



**THE DATASHEET OF  
228SAK050M**





#### FEATURES

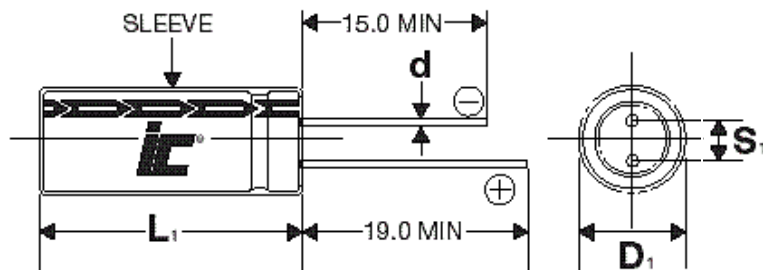
Small Size - Low Profile - Lead Free Leads

#### APPLICATIONS

Filtering - Bypass - Coupling - Blocking

<b>Operating Temperature Range</b>		<b>-40°C to +85°C</b>											
<b>Capacitance Tolerance</b>		<b>±20% at 120 Hz, 20°C</b>											
<b>Surge voltage</b>	<b>WVDC</b>	6.3	10	16	25	35	50	63	100	160	200	250	400
	<b>SVDC</b>	7.9	13	20	32	44	63	79	125	200	250	300	450
<b>Dissipation Factor</b>	<b>WVDC</b>	6.3	10	16	25	35	50	63	100	160	200	250	400
	<b>Tan δ</b>	.28	.24	.2	.16	.14	.12	.1	.08	.2	.2	.2	.25
Add .02 for every 1000uF above 1000uF													
<b>Leakage current</b>		<b>≤100 WVDC</b>				<b>≤100 WVDC</b>				<b>160 to 400 WVDC</b>			
		<b>1 Minutes</b>				<b>2 Minutes</b>				<b>1 Minutes</b>			
		.03CV or 4uA, Whichever is greater				.01CV or 3uA, Whichever is greater				.04CV or 100uA			
<b>Low temperature stability Impedance ratio (120 Hz)</b>	<b>WVDC</b>	6.3	10	16	25	35	50	63	100	160	200	250	400
	<b>-25°C to +20°C</b>	5	4	3	2	2	2	2	2	4	4	4	4
	<b>-40°C to +20°C</b>	12	10	8	5	4	3	3	3	15	15	15	10
<b>Load Life</b>		<b>2000 hours at 85°C with rated WVDC and ripple current applied</b>											
		<b>Capacitance change</b>						<20% of initial measured value					
		<b>Dissipation factor</b>						<200% of maximum specified value					
		<b>Leakage current</b>						>100% of maximum specified value					
<b>Shelf Life</b>		<b>1000 hours at 105°C with no voltage applied</b>											
		<b>Capacitance change</b>						<20% initial measured value					
		<b>Dissipation factor</b>						<200% of maximum specified value					
		<b>Leakage current</b>						>100% of maximum specified value					
<b>Ripple Current Multipliers</b>		<b>WVDC</b>	<b>Capacitance (uF)</b>		<b>Frequency (Hz)</b>					<b>Temperature (°C)</b>			
			50	120	300	1k	10k	+85	+70	+60			
		<b>6.3 to 100V</b>	<b>C&lt;47</b>		.75	1.0	1.35	1.57	2.0	1.0	1.3	1.5	
		<b>6.3 to 100V</b>	<b>47&lt;C&lt;470</b>		.8	1.0	1.23	1.32	1.5	1.0	1.3	1.5	
		<b>6.3 to 100V</b>	<b>C&gt;470</b>		.85	1.0	1.1	1.13	1.15	1.0	1.3	1.5	
<b>160 to 400V</b>	<b>all</b>		.8	1.0	1.25	1.40	1.60	1.0	1.4	1.8			

#### Special Order Options



D	5	6.3	8	10	12.5	16	18
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

L<sub>1</sub>=L+1.5mm Max.  
D<sub>1</sub>=D+0.5mm Max.  
S<sub>1</sub>=S+0.5 mm

# SAK

+85°C, Low Profile, 2000 hours

WVDC	Capacitance (µF)	IC PART NUMBER	Maximum ESR (Ω) 120 Hz, +20°C	Maximum RMS Ripple Current (mA) 120 Hz, +85°C	Dims DxL (mm)
6.3	330	337SAK6R3M	1.407	250	6.3x9
6.3	1000	108SAK6R3M	0.464	490	10x9
6.3	4700	478SAK6R3M	0.12	1380	16x15
6.3	6800	688SAK6R3M	0.1	1640	18x15
6.3	10000	109SAK6R3M	0.08	1950	18x20
10	100	107SAK010M	3.979	135	5x9
10	220	227SAK010M	1.809	220	6.3x7
10	330	337SAK010M	1.206	300	8x9
10	470	477SAK010M	0.847	360	8x9
10	1000	108SAK010M	0.398	620	10x12.5
10	2200	228SAK010M	0.211	950	12.5x15
10	3300	338SAK010M	0.151	1270	16x15
10	4700	478SAK010M	0.113	1530	18x15
10	6800	688SAK010M	0.09	1830	18x20
10	10000	109SAK010M	0.07	2230	18x25
16	220	227SAK016M	1.507	270	8x9
16	470	477SAK016M	0.706	400	10x9
16	2200	228SAK016M	0.181	1170	16x15
16	3300	338SAK016M	0.131	1430	18x15
16	4700	478SAK016M	0.099	1740	18x20
16	6800	688SAK016M	0.08	2120	18x25
25	47	476SAK025M	5.644	110	5x9
25	100	107SAK025M	2.653	180	6.3x9
25	330	337SAK025M	0.804	370	10x9
25	470	477SAK025M	0.564	520	10x12.5
25	1000	108SAK025M	0.265	820	12.5x15
25	2200	228SAK025M	0.151	1350	18x15
25	3300	338SAK025M	0.111	1660	18x20
25	4700	478SAK025M	0.085	2060	18x25
35	33	336SAK035M	7.033	100	5x9
35	100	107SAK035M	2.321	210	8x9
35	220	227SAK035M	1.055	330	10x9
35	330	337SAK035M	0.703	460	10x12.5
35	470	477SAK035M	0.494	570	12.5x12.5
35	1000	108SAK035M	0.232	990	16x15
35	2200	228SAK035M	0.136	1520	18x20
50	1	105SAK050M	198.944	13	5x9
50	2.2	225SAK050M	90.429	26	5x9
50	3.3	335SAK050M	60.286	35	5x9
50	4.7	475SAK050M	42.328	40	5x9
50	22	226SAK050M	9.043	90	5x9
50	33	336SAK050M	6.029	120	6.3x9

WVDC	Capacitance (µF)	IC PART NUMBER	Maximum ESR (Ω) 120 Hz, +20°C	Maximum RMS Ripple Current (mA) 120 Hz, +85°C	Dims DxL (mm)
50	47	476SAK050M	4.233	140	6.3x9
50	100	107SAK050M	1.989	240	10x9
50	330	337SAK050M	0.603	520	12.5x12.5
50	470	477SAK050M	0.423	730	16x15
50	1000	108SAK050M	0.199	1180	18x20
50	2200	228SAK050M	0.121	1750	18x25
63	10	106SAK063M	16.579	70	5x9
63	22	226SAK063M	7.536	110	6.3x9
63	33	336SAK063M	5.024	135	6.3x9
63	47	476SAK063M	3.527	175	8x9
63	100	107SAK063M	1.658	300	10x12.5
63	220	227SAK063M	0.754	470	12.5x12.5
63	330	337SAK063M	0.502	600	12.5x15
63	470	477SAK063M	0.353	840	18x15
63	1000	108SAK063M	0.166	1410	18x25
100	1	105SAK100M	132.629	21	5x9
100	2.2	225SAK100M	60.29	30	5x9
100	3.3	335SAK100M	40.191	40	5x9
100	4.7	475SAK100M	28.219	50	5x9
100	10	106SAK100M	13.263	80	6.3x9
100	22	226SAK100M	6.029	135	8x9
100	33	336SAK100M	4.019	170	10x9
100	47	476SAK100M	2.822	230	10x12.5
100	100	107SAK100M	1.326	370	12.5x15
100	220	227SAK100M	0.603	620	16x15
100	330	337SAK100M	0.402	830	18x20
100	470	477SAK100M	0.282	1080	18x25
160	47	476SAK160M	7.055	420	16x15
160	68	686SAK160M	4.876	490	18x15
160	100	107SAK160M	3.316	590	18x20
200	33	336SAK200M	10.048	350	16x15
200	47	476SAK200M	7.055	420	18x15
200	150	157SAK200M	2.21	710	18x25
250	22	226SAK250M	15.071	280	16x15
250	33	336SAK250M	10.048	350	18x15
250	47	476SAK250M	7.055	420	18x20
250	68	686SAK250M	4.876	490	18x20
250	100	107SAK250M	3.316	590	18x25
400	10	106SAK400M	41.447	140	16x15
400	22	226SAK400M	18.839	280	18x15
400	33	336SAK400M	12.56	350	18x20
400	47	476SAK400M	8.818	420	18x25

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