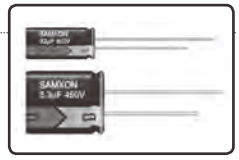
SAMXON®

Aluminum Electrolytic Capacitors

+105˚C, General (普通品)

FEATURES



- Rated working voltage range 6.3 to 100V DC / 160 to 450V DC at operation temperature range -40 to +105˚C / -25 to +105˚C.
- This series is for communication equipments, switching power supply, industrial measuring instruments, automotive electric products, etc.

SPECIFICATIONS

Item	Performance Characteristics
Operating Temperature Range	-40 to +105˚C / -25 to +105˚C
Rated Working Voltage Range	6.3 to 100V / 160 to 450V
Nominal Capacitance Range	0.47 to 33000μF
Capacitance Tolerance	±20% at 120Hz, +20˚C
Leakage Current	I ≤0.01CV or 3 (μA) whichever is greater measured after 2 minutes application of rated working voltage at +20˚C / I ≤0.03CV +40 (μA) after 2 minutes application of rated working voltage at +20˚C

tan δ (120Hz, +20˚C)

Working Voltage (V)	6.3	10	16	25	35	50	63	100
tan δ (max.)	0.26	0.22	0.18	0.16	0.14	0.12	0.10	0.08
Working Voltage (V)	160	200	220	250	350	400	420	450
tan δ (max.)	0.20	0.20	0.20	0.20	0.24	0.24	0.24	0.24

For capacitance value >1000μF, add 0.02 per another 1000μF

Low Temperature Characteristics

Impedance ratio max. at 120Hz

Working Voltage (V)	6.3	10	16	25	35	50	63	100
Z-25˚C / Z+20˚C	5	4	3	2	2	2	2	2
Z-40˚C / Z+20˚C	10	8	6	4	3	3	3	3
Working Voltage (V)	160	200	220	250	350	400	420	450
Z-25˚C / Z+20˚C	3	3	3	4	4	6	6	15

For capacitance value >1000μF, add 0.5 per another 1000μF for Z-25˚C / Z+20˚C
add 1.0 per another 1000μF for Z-40˚C / Z+20˚C

High Temperature Loading

Test time : 2,000 hours
Test temperature : +105˚C
Test conditions : Rated DC working voltage with rated ripple current.

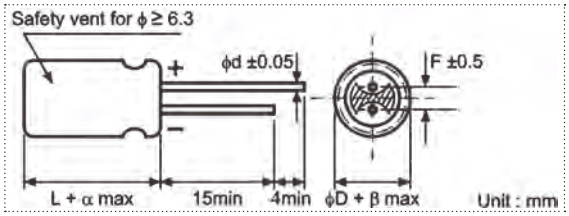
Post test requirements at +20˚C
Leakage current : ≤Initial specified value
Cap. change : within ±20% of the initial measured value
tan δ : ≤200% of the initial specified value

Shelf Life

At +105˚C no voltage applied after 1,000 hours and then being stabilized at +20˚C the capacitors shall meet the following limits
Leakage current : ≤Initial specified value
Cap. change : within ±20% of the initial measured value
tan δ : ≤200% of the initial specified value

Industrial Standard	JIS C - 5101-4 (IEC 60384-4)

CASE SIZE TABLE



ΦD	5	6.3	8 (L <20)	8 (L ≥20)	10	12.5	16	18	22	25
F	2.0	2.5	3.5	3.5	5.0	5.0	7.5	7.5	10.0	12.5
Φd	0.5	0.5	0.5	0.6	0.6	0.6	0.8	0.8	0.8	1.0
α	(L <20) 1.5						(L ≥20) 2.0			
β	(D <20) 0.5						(D ≥20) 1.0			

PART NUMBER SYSTEM (EXAMPLE : 25V 330μF)

1	2 3	4 5 6	7	8 9	10	11 12	13 14
E	KM	337	M	1E	F	12	RR

- RR — Type (Radial Bulk)
- 12 — Case Length (12mm)
- F — Diameter (8mm)
- 1E — Voltage (25V)
- M — Tolerance (±20%)
- 337 — Capacitance (330μF)
- KM — Series
- E — E-CAP

STANDARD RATINGS

Voltage (Code)		6.3V (0J)		10V (1A)		16V (1C)		25V (1E)	
Cap. (μF)	Code	Case Size	Ripple Current	Case Size	Ripple Current	Case Size	Ripple Current	Case Size	Ripple Current
4.7	475							5 x 11	26
10	106					5 x 11	35	5 x 11	38
22	226			5 x 11	49	5 x 11	54	5 x 11	57
33	336	5 x 11	54	5 x 11	60	5 x 11	64	5 x 11	75
47	476	5 x 11	65	5 x 11	70	5 x 11	80	5 x 11	84
68	686	5 x 11	70	5 x 11	75	5 x 11	90	5 x 11	92
100	107	5 x 11	95	5 x 11	105	5 x 11	125	5 x 11	140
						6.3 x 11	142	6.3 x 11	159
220	227	5 x 11	153	5 x 11	170	6.3 x 11	213	8 x 12	285
				6.3 x 11	193				
330	337	6.3 x 11	216	6.3 x 11	239	8 x 12	315	8 x 12	340
470	477	6.3 x 11	258	6.3 x 11	285	8 x 12	366	8 x 12	406
								10 x 12.5	471
680	687	8 x 12	365	8 x 12	408	10 x 12.5	480	10 x 16	620
1000	108	8 x 12	443	10 x 12.5	571	8 x 20	663	10 x 20	821
						10 x 16	680		
2200	228	10 x 16	740	10 x 20	886	12.5 x 20	1108	12.5 x 20	1176
								12.5 x 25	1296
3300	338	10 x 20	1032	12.5 x 20	1205	12.5 x 25	1389	16 x 25	1646
4700	478	12.5 x 20	1280	12.5 x 25	1492	16 x 25	1740	16 x 30	2012
6800	688	12.5 x 25	1554	16 x 25	1824	16 x 30	2081	16 x 35	2308
10000	109	16 x 25	1897	16 x 30	1980	16 x 35	2379	18 x 35	2500
15000	159	16 x 30	2188	16 x 40	2180	18 x 35	2600		
22000	229	18 x 35	2400	18 x 40	2407				
33000	339	18 x 40	2555						

Maximum Allowable Ripple Current (mArms) at 105˚C 120Hz

Case Size ΦD x L (mm)

Voltage (Code)		35V (1V)		50V (1H)		63V (1J)		100V (2A)	
Cap. (μF)	Code	Case Size	Ripple Current	Case Size	Ripple Current	Case Size	Ripple Current	Case Size	Ripple Current
1	105			5 x 11	13			5 x 11	16
2.2	225			5 x 11	20			5 x 11	23
3.3	335			5 x 11	30			5 x 11	34
4.7	475	5 x 11	28	5 x 11	37	5 x 11	40	5 x 11	40
10	106	5 x 11	41	5 x 11	54	5 x 11	59	6.3 x 11	61
22	226	5 x 11	67	5 x 11	79	5 x 11	79	6.3 x 11	92
33	336	5 x 11	80	5 x 11	101	6.3 x 11	122	8 x 12	144
47	476	5 x 11	101	6.3 x 11	133	6.3 x 11	146	10 x 12.5	199
68	686	6.3 x 11	138	6.3 x 11	160	8 x 12	155	10 x 16	240
100	107	6.3 x 11	168	8 x 12	229	10 x 12.5	251	10 x 20	349
220	227	8 x 12	294	10 x 16	509	10 x 20	504	12.5 x 25	662
330	337	10 x 12.5	419	10 x 16	589	12.5 x 20	688	12.5 x 25	800
470	477	10 x 16	547	10 x 20	707	12.5 x 20	810	16 x 25	990
680	687	10 x 20	682	12.5 x 20	923	12.5 x 25	1160	16 x 30	1289
1000	108	12.5 x 20	1023	12.5 x 25	1287	16 x 25	1448	18 x 35	1903
				16 x 25	1478			18 x 40	2020
2200	228	16 x 25	1497	16 x 30	1759	18 x 35	1781		
				16 x 35	1884				
3300	338	16 x 30	1808	18 x 35	2167				
4700	478	18 x 35	2335						
6800	688	18 x 40	2400						

Maximum Allowable Ripple Current (mArms) at 105˚C 120Hz

Case Size ΦD x L (mm)

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Aluminum Electrolytic Capacitors

+105˚C, General (普通品)

STANDARD RATINGS

Voltage (Code)		160V (2C)		200V (2D)		220V (2N)		250V (2E)	
Cap. (μF)	Code	Case Size	Ripple Current	Case Size	Ripple Current	Case Size	Ripple Current	Case Size	Ripple Current
0.47	474							6.3 x 11	8
1	105							6.3 x 11	17
2.2	225							6.3 x 11	27
3.3	335			6.3 x 11	30	6.3 x 11	30	6.3 x 11	35
4.7	475	6.3 x 11	41	6.3 x 11	40	8 x 12	40	8 x 12	45
10	106	8 x 12	60	10 x 12.5	72	10 x 12.5	70	10 x 12.5	75
				10 x 16	79				
22	226	10 x 16	110	10 x 16	113	10 x 20	125	10 x 20	130
33	336	10 x 20	156	10 x 20	165	12.5 x 20	165	12.5 x 20	184
47	476	10 x 20	195	10 x 20	194	12.5 x 20	220	12.5 x 25	238
68	686	12.5 x 20	250	12.5 x 20	226	12.5 x 25	245	16 x 20	246
				12.5 x 25	250				
82	826	12.5 x 25	310	10 x 30	320	12.5 x 30	280	16 x 25	351
100	107	12.5 x 25	360	16 x 25	386	16 x 25	335	16 x 25	390
								16 x 30	422
150	157	12.5 x 30	380	16 x 25	525	16 x 30	365	18 x 30	440
180	187	12.5 x 35	420	12.5 x 35	560	16 x 35	500	18 x 35	469
220	227	16 x 30	680	16 x 30	643	16 x 40	615	18 x 35	485
				18 x 25	635				
270	277	16 x 30	728	18 x 30	740				
330	337	18 x 35	830	18 x 30	808				
				18 x 35	864				
390	397	18 x 35	850	18 x 35	904	18 x 40	959		
470	477	18 x 40	880	18 x 40	1016				
560	567	18 x 45	925	18 x 45	1112				

Maximum Allowable Ripple Current (mArms) at 105˚C 120Hz

Case Size ΦD x L (mm)

STANDARD RATINGS

Voltage (Code)		350V (2V)		400V (2G)		420V (2M)		450V (2W)	
Cap. (μF)	Code	Case Size	Ripple Current	Case Size	Ripple Current	Case Size	Ripple Current	Case Size	Ripple Current
0.47	474	6.3 x 11	8	6.3 x 11	8	6.3 x 11	8		
1	105	6.3 x 11	18	6.3 x 11	19	6.3 x 11	15	6.3 x 11	16
2.2	225	6.3 x 11	25	6.3 x 11	25	8 x 12	29	8 x 12	24
				8 x 12	30				
3.3	335	8 x 12	40	8 x 12	35	8 x 12	35	8 x 12	29
4.7	475	8 x 12	43	8 x 12	40	10 x 12.5	46	10 x 12.5	37
				10 x 12.5	46	10 x 16	52	10 x 16	42
10	106	10 x 16	73	8 x 16	68	10 x 16	77	10 x 20	74
				10 x 12.5	70				
				10 x 16	78	10 x 20	85	12.5 x 20	84
18	186	12.5 x 20	100	12.5 x 20	105	12.5 x 25	124	10 x 30	108
22	226	12.5 x 20	150	12.5 x 20	148	12.5 x 20	126	12.5 x 20	118
				12.5 x 25	163	12.5 x 25	140	12.5 x 25	131
27	276	12.5 x 25	177	10 x 30	192	12.5 x 25	170	12.5 x 30	164
				12.5 x 20	181				
33	336	16 x 25	200	12.5 x 20	175	16 x 25	200	16 x 20	215
				12.5 x 25	193			16 x 25	237
39	396	16 x 25	258	16 x 25	251	12.5 x 30	248	12.5 x 35	256
47	476	16 x 25	265	12.5 x 25	245	12.5 x 35	288	16 x 25	281
				12.5 x 30	266	18 x 20	277	16 x 30	305
				16 x 20	256				
56	566	16 x 30	280	12.5 x 30	313	12.5 x 40	344	16 x 30	352
				12.5 x 35	336				
68	686	16 x 30	288	16 x 25	365	16 x 30	408	16 x 30	342
				16 x 30	396			18 x 30	366
				18 x 20	356				
82	826	18 x 30	372	16 x 30	414	16 x 35	456	18 x 30	440
				18 x 25	409	18 x 25	420		
				18 x 30	443				
100	107	18 x 35	460	16 x 30	457	18 x 35	488	16 x 35	459
				18 x 25	452			18 x 30	457
				18 x 30	489			18 x 35	490
120	127			16 x 40	567	18 x 30	464	18 x 40	592
				18 x 30	532	18 x 40	528		
				18 x 35	570				
150	157			16 x 40	577	18 x 35	507	18 x 40	606
				18 x 35	580	18 x 45	568	18 x 45	640
				18 x 40	616				
180	187			18 x 40	636	18 x 40	573		
				18 x 50	704	18 x 45	622		

Maximum Allowable Ripple Current (mArms) at 105°C 120Hz

Case Size ΦD x L (mm)

RIPPLE CURRENT MULTIPLIER

Frequency Coefficient

Rated Voltage	Coefficient / Freq. (Hz) / Cap (μF)	50	120	300	1k	10k~
6.3~100V	≤47	0.75	1.00	1.35	1.57	2.00
	68~470	0.80	1.00	1.23	1.34	1.50
	≥560	0.85	1.00	1.10	1.13	1.15
160~450V	0.47~220	0.80	1.00	1.25	1.40	1.60
	≥270	0.90	1.00	1.10	1.13	1.15

Part Number System (產品編碼)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
E	G	S	1	0	5	M	1	H	D	1	1	T	C	S	A	P

SERIES · CAPACITANCE · TOLERANCE · VOLTAGE · CASE SIZE · TYPE · SAMXON PRODUCT LINE · SLEEVE MATERIAL

Series
EKF
EKS
EGS
EKM
EKG
EOM
EGF
ESF
EGT
EGK
ESK
ESH
ESK
ERS
EGY
ERF
ERR
ERT
ERE
ERD
ERH
EBD
ERA
ERB
ERC
EFA
ENP
ENH
ERW
ERY
ELP
EAP
EQP
EDP
ETP
EHP
EUP
EKP
EPK
EEP
EFP
ESP
EVP
EGP
EWR
EWI
EWT
EWX
EWF
EWH
EWL
EWB
VSS
VKS
VKM
VRL
VZS
VRF

Cap (uF)	Code
0.1	104
0.22	224
0.33	334
0.47	474
1	105
2.2	225
3.3	335
4.7	475
10	106
22	226
33	336
47	476
100	107
220	227
330	337
470	477
2200	228
22000	229
33000	339
47000	479
100000	10T
150000	15T
220000	22T
330000	33T
1000000	10M
1500000	15M
2200000	22M
3300000	33M

Tol. (%)	Code
±5	J
±10	K
±15	L
±20	M
±30	N
-40 0	W
-20 0	A
-20 +10	C
-20 +40	X
-20 +50	S
-10 0	B
-10 +20	V
-10 +30	Q
-10 +50	T
+13 +50	E
-5 +15	F
-5 +20	G
0 +20	R
0 +30	O
0 +50	I
+5 +15	Z
+5 +20	D
+10 +50	H

Vol. (W.V.)	Code
2	0D
2.5	0E
4	0G
6.3	0J
8	0K
10	1A
12.5	1B
16	1C
20	1D
25	1E
30	1I
32	13
35	1V
40	1G
42	1M
50	1H
57	1L
63	1J
71	1S
75	1T
80	1K
85	1R
90	19
100	2A
120	2O
125	2B
150	2Z
160	2C
180	2P
200	2D
215	22
220	2N
230	23
250	2E
275	2T
300	2I
310	2R
315	2F
330	2U
350	2V
360	2X
375	2Q
385	2Y
400	2G
420	2M
450	2W
500	2H
550	25
600	26
630	2J

Case Size	
Diameter(Φ)	Code
3	B
3.5	1
4	C
5	D
6.3	E
8	F
10	G
12.5	I
13	J
13.5	V
14	4
14.5	A
16	K
16.5	7
18	L
18.5	8
20	M
22	N
25	O
30	P
34	W
35	Q
40	R
42	4
45	6
51	S
63.5	T
76	U
80	8
90	X
100	Z
Len. (mm)	Code
4.5	45
5	05
5.4	54
7	07
7.7	77
10.2	T2
11	11
11.5	1A
12	12
12.5	1B
13	13
13.5	1C
20	20
25	25
29.5	2J
30	30
31.5	3A
35	35
35.5	3E
50	50
80	80
100	1L
105	1K
110	1M
120	1N
130	1P
140	1Q
150	1R
155	1E
160	1S
165	1F
170	1T
180	1U
190	1V
200	2L
215	2A
210	2M
220	2N
240	2Q
250	2R
260	2S
270	2T

Feature	Code
Radial bulk	RR
Ammo Taping	
2.0mm Pitch	TT
2.5mm Pitch	TU
3.5mm Pitch	TV
5.0mm Pitch	TC
Lead Cut & Form	
CB-Type	CB
CE-Type	CE
HE-Type	HE
KD-Type	KD
FD-Type	FD
EH-Type	EH
PCB Terminal	
Snap-in	SW
	SX
	SZ
Lug	SG
Screw	O5
	O6
	T5
	T6
	D5
	D6

SAMXON Product Line
For internal use only (The product lines we have H,A,B,C,D,E,M or 0,1,2,3,4,5,9).

Sleeve Material	Code
PET	P
PVC	If the sleeve material is PVC, there will be blank in seventeenth digit.