THE DATASHEET OF

SKA331M050

Type SKA Axial Leaded Aluminum Electrolytic Capacitors

85 °C Extended Life General Purpose Capacitor



Type SKA is an axial leaded, 85 °C, 2000 hour extended life general purpose capacitor with a high CV per case size rating. It is suitable for consumer electronic products such as radio and TV applications.

Highlights

- General purpose
- High CV per case size
- Miniature Size
- Available on T&R or Ammo Pack

Specifications

Capacitance Range: 0.47 to 15,000 µF
Voltage Range: 6.3 to 450 WVdc
Capacitance Tolerance: ±20%
Operating Termperature Range: –40 °C to 85 °C
Dissipation Factor:

Rated Voltage (V)	6.3	10	16	25	35	50	63	100	160 - 350	400 - 450
tan (δ)	0.24	0.2	0.17	0.15	0.12	0.10	0.10	0.10	0.20	0.25

For capacitance >1,000 µF, add .002 for every increase of 1,000 µF at 120 Hz, 20 °C

DC Leakage Current: 6.3 to 100 Vdc; I = .01CV or 3 µA @ 5 minutes
>100Vdc; I = .01CV + 100 µA
C = Capacitance in µF
V = Rated voltage
I = Leakage current in µA

RoHS Compliant

Complies with the EU Directive 2002/95/EC requirement restricting the use of Lead (Pb), Mercury (Hg), Cadmium (Cd), Hexavalent chromium (Cr(VI)), PolyBrominated Biphenyls (PBB) and PolyBrominated Diphenyl Ethers (PBDE).

Ripple Current Multipliers:

Rated WVdc	Ripple Multipliers 60 Hz	120 Hz	1 kHz
6 to 25	0.85	1.0	1.10
35 to 100	0.80	1.0	1.15
160 to 250	0.75	1.0	1.25

Ambient Temperature	+65 °C	+75 °C	+85 °C
Ripple Multiplier	1.25	1.14	1.00

QA Stability Test: Apply WVdc for 2,000 h at 85 °C
- Capacitance change ≤20% from initial limits
- DC leakage current meets initial limits
- ESR ≤150% of initial measured value

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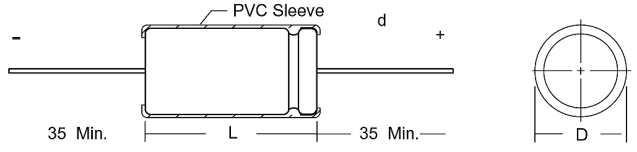
Outline Drawing

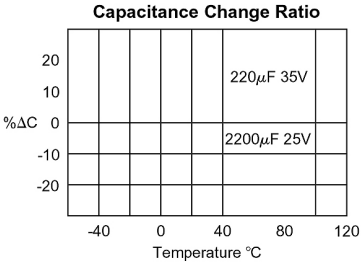


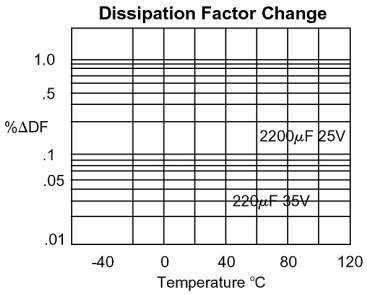
Case vented on diameters 6.3 and greater.

Vinyl sleeve adds .5 Max. to diameter and 2.0 Max. to length.

(Millimeters)

Temperature Characteristics





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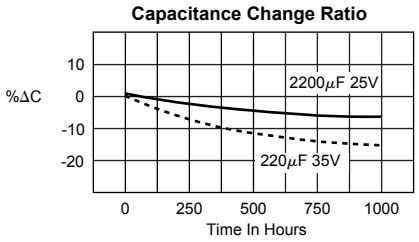
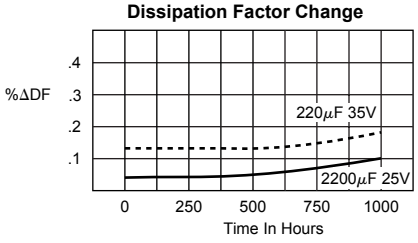
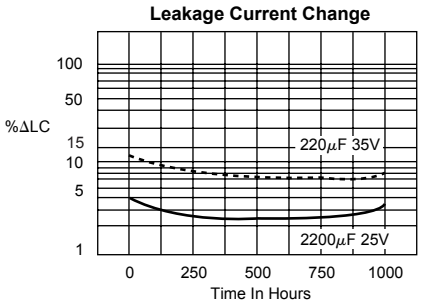
Load Life Characteristics







Ratings

Cap (μF)	Catalog Part Number	Max ESR 120 Hz 25 °C (Ω)	Max Ripple 120 Hz 85 °C (mA)	Max LC 5 Min. (μA)	Size Diameter D (mm)	Size Length L (mm)	Lead Wire (d)
6.3 WVdc (8 Vdc Surge)							
47	SKA470M6R3	10.60	65	3.0	5.0	12.5	0.6
100	SKA101M6R3	5.00	116	7.0	6.0	12.5	0.6
220	SKA221M6R3	1.33	204	13.9	6.3	16.0	0.6
330	SKA331M6R3	1.10	300	20.8	8.0	16.0	0.6
470	SKA471M6R3	0.62	396	29.3	8.0	16.0	0.6
1,000	SKA102M6R3	0.30	500	63.0	10.0	20.0	0.6
2,200	SKA222M6R3	0.14	826	138.6	13.0	25.0	0.6
3,300	SKA332M6R3	0.10	1020	207.9	13.0	30.0	0.6
10,000	SKA103M6R3	0.07	1450	630.0	18.0	45.0	0.8
15,000	SKA153M6R3	0.06	1800	945.0	22.0	40.0	0.8
10 WVdc (13 Vdc Surge)							
47	SKA470M010	6.94	75	5	5	12.5	0.6
100	SKA101M010	3.26	180	10	6	16.0	0.6
220	SKA221M010	1.48	204	22	8	16.0	0.6
330	SKA331M010	0.99	249	33	8	16.0	0.6
470	SKA471M010	0.67	400	47	8	20.0	0.6
1,000	SKA102M010	0.33	585	100	10	21.0	0.6
2,200	SKA222M010	0.15	920	220	13	25.0	0.6
3,300	SKA332M010	0.10	1090	330	13	30.0	0.6
4,700	SKA472M010	0.08	1200	470	16	30.0	0.8
16 WVdc (20 Vdc Surge)							
33	SKA330M016	6.84	60	5.3	6	12.5	0.6
47	SKA470M016	4.80	70	7.5	6	12.5	0.6
100	SKA101M016	2.76	125	16.0	6	16.0	0.6
220	SKA221M016	1.27	221	35.2	8	16.0	0.6
330	SKA331M016	0.85	350	52.8	8	20.0	0.6
470	SKA471M016	0.53	440	75.2	10	17.0	0.6
1,000	SKA102M016	0.21	680	180.0	10	26.0	0.6
2,200	SKA222M016	0.11	1000	352.0	13	30.0	0.6
3,300	SKA332M016	0.10	1200	528.0	16	30.0	0.8
4,700	SKA472M016	0.07	1360	752.0	16	40.0	0.8
25 WVdc (32 Vdc Surge)							
22	SKA220M025	10.05	53	5.5	6	12.5	0.6
33	SKA330M025	6.70	77	8.3	6	12.5	0.6
47	SKA470M025	4.70	91	11.8	6	12.5	0.6
100	SKA101M025	2.21	158	25.0	8	16.0	0.6
220	SKA221M025	1.01	257	55.0	8	20.0	0.6
330	SKA331M025	0.76	367	82.5	10	16.0	0.6
470	SKA471M025	0.47	480	118.0	10	21.0	0.6
1,000	SKA102M025	0.22	850	250.0	13	24.0	0.6
2,200	SKA222M025	0.11	1200	550.0	16	30.0	0.8
3,300	SKA332M025	0.09	1300	825.0	16	40.0	0.8
4,700	SKA472M025	0.07	1500	1175.0	18	42.0	0.8

Cap (μF)	Catalog Part Number	Max ESR 120 Hz 25 °C (Ω)	Max Ripple 120 Hz 85 °C (mA)	Max LC 5 Min. (μA)	Size Diameter D (mm)	Size Length L (mm)	Lead Wire (d)
35 WVdc (44 Vdc Surge)							
10	SKA100M035	17.68	35	3.5	5	12.5	0.6
22	SKA220M035	8.08	53	7.7	6	12.5	0.6
33	SKA330M035	5.54	70	11.6	6	16.0	0.6
47	SKA470M035	3.76	121	16.5	6	16.0	0.6
100	SKA101M035	1.77	194	35.0	8	16.0	0.6
220	SKA221M035	0.80	335	77.0	10	16.0	0.6
330	SKA331M035	0.54	440	115.5	10	21.0	0.6
470	SKA471M035	0.38	550	164.5	10	26.0	0.6
1,000	SKA102M035	0.18	992	350.0	13	32.0	0.6
2,200	SKA222M035	0.09	1250	770.0	16	40.0	0.8
3,300	SKA332M035	0.07	1400	1155.0	18	42.0	0.8
4,700	SKA472M035	0.06	1600	1645.0	22	40.0	0.8
50 WVdc (63 Vdc Surge)							
10	SKA100M050	14.74	36	5.0	6	12.5	0.6
22	SKA220M050	6.70	58	11.0	6	16.0	0.6
33	SKA330M050	4.47	111	16.5	6	16.0	0.6
47	SKA470M050	3.14	130	23.5	8	16	0.6
100	SKA101M050	1.47	250	50.0	8	20	0.6
220	SKA221M050	0.67	388	110.0	10	20	0.6
330	SKA331M050	0.45	433	165.0	10	25	0.6
470	SKA471M050	0.31	650	235.0	13	27	0.6
1,000	SKA102M050	0.15	1050	500.0	16	30	0.8
2,200	SKA222M050	0.08	1300	1100.0	18	40	0.8
3,300	SKA332M050	0.06	1500	1650.0	22	40	0.8
4,700	SKA472M050	0.06	3305	2350.0	22	40	0.8
63 WVdc (79 Vdc Surge)							
4.7	SKA4R7M063	31.4	32	3.0	6	12.5	0.6
10	SKA100M063	14.7	51	6.3	6	12.5	0.6
22	SKA220M063	6.7	91	13.9	6	16.0	0.6
33	SKA330M063	4.47	111	20.8	8	16.0	0.6
47	SKA470M063	3.14	133	29.6	8	16.0	0.6
100	SKA101M063	1.47	247	63.0	10	17.0	0.6
220	SKA221M063	0.67	450	138.6	10	25.0	0.6
330	SKA331M063	0.45	550	207.9	13	27.0	0.6
470	SKA471M063	0.31	750	296.1	13	32.0	0.6
1,000	SKA102M063	0.15	1100	630.0	16	40.0	0.8
2,200	SKA222M063	0.08	1400	1386.0	22	40.0	0.8

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Cap (µF)	Catalog Part Number	Max ESR 120 Hz 25 °C (Ω)	Max Ripple 120 Hz 85 °C (mA)	Max LC 5 Min. (µA)	Size Diameter D (mm)	Size Length L (mm)	Lead Wire (d)
100 WVdc (125 Vdc Surge)							
0.47	SKAR47M100	250.80	5	3.0	5	12.5	0.6
1.0	SKA010M100	117.90	12	3.0	5	12.5	0.6
2.2	SKA2R2M100	53.59	21	3.0	6	12.5	0.6
3.3	SKA3R3M100	35.73	30	3.3	6	12.5	0.6
4.7	SKA4R7M100	25.08	39	4.7	6	12.5	0.6
10	SKA100M100	11.79	68	10.0	6	16.0	0.6
22	SKA220M100	5.36	111	22.0	8	16.0	0.6
33	SKA330M100	3.57	136	33.0	8	20.0	0.6
47	SKA470M100	2.51	189	47.0	10	21.0	0.6
68	SKA680M100	1.98	1260	68.0	10	21.0	0.6
100	SKA101M100	1.18	350	100.0	10	26.0	0.6
220	SKA221M100	0.54	550	220.0	13	32.0	0.6
330	SKA331M100	0.36	700	330.0	16	30.0	0.8
470	SKA471M100	0.25	1031	470.0	25	43.0	0.8
1,000	SKA102M100	0.12	1447	1000.0	22	40.0	0.8
160 WVdc (200 Vdc Surge)							
1.0	SKA010M160	266.00	13	101.6	6	16	0.6
2.2	SKA2R2M160	121.00	22	103.5	6	16	0.6
3.3	SKA3R3M160	80.40	31	105.3	8	16	0.6
4.7	SKA4R7M160	56.50	40	107.5	8	16	0.6
10	SKA100M160	26.60	63	116.0	8	20	0.6
22	SKA220M160	12.10	108	135.2	10	20	0.6
33	SKA330M160	8.04	144	152.8	10	25	0.6
47	SKA470M160	5.65	180	175.2	13	30	0.6
100	SKA101M160	2.66	270	260.0	13	22	0.6
150	SKA151M160	1.21	400	340.0	16	33	0.8
200 WVdc (250 Vdc Surge)							
1.0	SKA010M200	332.0	17	102.5	6	16	0.6
2.2	SKA2R2M200	151.0	30	105.5	8	16	0.6
3.3	SKA3R3M200	101.0	40	108.3	8	16	0.6
4.7	SKA4R7M200	70.6	50	111.7	8	16	0.6
10	SKA100M200	33.2	80	125.0	8	20	0.6
15	SKA150M200	25.6	105	137.5	10	17	0.6
22	SKA220M200	15.1	140	155.0	10	20	0.6
33	SKA330M200	10.1	175	182.5	10	25	0.6
47	SKA470M200	7.06	215	217.5	13	22	0.6
68	SKA680M200	5.58	265	270.0	13	32	0.6
100	SKA101M200	3.32	340	350.0	16	33	0.8
150	SKA151M200	1.34	403	475.0	16	33	0.8

Cap (µF)	Catalog Part Number	Max ESR 120 Hz 25 °C (Ω)	Max Ripple 120 Hz 85 °C (mA)	Max LC 5 Min. (µA)	Size Diameter D (mm)	Size Length L (mm)	Lead Wire (d)
250 WVdc (300 Vdc Surge)							
1.0	SKA010M250	332.0	13	102.5	6	16	0.6
2.2	SKA2R2M250	151.0	23	105.5	8	16	0.6
3.3	SKA3R3M250	101.0	31	108.3	8	16	0.6
4.7	SKA4R7M250	70.6	37	111.7	8	20	0.6
10	SKA100M250	33.2	67	125.0	10	17	0.6
22	SKA220M250	15.1	118	155.0	10	25	0.6
33	SKA330M250	10.1	161	182.5	13	21	0.6
47	SKA470M250	7.06	211	217.5	13	32	0.6
100	SKA101M250	3.32	419	350.0	16	33	0.8
150	SKA151M250	1.34	764	475.0	18	42	0.8
350 WVdc (400 Vdc Surge)							
0.47	SKAR47M350	881.84	25	101.6	8	16.5	0.6
1.0	SKA010M350	332.00	16	104.0	8	16.0	0.6
2.2	SKA2R2M350	151.00	25	108.0	8	16.0	0.6
3.3	SKA3R3M350	101.00	31	112.0	8	20.0	0.6
4.7	SKA4R7M350	70.60	60	117.0	10	21.0	0.6
10	SKA100M350	33.20	75	135.0	10	21.0	0.6
22	SKA220M350	15.10	177	177.0	13	21.0	0.6
33	SKA330M350	10.10	200	216.0	13	32.0	0.6
47	SKA470M350	7.06	240	365.0	16	33.0	0.6
100	SKA101M350	3.32	350	450.0	18	42.0	0.8
150	SKA151M350	1.34	823	625.0	20	42.0	0.8
400 WVdc (450 Vdc Surge)							
2.2	SKA2R2M400	151	55	108.8	8	20	0.6
3.3	SKA3R3M400	101	70	113.2	10	21	0.6
4.7	SKA4R7M400	70.6	90	118.8	10	26	0.6
10	SKA100M400	33.2	150	140.0	10	26	0.6
22	SKA220M400	15.1	230	188.0	13	25	0.6
33	SKA330M400	10.1	300	232.0	16	28	0.6
47	SKA470M400	7.06	318	288.0	16	33	0.8
100	SKA101M400	3.32	555	500.0	20	42	0.8
450 WVdc (500 Vdc Surge)							
1.0	SKA010M450	332	17	104.5	8	16	0.6
2.2	SKA2R2M450	151	30	109.9	8	20	0.6
3.3	SKA3R3M450	101	39	114.9	10	21	0.6
4.7	SKA4R7M450	70.6	51	121.2	10	26	0.6
10	SKA100M450	33.2	89	145.0	13	22	0.6
15	SKA150M450	25.6	183	167.5	13	27	0.6
22	SKA220M450	15.1	175	199.0	13	30	0.6
33	SKA330M450	10.1	241	248.5	16	30	0.8
47	SKA470M450	7.06	318	311.5	18	40	0.6
68	SKA680M450	5.58	412	406.0	18	40	0.8
100	SKA101M450	3.32	555	550.0	22	43	0.8

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