1.25	1.40	1.60	1.0	1.4	1.8					

### SPECIAL ORDER OPTIONS

(See pages 33 thru 37)

- Special tolerances:  $\pm 10\%$  (K),  $-10\% + 30\%$  (Q)
- Tape and Reel/Ammo-Pack
- Cut, Formed, Cut and Formed, and Snap In Leads



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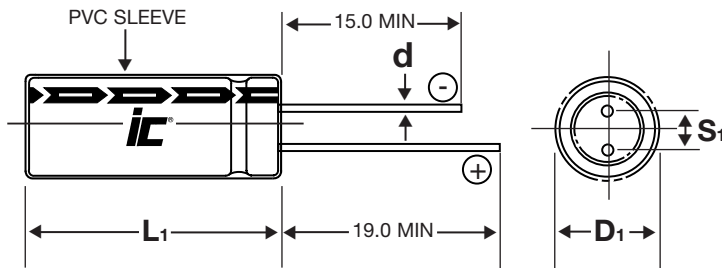
Aluminum Electrolytic

## PHYSICAL DIMENSIONS

WVDC (SV) / (μF)	6.3 (8)	10 (13)	16 (20)	25 (32)	35 (44)	50 (63)	63 (79)	100 (125)	160 (200)	200 (250)	250 (300)	400 (450)
1						5x9		5x9				
2.2						5x9		5x9				
3.3						5x9		5x9				
4.7						5x9		5x9				
10							5x9	6.3x9				16x15
22						5x9	6.3x9	8x9			16x15	18x15
33					5x9	6.3x9	6.3x9	10x9		16x15	18x15	18x20
47				5x9		6.3x9	8x9	10x12.5	16x15	18x15	18x20	18x25
68									18x15		18x20	
100		5x9		6.3x9	8x9	10x9	10x12.5	12.5x15	18x20		18x25	
150									18x25			
220		6.3x9	8x9		10x9		12.5x12.5	16x15				
330	6.3x9	8x9		10x9	10x12.5	12.5x12.5	12.5x15	18x20				
470		8x9	10x9	10x12.5	12.5x12.5	16x15	18x15	18x25				
1000	10x9	10x12.5	12.5x12.5	12.5x15	16x15	18x20	18x25					
2200		12.5x15	16x15	18x15	18x20	18x25						
3300		16x15	18x15	18x20								
4700	16x15	18x15	18x20	18x25								
6800	18x15	18x20	18x25									
10000	18x20	18x25										

Convert to inches, divide by 25.4

DxL(mm)



Note: Case Vent is standard on all diameters ≥ 8.0 mm.

### LEAD INFORMATION V.S. CASE DIAMETER

D	5.0	6.3	8.0	10.0	12.5	16.0	18.0
S	2.0	2.5	3.5	5.0	5.0	7.5	7.5
d	0.5	0.5	0.6	0.6	0.6	0.8	0.8
B	0.5	0.5	0.5	0.5	0.8	0.5	0.5

$L_1 = L + 1.0$ mm Max.  $D \leq 8$ mm  
 $L_1 = L + 1.5$ mm Max.  $D \geq 10$ mm  
 $D_i = D + B$  Max.  
 $S_i = S \pm 0.5$  Max.

## STANDARD PART LISTING

Capacitance (µF)	WVDC	IC <sup>®</sup> PART NUMBER	Maximum ESR Ω 120Hz, +20°C	Maximum RMS Ripple Current (mA) 120Hz, +85°C	Dimensions DxL (mm)
1	50	105SAK050M	198.944	13	5x9
1	100	105SAK100M	132.629	21	5x9
2.2	50	225SAK050M	90.429	26	5x9
2.2	100	225SAK100M	60.286	30	5x9
3.3	50	335SAK050M	60.286	35	5x9
3.3	100	335SAK100M	40.191	40	5x9
4.7	50	475SAK050M	42.328	40	5x9
4.7	100	475SAK100M	28.219	50	5x9
10	63	106SAK063M	16.579	70	5x9
10	100	106SAK100M	13.263	80	6.3x9
10	400	106SAK400M	41.447	140	16x15
22	50	226SAK050M	9.043	90	5x9
22	63	226SAK063M	7.536	110	6.3x9
22	100	226SAK100M	6.029	135	8x9
22	250	226SAK250M	15.071	280	16x15
22	400	226SAK400M	18.839	280	18x15
33	35	336SAK035M	7.033	100	5x9
33	50	336SAK050M	6.029	120	6.3x9
33	63	336SAK063M	5.024	135	6.3x9
33	100	336SAK100M	4.019	170	10x9
33	200	336SAK200M	10.048	350	16x15
33	250	336SAK250M	10.048	350	18x15
33	400	336SAK400M	12.560	350	18x20
47	25	476SAK025M	5.644	110	5x9
47	50	476SAK050M	4.233	140	6.3x9
47	63	476SAK063M	3.527	175	8x9
47	100	476SAK100M	2.822	230	10x12.5
47	160	476SAK160M	7.055	420	16x15
47	200	476SAK200M	7.055	420	18x15
47	250	476SAK250M	7.055	420	18x20
47	400	476SAK400M	8.818	420	18x25
68	160	686SAK160M	4.876	490	18x15
68	250	686SAK250M	4.876	490	18x20
100	10	107SAK010M	3.979	135	5x9
100	25	107SAK025M	2.653	180	6.3x9
100	35	107SAK035M	2.321	210	8x9
100	50	107SAK050M	1.989	240	10x9
100	63	107SAK063M	1.658	300	10x12.5
100	100	107SAK100M	1.326	370	12.5x15
100	160	107SAK160M	3.316	590	18x20
100	250	107SAK250M	3.316	590	18x25
150	200	157SAK200M	2.210	710	18x25
220	10	227SAK010M	1.809	220	6.3x9

Capacitance (µF)	WVDC	IC <sup>®</sup> PART NUMBER	Maximum ESR Ω 120Hz, +20°C	Maximum RMS Ripple Current (mA) 120Hz, +85°C	Dimensions DxL (mm)
220	16	227SAK016M	1.507	270	8x9
220	35	227SAK035M	1.055	330	10x9
220	63	227SAK063M	0.754	470	12.5x12.5
220	100	227SAK100M	0.603	620	16x15
330	6.3	337SAK6R3M	1.407	250	6.3x9
330	10	337SAK010M	1.206	300	8x9
330	25	337SAK025M	0.804	370	10x9
330	35	337SAK035M	0.703	460	10x12.5
330	50	337SAK050M	0.603	520	12.5x12.5
330	63	337SAK063M	0.502	600	12.5x15
330	100	337SAK100M	0.402	830	18x20
470	10	477SAK010M	0.847	360	8x9
470	16	477SAK016M	0.705	400	10x9
470	25	477SAK025M	0.564	520	10x12.5
470	35	477SAK035M	0.494	570	12.5x12.5
470	50	477SAK050M	0.423	730	16x15
470	63	477SAK063M	0.353	840	18x15
470	100	477SAK100M	0.282	1080	18x25
1000	6.3	108SAK6R3M	0.464	490	10x9
1000	10	108SAK010M	0.398	620	10x12.5
1000	16	108SAK016M	0.332	700	12.5x12.5
1000	25	108SAK025M	0.265	820	12.5x15
1000	35	108SAK035M	0.232	990	16x15
1000	50	108SAK050M	0.199	1180	18x20
1000	63	108SAK063M	0.166	1410	18x25
2200	10	228SAK010M	0.211	950	12.5x15
2200	16	228SAK016M	0.181	1170	16x15
2200	25	228SAK025M	0.151	1350	18x15
2200	35	228SAK035M	0.136	1520	18x20
2200	50	228SAK050M	0.121	1750	18x25
3300	10	338SAK010M	0.151	1270	16x15
3300	16	338SAK016M	0.131	1430	18x15
3300	25	338SAK025M	0.111	1660	18x20
4700	6.3	478SAK6R3M	0.120	1380	16x15
4700	10	478SAK010M	0.113	1530	18x15
4700	16	478SAK016M	0.099	1740	18x20
4700	25	478SAK025M	0.085	2060	18x25
6800	6.3	688SAK6R3M	0.112	1640	18x15
6800	10	688SAK010M	0.088	1830	18x20
6800	16	688SAK016M	0.078	2120	18x25
10000	6.3	109SAK6R3M	0.076	1950	18x20
10000	10	109SAK010M	0.070	2230	18x25