K50-87

ALUMINUM ELECTROLYTIC CAPACITOR

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AZHYAR.673541.015 TY

Capacitors with axial wire leads and longitudinal crimping of the housing. Differ in the increased operating time. Capacitors are suitable for application in direct current and ripple current circuits, secondary power supplies and other electronics.

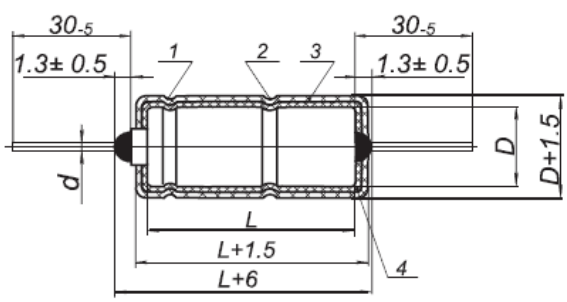
Capacitor is available in all-climate version. Isolated. Sealed.

MAIN PARAMETERS

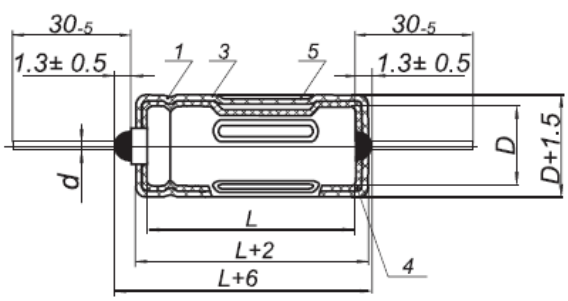
Name	Value
Rated voltage, V	6.3...450
Rated capacitance, µF	1...15 000
Temporary overvoltage within 10 sec., V	1.15 U_R ($U_R \leq 315$) 1.1 U_R ($U_R > 315$)
Capacitance tolerance (25 °C, 50 Hz), %	+50...-20; ±20
Maximum operating temperature Tenv, °C	+125
Minimal operating temperature Tenv, °C	-60

CAPASITOR PHYSICAL CONFIGURATION

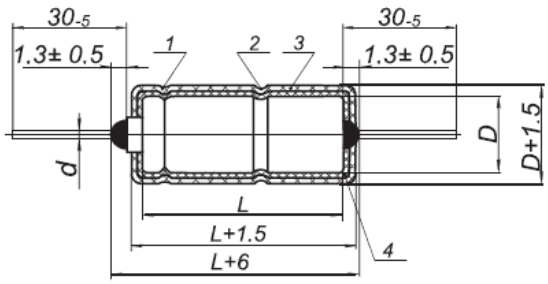
Physical configuration of a capacitor with ø 9 mm



Physical configuration of a capacitor with ø 21 and 25 mm



Physical configuration of a capacitor
with ø 12,16,18 mm



1 – Bead
2 – Diametrical swage
3 – Isolation sleeve
4 – Lacquer coating
5 – Lengthwise swage

D, mm	d, mm
9, 12, 16	0.8±0.1
18, 21, 25	1.0±0.1

CAPACITORS RELIABILITY

Reliability Operation modes	Minimal nonfailure operating time, t_λ, hours	Capacitor failure rate, λ, 1/hour, max
Maximum-permissible mode (0.7U_R, Tenv=125 °C)	6 000	$2x10^{-6}$
Maximum-permissible mode (U_R, Tenv=85 °C)	40 000	$5x10^{-7}$
Light mode (0.6U_R, Tenv=60 °C)	300 000	$3x10^{-8}$
Light mode (0.6U_R, Tenv=85 °C)	110 000	10^{-7}
Storageability Gamma-rated time of capacitor storageability Tcy at y=99.5%, years, min	25	

CAPACITORS OVERALL DIMENSIONS AND MASSPOB

U_R, V	6.3	16	25	40	63	100	160	250	315	350	400	450
C_R, µF	DxL, mm mass, g											
1							9x22 3.3					
2.2						9x22 3.3	9x22 3.3					
4.7						9x26 3.9	9x26 3.9					
10					9x26 3.9	9x26 3.9	9x40 4.4	12x30 7.7	12x35 9.0	18x30 16.9	18x30 16.9	18x30 16.9
22			9x22 3.3	9x26 3.9	9x26 3.9	9x30 4.4	12x35 9.0	16x35 15.7	16x35 15.7	18x40 22.3	18x40 22.3	18x40 22.3
33		9x22 3.3										21x40 30.2
47	9x22 3.3	9x26 3.9	9x26 3.9	9x30 4.4	9x35 5.2	12x30 7.7	16x35 15.7	21x45 33.8	21x45 33.8	21x50 37.3	21x50 37.3	21x50 37.3
100	9x22 3.3	9x26 3.9	9x30 4.4	9x35 5.2	12x35 9.0	16x35 15.7	21x40 30.2	25x50 52.4	25x50 52.4	25x50 37.3	21x55 41.2	21x55 41.2
220	9x26 3.9	9x30 4.4	9x40 5.9	12x35 9.0	16x35 15.7	18x40 22.3	25x50 52.4	25x75 77.8				

U_R, V	6.3	16	25	40	63	100	160	250	315	350	400	450
330	9x30 4.4	9x40 5.9	12x30 7.7	12x45 11.4	18x40 22.3	21x40 30.2	25x75 77.8					
470	9x40 5.9	12x30 7.7	12x40 10.3	16x35 15.7	21x40 30.2	21x55 41.2	25x75 77.8					
1 000	12x35 9.0	12x45 11.4	18x30 16.9	18x40 22.3	25x50 52.4							
2 200	16x35 15.7	18x40 22.3	21x40 30.2	21x55 52.4								
4 700	18x40 22.3	21x55 41.2	25x50 52.4	25x75 77.8								
10 000	21x50 37.3	25x75 77.8										
15 000	25x50 52.4											

CAPACITOR ELECTRIC PARAMETERS VALUE WHEN DELIVERED

U_R, V	C_R, µF	tg δ, %, 25°C, 50 Hz, max	I_{LEAK}, µA, 25°C, after 5 min., max	Z*, Ohm, 25°C, max	I_R, A, 85°C, 50 Hz, max
6.3	47	25	29	4.6	0.007
	100		39	3.2	0.012
	220		62	2.2	0.023
	330		82	1.6	0.032
	470		109	1.0	0.043
	1 000		209	0.6	0.08
	2 200		436	0.5	0.155
	4 700		908	0.35	0.286
	10 000		1 910	0.3	0.53
	15 000		2 855	0.2	0.734
16	33	25	36	5	0.012
	47		43	4	0.016
	100		68	2.2	0.029
	220		126	1.2	0.057
	330		178	1.0	0.08
	470		246	0.8	0.107
	1 000		500	0.4	0.201
	2 200		1 076	0.3	0.394
	4 700		2 276	0.2	0.743
	10 000		4 820	0.1	0.415

U_R, V	C_R, µF	tg δ, %, 25°C, 50 Hz, max	I_{LEAK}, µA, 25°C, after 5 min., max	Z*, Ohm, 25°C, max	I_R, A, 85°C, 50 Hz, max
25	22	25	37	4.5	0.012
	47		55	3	0.023
	100		95	1.9	0.044
	220		185	1.2	0.086
	330		268	1.0	0.121
	470		373	0.9	0.165
	1 000		770	0.6	0.304
	2 200		1 670	0.2	0.566
	4 700		3 545	0.15	1.04
40	22	25	46	4.3	0.018
	47		76	2.6	0.033
	100		140	1.5	0.063
	220		284	1.0	0.122
	330		416	0.8	0.171
	470		584	0.6	0.231
	1 000		1 220	0.4	0.436
	2 200		2 660	0.2	0.837
	4 700		5 660	0.15	1.575
63	10	25	39	2.5	0.014
	22		62	2.4	0.026
	47		109	2.2	0.049
	100		209	1.9	0.092
	220		436	1.8	0.176
	330		644	1.5	0.249
	470		908	1.3	0.336
	1 000		1 910	1.2	0.63
100	2.2	25	27	12	0.005
	4.7		34	5.4	0.010
	10		50	4.8	0.018
	22		86	3.0	0.035
	47		161	1.8	0.067
	100		320	1.1	0.127
	220		680	0.6	0.249
	330		1 100	0.5	0.35
	470		1 430	0.4	0.471

U_R, V	C_R, µF	tg δ, %, 25°C, 50 Hz, max	I_{LEAK}, µA, 25°C, after 5 min., max	Z*, Ohm, 25°C, max	I_R, A, 85°C, 50 Hz, max
160	1	25	25	24	0.004
	2.2		31	15	0.008
	4.7		43	9.8	0.015
	10		68	6	0.029
	22		126	3.8	0.056
	47		246	2.4	0.107
	100		500	1.5	0.2
	220		1 076	1.0	0.399
	330		1 604	0.8	0.562
	470		2 276	0.7	0.76
250	10	20	95	2.5	0.045
	22		185	1.9	0.087
	47		373	1.4	0.165
	100		770	1.1	0.315
	220		1 670	0.8	0.605
315	10	20	115	3	0.055
	22		229	1.9	0.104
	47		464	1.2	0.193
	100		965	0.8	0.355
350	10	20	125	4.2	0.06
	22		251	2.0	0.112
	47		514	1.3	0.207
	100		1 070	1.0	0.384
400	10	20	140	4.1	0.065
	22		284	2.7	0.125
	47		584	1.8	0.231
	100		1 220	1.2	0.433
450	10	20	155	4.0	0.07
	22		317	2.7	0.13
	33		466	2.2	0.177
	47		655	1.8	0.233
	100		1 370	1.3	0.416

* Capacitor impedance Z is measured at frequency 100 kHz for capacitors CR ≤1 000 µF, and at frequency 10 kHz for capacitors CR > 1 000 µF

Ripple current effective value
versus temperature and frequency can be found from the formula $I_{RO} = I_R \times K_T \times K_F$, where

I_R – allowable ripple current at 85 °C, 50 Hz (See Table “Capacitor electric parameters”)

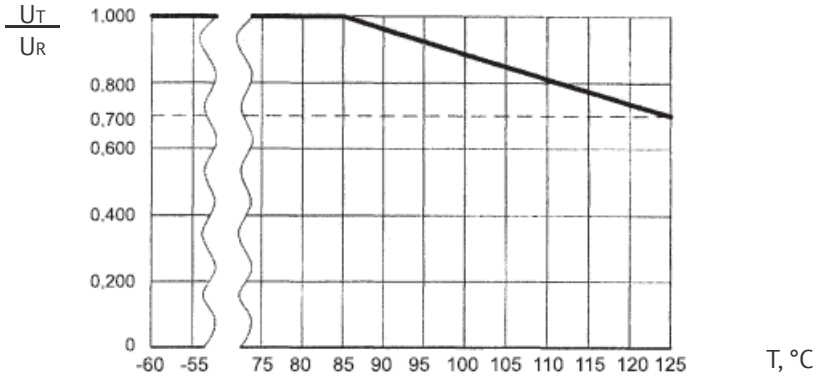
K_T - I_R CORRECTION FACTOR VERSUS TEMPERATURE

Tenv, °C	25	40	50	60	70	85	125
K_T	1.43	1.34	1.28	1.21	1.13	1.0	0.45

K_F - I_R CORRECTION FACTOR VERSUS FREQUENCY

F, Hz	50	100	300	600	1 000	10 000	≥50 000
K_F	1	1.25	1.5	1.63	1.69	1.88	2.0

VOLTAGE VERSUS TEMPERATURE



EXAMPLE OF REFERENCE DESIGNATION FOR ORDERING

CAPACITOR K50-87 – 6.3V – 47μF (+50 -20)% I B AZHYAR.673541.015 TU
CAPACITOR K50-87 – 6.3V – 47μF ±20% I B AZHYAR.673541.015 TU