K50-98

ALUMINUM ELECTROLYTIC CAPACITOR

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EVAYA.673541.055 TU

Small-sized capacitors. In comparable denominations, they provide import substitution of foreign high-voltage small-sized aluminum capacitors with self-locking terminals.

Polar, sealed, isolated radial leaded and snap-in capacitors. Capacitors are suitable for application in direct current, ripple current and pulse current circuits in secondary power supplies and converter equipment. Capacitors are available in all-climate and temperate/cold climate version.

MAIN PARAMETERS

Name	Value
Rated voltage, V	16...450
Rated capacitance, µF	47...47 000
Capacitance tolerance (25°C, 50 Hz), %	+50...-20; ±20
Maximum operating temperature Tenv, °C	+125
Minimal operating temperature Tenv, °C	-60

CAPACITORS RELIABILITY

Operating conditions	Minimal nonfailure operating time, t_λ, hours	Capacitor failure rate, λ, 1/hour, max
Maximum-permissible mode (U_R, Tenv=125°C)	2 000	$1x10^{-4}$
Maximum-permissible mode (U_R, Tenv=105°C)	5 000	$5x10^{-5}$
Maximum-permissible mode (U_R, Tenv=100°C)	6 200	$5x10^{-5}$
Typical operating mode ($0.7U_R$, Tenv=85°C)	30 000	$5x10^{-4}$
Typical operating mode ($0.7U_R$, Tenv=55°C)	250 000	$5x10^{-5}$
Storageability Gamma-rated time of capacitor storageability Tcy at y=95%, years, min	20	

CAPASITOR PHYSICAL CONFIGURATION

Fig. 1

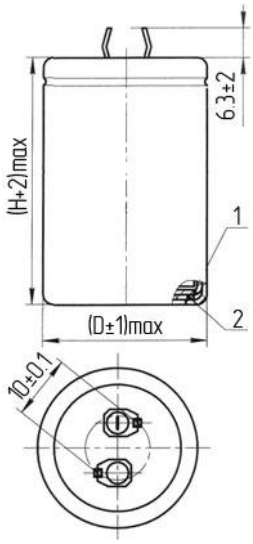

Fig. 2
(also see fig. 1)

1 – Isolation sleeve
2 – Insulation strip
3 – Enamel coating

CAPACITOR ELECTRIC PARAMETERS VALUE WHEN DELIVERED

U_R, V	C_R, µF	tg δ, %	I_{LEAK}, µA	Z*, Ohm, 25°C	ESR, Ohm, 25°C, 100Hz	I_R, A, 100°C, 50 Hz	I_R, A, 125°C, 50 Hz
16	4 700	20	230	0.035	0.045	2.74	1.6
16	6 800	22	330	0.028	0.035	3.25	1.9
16	10 000	28	480	0.025	0.03	3.93	2.3
16	15 000	38	720	0.019	0.027	4.62	2.7
16	22 000	41	1 100	0.017	0.02	5.99	3.5
16	33 000	50	1 600	0.014	0.016	7.35	4.3
16	47 000	62	2 200	0.012	0.014	8.55	5
25	3 300	16	250	0.038	0.05	2.57	1.5
25	4 700	19	350	0.031	0.043	3.25	1.9
25	6 800	19	510	0.02	0.03	4.45	2.6
25	10 000	28	750	0.19	0.03	4.62	2.7
25	15 000	31	1 100	0.017	0.022	5.64	3.3
25	22 000	41	1 700	0.016	0.02	7.18	4.2
25	33 000	56	2 400	0.014	0.018	7.52	4.4
40	2 200	12	260	0.045	0.06	2.57	1.5
40	3 300	13	400	0.032	0.042	3.25	1.9
40	4 700	15	560	0.024	0.033	4.28	2.5
40	6 800	19	820	0.021	0.03	4.62	2.7

U_R, V	C_R, µF	tg δ, %	I_{LEAK}, µA	Z*, Ohm, 25°C	ESR, Ohm, 25°C, 100Hz	I_R, A, 100°C, 50 Hz	I_R, A, 125°C, 50 Hz
40	10 000	26	1 200	0.019	0.028	5.47	3.2
40	15 000	31	1 800	0.016	0.022	6.84	4
40	22 000	41	2 600	0.014	0.02	7.18	4.2
50	1 500	10	230	0.06	0.07	2.22	1.3
50	2 200	9	330	0.038	0.045	3.25	1.9
50	3 300	10	500	0.027	0.032	4.28	2.5
50	4 700	13	710	0.022	0.03	4.62	2.7
50	6 800	17	1 000	0.021	0.027	5.13	3
50	10 000	21	1 500	0.017	0.022	6.84	4
50	15 000	28	2 300	0.014	0.02	7.18	4.2
50	22 000	35	3 200	0.012	0.018	7.35	4.3
63	1 000	7	190	0.046	0.06	2.57	1.5
63	1 500	8	280	0.043	0.05	2.91	1.7
63	2 200	8	420	0.03	0.035	4.1	2.4
63	3 300	9	620	0.022	0.03	5.3	3.1
63	4 700	12	890	0.02	0.028	5.47	3.2
63	6 800	16	1 300	0.019	0.025	6.33	3.7
63	10 000	22	1 900	0.018	0.023	6.67	3.9
63	15 000	29	2 500	0.017	0.021	6.84	4
100	470	8	140	0.13	0.19	1.37	0.8
100	560	10	190	0.125	0.18	1.54	0.9
100	680	10	200	0.1	0.15	1.71	1
100	1 000	10	300	0.07	0.1	2.39	1.4
100	1 500	10	450	0.054	0.07	2.91	1.7
100	2 200	12	660	0.046	0.06	3.36	2.2
100	3 300	17	1 000	0.042	0.055	4.28	2.5
100	4 700	22	1 400	0.038	0.05	4.45	2.6
160	220	25	294	0.9	1	0.41	0.24
160	330	25	448	0.58	0.6	0.56	0.33
160	470	25	630	0.49	0.5	0.77	0.45
160	560	25	773	0.38	0.4	0.82	0.48
160	680	25	924	0.29	0.3	0.97	0.57
160	1 000	25	1 344	0.19	0.2	1.28	0.75
160	1 500	25	1 960	0.158	0.16	1.64	0.96
160	2 200	25	2 940	0.119	0.12	2.05	1.2

U_R, V	C_R, µF	tg δ, %	I_{LEAK}, µA	Z*, Ohm, 25°C	ESR, Ohm, 25°C, 100Hz	I_R, A, 100°C, 50 Hz	I_R, A, 125°C, 50 Hz
200	150	25	252	1.4	1.5	0.36	0.21
200	220	25	364	1.18	1.2	0.51	0.3
200	330	25	546	0.9	1	0.77	0.45
200	470	25	784	0.75	0.8	1.03	0.6
200	560	25	938	0.58	0.6	0.97	0.57
200	680	25	1 134	0.58	0.6	1.08	0.63
200	1 000	25	1 680	0.48	0.5	1.28	0.75
200	1 500	25	2 520	0.28	0.3	1.74	1.02
200	2 200	25	3 640	0.18	0.2	2.15	1.26
250	150	20	308	1.4	1.5	0.36	0.21
250	220	20	462	1.18	1.2	0.51	0.3
250	330	20	700	0.9	1	0.77	0.45
250	470	20	980	0.75	0.8	0.97	0.57
250	560	20	1 162	0.58	0.6	1.44	0.84
250	680	20	1 400	0.48	0.5	1.18	0.69
250	1 000	20	2 100	0.38	0.4	1.54	0.9
250	1 500	20	3 220	0.29	0.3	1.9	1.11
400	68	20	910	2.18	2.2	0.41	0.24
400	100	20	1 120	1.6	1.8	0.46	0.27
400	150	20	1 400	1.4	1.5	0.56	0.33
400	220	20	1 680	1.18	1.2	0.67	0.39
400	330	20	2 100	0.9	1	0.87	0.51
400	470	20	2 520	0.75	0.8	1.18	0.69
400	560	20	2 660	0.58	0.6	1.44	0.84
450	47	20	840	2.45	2.5	0.36	0.21
450	68	20	980	2.18	2.2	0.41	0.24
450	100	20	1 120	1.6	1.8	0.51	0.3
450	150	20	1 400	1.4	1.5	0.62	0.36
450	220	20	1 750	1.18	1.2	0.77	0.45
450	330	20	2 100	0.9	1	1.03	0.6
450	470	20	2 520	0.75	0.8	1.28	0.75

*Capacitor impedance Z is measured at frequency 100 kHz for capacitors $C_R \leq 1\,000$ µF, and at frequency 10 kHz for capacitors $C_R > 1\,000$ µF

CAPACITORS OVERALL DIMENSIONS AND MASS

U_R, V	16	25	40	50	63	100	160	200	250	400	450
C_R, µF	DxH, mm mass, g										
47											22x30 84
68										22x30 84	22x30 84
100										22x30 84	22x40 98
150								22x25 70	22x25 70	22x40 98	25x40 146
220							22x25 70	22x30 84	22x30 84	25x40 146	30x40 210
330							22x30 84	25x30 108	25x30 108	30x40 210	35x40 284
470						22x30 84	25x30 108	25x40 146	30x30 158	35x40 284	35x50 356
560						22x40 98	25x35 127	30x30 158	30x35 184	35x50 356	
680						25x30 108	25x40 146	35x30 212	30x40 210		
1 000					22x30 84	25x40 146	30x35 184	35x35 248	35x40 284		
1 500				22x25 70	25x30 108	30x35 184	35x40 284	35x40 284	35x50 356		
2 200			22x30 84	25x30 108	25x40 146	35x40 284	35x50 356	35x50 356			
3 300		22x25 70	25x30 108	25x40 146	35x40 284	35x50 356					
4 700	22x25 70	25x30 108	25x40 146	30x35 184	35x40 284	35x50 356					
6 800	22x30 84	25x40 146	30x35 184	30x40 210	35x50 356						
10 000	25x30 108	30x35 184	35x40 284	35x50 356	35x50 356						
15 000	25x40 146	30x40 210	35x50 356	35x50 356	35x60 428						
22 000	30x40 210	35x50 356	35x50 356	35x60 428							
33 000	35x40 284	35x50 356									
47 000	35x50 356										

Ripple current effective value versus temperature and frequency can be found from the formula $I_{RIPPLE, A} = I_{R(50Hz, 125°C)} \times K_{RT} \times K_{RF}$

K_{RT} - I_R CORRECTION FACTOR VERSUS TEMPERATURE

Tenv, °C	25	40	50	60	70	85	100	105	125
K_{RT}	2.55	2.45	2.4	2.3	2.15	1.9	1.71	1.67	1

K_{RF} - I_R CORRECTION FACTOR VERSUS FREQUENCY

F, Hz	50	100	300	600	1 000	10 000	⩾50 000
K_{RF}	1	2	2.3	2.4	2.45	2.57	2.69

CODED SYMBOL FOR CAPACITORS (IDENTIFICATION NUMBER (PARTNUMBER))

CAPACITOR K50-98 – 16V – 4700MF (±20)% – I – EVAYA.673541.055TU
(K50-98-E-478M-D22H25-PET-055-UHL)

1	2	3	4	5	6	7	8	9
Capacitor K50-98	16V	4700µF	±20%	D=22mm	H=25mm	PET	EVAYA.673541.055TU	UHL
K50-98	E	478	M	D22	H25	PET	055	UHL

1. K50-98 – capacitor K50-98

2. Rated voltage code

Code	E	G	S	J	K	N	Q	Z	W	Y	U
U_R, V	16	25	40	50	63	100	160	200	250	400	450

3. Nominal capacity code

Code	476	686	107	157	227	337	447	567	687	108
C_R, µF	47	68	100	150	220	330	470	560	680	1000

Code	158	228	338	478	688	109	159	229	339	479
C_R, µF	1500	2200	3300	4700	6800	10000	15000	22000	33000	47000

4. Capacity approval code

Code	M	S
Admittance, %	±20	+50; –20

5. Condenser diameter code

Code	D22	D25	D30	D35
Diameter, mm	22	25	30	35

6. Capacitor height code

Code	H25	H30	H35	H40	H50	H60
Height, mm	25	30	35	40	50	60

7. Isolation Code

Code	Decryption
PET	Isolated, packed in a box for manual assembly of equipment

8. Code TU

Code	TU designation
055	EVAYA.673541.055 TU

9. Climatic modification code

Code	Decryption
B	Capacitors are designed for indoor installation with requirements for resistance to high air humidity of 98% at temperature 35°C (all-climatic version B)
UHL	Capacitors are designed for indoor installation with requirements for resistance to high air humidity of 98% at temperature of 25°C (climatic version UHL)

EXAMPLE OF REFERENCE DESIGNATION FOR ORDERING

CAPACITOR K50-98 – 16V – 4 700μF (+50 -20)% – I EVAYA.673541.055 TU
CAPACITOR K50-98 – 16V – 4 700μF (+50 -20)% – I – V EVAYA.673541.055 TU