

+ 85°C Subminiature Aluminum Electrolytic Capacitors

"NEW EXPANDED SELECTION"

For all general purpose applications

FEATURES

- One case size smaller than standard
- Capacitance range: 33 μ F to 15,000 μ F
- Voltage range: 6.3WVDC to 100 WVDC
- Solvent tolerant end seals standard

SPECIFICATIONS

Capacitance Tolerance		$\pm 20\%$ at 120Hz, 25°C							
Operating Temperature Range		-40°C to +85°C							
Dissipation Factor 120Hz, 25°C	WVDC	6.3	10	16	25	35	50	63	100
	$\tan \delta$.3	.28	.22	.2	.14	.12	.10	.10
<p>Note: For above D.F. specifications, add .02 for every 1,000 μF above 1,000 μF</p>									
Impedance Ratio (Max.) @120Hz	WVDC	6.3	10	16	25	35	50	63	100
	-25/20°C	4	3	2	2	2	2	2	2
	-40/20°C	10	8	6	4	3	3	3	3
Leakage Current	WVDC	≤ 50 WVDC							
	Time	1 minute				2 minutes			
		.03 CV or 4 μ A				.01 CV or 3 μ A			
		whichever is greater							
Load Life	2,000 hours at 85°C with rated WVDC								
	Capacitance change Dissipation factor Leakage current	<p>< 20% of initial measured value < 200% of initial specified value < Initial specified value</p>							
Shelf Life	1000 hours at 85°C with no voltage applied. Units will meet load life specifications.								

SPECIAL ORDER OPTIONS

- Special tolerances: $\pm 10\%$ (K), $-10\% + 30\%$ (Q)
- Tape and Reel/Ammo Pack
- Cut, formed, cut and formed, and snap-in leads
- Epoxy end seal
- Polyester sleeve



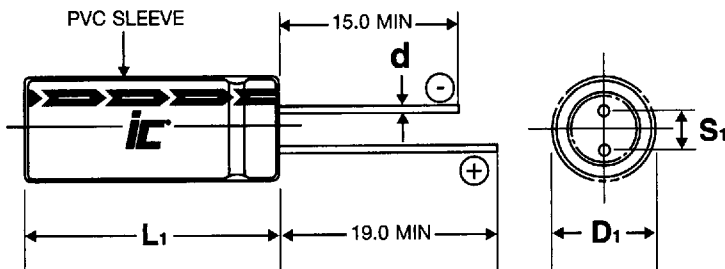
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PHYSICAL DIMENSIONS

WVDC (SV) μF	6.3 (8)	10 (13)	16 (20)	25 (32)	35 (44)	50 (63)	63 (79)	100 (125)
22							5x11	6.3x11
33						5x11	6.3x11	8x11.5
47					5x11	6.3x11	6.3x11	10x12.5
68				5x11		6.3x11		
100			5x11	6.3x11	6.3x11	8x11.5	10x12.5	10x20
150		5x11		6.3x11	8x11.5	10x12.5		
220		5x11	6.3x11	8x11.5	8x11.5	10x12.5	10x16	12.5x25
330		6.3x11	8x11.5	8x11.5	10x12.5	10x16	10x20	12.5x25
470		6.3x11	8x11.5	10x12.5	10x16	10x20	12.5x20	16x25
680		8x11.5	10x12.5	10x16	10x20	12.5x20		
1,000	8x11.5	10x12.5	10x16	10x20	12.5x20	12.5x25	16x25	18x42
1,500		10x16	10x20	12.5x20	12.5x25	16x31.5		
2,200		10x20	12.5x20	12.5x25	16x25	16x35.5		
3,300	10x20	12.5x20	12.5x25	16x25	16x35.5	18x35.5		
4,700		12.5x25	16x25	16x31.5	18x35.5			
6,800	12.5x25	16x25	16x35.5	18x35.5				
10,000	16x25	16x35.5	18x35.5					
15,000	16x35.5	18x35.5						

Convert to inches, divide by 25.4

DxL(mm)



NOTE: Case Vent is standard on all diameter ≥8.0mm

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 ≤ 16, L₁ = L + 1.5 Max.
 L ≥ 16, L₁ = L + 2.0 Max.
 D₁ = D + B mm Max.
 S₁ = S ± 0.5 mm Max.

STANDARD PART LISTING

Capacitance µF	WVDC	IC PART NUMBER	Maximum ESR Ω 120Hz, +25°C	Maximum Leakage Current(µA) @1min, +25°C	Maximum RMS Ripple Current (mA) 120Hz, +85°C
22	63	226CKS063M	7.54	14	95
22	100	226CKS100M	6.03	22	120
33	50	336CKS050M	6.03	17	93
33	63	336CKS063M	5.02	21	130
33	100	336CKS100M	4.02	33	170
47	35	476CKS035M	4.94	16	100
47	50	476CKS050M	4.23	24	125
47	63	476CKS063M	3.53	30	160
47	100	476CKS100M	2.82	47	220
68	25	686CKS025M	4.88	17	103
68	50	686CKS050M	2.93	34	150
100	16	107CKS016M	3.65	16	120
100	25	107CKS025M	3.32	25	140
100	35	107CKS035M	2.32	35	170
100	50	107CKS050M	1.99	50	216
100	63	107CKS063M	1.66	63	290
100	100	107CKS100M	1.33	100	400
150	10	157CKS010M	3.09	15	120
150	25	157CKS025M	2.21	38	180
150	35	157CKS035M	1.55	53	250
150	50	157CKS050M	1.33	75	295
220	10	227CKS010M	2.11	22	155
220	16	227CKS016M	1.66	35	205
220	25	227CKS025M	1.51	55	255
220	35	227CKS035M	1.06	77	300
220	50	227CKS050M	0.90	110	375
220	63	227CKS063M	0.75	139	470
220	100	227CKS100M	0.60	220	710
330	10	337CKS010M	1.41	33	210
330	16	337CKS016M	1.11	53	300
330	25	337CKS025M	1.00	83	300
330	35	337CKS035M	0.70	116	415
330	50	337CKS050M	0.60	165	495
330	63	337CKS063M	0.50	208	650
330	100	337CKS100M	0.40	330	870
470	10	477CKS010M	0.99	47	270
470	16	477CKS016M	0.78	75	400
470	25	477CKS025M	0.71	118	420

Capacitance µF	WVDC	IC PART NUMBER	Maximum ESR Ω 120Hz, +25°C	Maximum Leakage Current(µA) @1min, +25°C	Maximum RMS Ripple Current (mA) 120Hz, +85°C
470	35	477CKS035M	0.49	165	545
470	50	477CKS050M	0.42	235	650
470	63	477CKS063M	0.35	296	850
470	100	477CKS100M	0.28	470	1010
680	10	687CKS010M	0.68	68	365
680	16	687CKS016M	0.54	109	470
680	25	687CKS025M	0.49	170	550
680	35	687CKS035M	0.34	238	735
680	50	687CKS050M	0.29	340	875
1,000	6.3	108CKS6R3M	0.50	63	425
1,000	10	108CKS010M	0.46	100	530
1,000	16	108CKS016M	0.36	160	675
1,000	25	108CKS025M	0.33	250	765
1,000	35	108CKS035M	0.23	350	990
1,000	50	108CKS050M	0.20	500	1150
1,000	63	108CKS063M	0.17	630	1310
1,000	100	108CKS100M	0.13	1000	1500
1,500	10	158CKS010M	0.33	150	720
1,500	16	158CKS016M	0.27	240	800
1,500	25	158CKS025M	0.24	375	960
1,500	35	158CKS035M	0.18	525	1260
1,500	50	158CKS050M	0.15	750	1460
2,200	10	228CKS010M	0.24	220	900
2,200	16	228CKS016M	0.20	352	1085
2,200	25	228CKS025M	0.18	550	1250
2,200	35	228CKS035M	0.14	770	1400
2,200	50	228CKS050M	0.12	1100	1680
3,300	6.3	338CKS6R3M	0.18	208	1000
3,300	10	338CKS010M	0.17	330	1185
3,300	16	338CKS016M	0.14	528	1400
3,300	25	338CKS025M	0.13	825	1500
3,300	35	338CKS035M	0.10	1155	1850
3,300	50	338CKS050M	0.09	1650	1850
4,700	10	478CKS010M	0.13	470	1500
4,700	16	478CKS016M	0.11	752	1540
4,700	25	478CKS025M	0.10	1175	1800
4,700	35	478CKS035M	0.08	1645	2000
6,800	6.3	688CKS6R3M	0.10	428	1625

STANDARD PART LISTING

Capacitance μF	WVDC	IC PART NUMBER	Maximum ESR Ω 120Hz, +25°C	Maximum Leakage Current(μA) @1min, +25°C	Maximum RMS Ripple Current (mA) 120Hz, +85°C
6,800	10	688CKSO10M	0.10	680	1640
6,800	16	688CKSO16M	0.08	1088	2100
6,800	25	688CKSO25M	0.08	1700	1940
10,000	6.3	109CKS6R3M	0.08	630	1780

NOTE 1: WVDC: MAXIMUM RATED DC WORKING VOLTAGE AT + 85°C.
 NOTE 2: SVDC: MAXIMUM RATED DC SURGE VOLTAGE AT + 85°C.
 NOTE 3: DISSIPATION FACTOR (TAN δ) MAXIMUM; 120Hz, + 25°C.
 NOTE 4: ESR: MAXIMUM EQUIVALENT SERIES RESISTANCE; 120Hz, + 25°C
 MINIMUM CAPACITANCE, MAXIMUM DISSIPATION FACTOR.

Capacitance μF	WVDC	IC PART NUMBER	Maximum ESR Ω 120Hz, +25°C	Maximum Leakage Current(μA) @1min, +25°C	Maximum RMS Ripple Current (mA) 120Hz, +85°C
10,000	10	109CKSO10M	0.08	1000	2100
10,000	16	109CKSO16M	0.07	1600	2300
15,000	6.3	159CKS6R3M	0.06	945	2300
15,000	10	159CKSO10M	0.06	1500	2215

NOTE 5: MAXIMUM LEAKAGE CURRENT; RATED WVDC, 2 MINUTE, + 25°C.
 NOTE 6: RMS RIPPLE CURRENT; 120Hz, + 85°C.
 NOTE 7: CAPACITANCE TOLERANCE IS MEASURED AT 120Hz, + 25°C.
 NOTE 8: ALL MEASUREMENTS ARE PERFORMED USING THE BRIDGE
 METHOD.

Ripple Current Multipliers

	Frequency(Hz)						Temperature(°C)			
	50	120	400	1K	10K	100K	+85	+70	+60	+45
C≤10	0.8	1.0	1.3	1.45	1.65	1.7	1.0	1.3	1.5	1.8
10<C≤100	0.8	1.0	1.23	1.36	1.48	1.53	1.0	1.3	1.5	1.8
100<C≤1000	0.8	1.0	1.16	1.25	1.35	1.38	1.0	1.3	1.5	1.8
C>1000	0.8	1.0	1.11	1.17	1.25	1.28	1.0	1.3	1.5	1.8