

K50-102

ALUMINUM ELECTROLYTIC CAPACITOR

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AZHAR.673541.027 TU

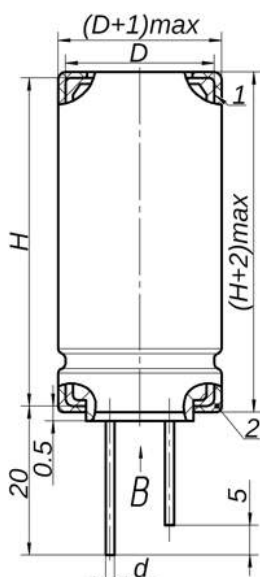


Polar fixed capacitors are intended for indoor installation with resistance requirements to high humidity of 98% at the temperature 35°C, for operation in direct and pulse current circuits of radio electronic equipment. Sealed. In insulated case with radial wire leads.

MAIN PARAMETERS

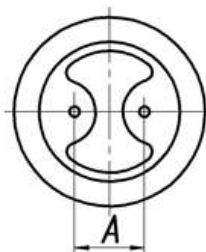
Name	Value
Rated voltage, V	6.3...350
Rated capacitance, µF	1...2 200
Capacitance tolerance (25°C, 50 Hz), %	+50...-20; ±20
Maximum operating temperature Tenv, °C	+100
Minimal operating temperature Tenv, °C	-60

GENERAL VIEW DRAWING



Variant 1

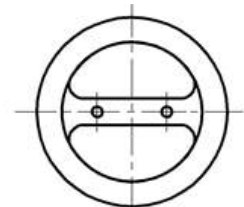
View B



D = 4; 5; 6.3; 8 mm

Variant 2

View B



D = 10; 12.5; 16 mm

1 – Varnishing (for all-climate version)
2 – Insulating sleeve

CAPACITOR RATINGS

U _R , V	6.3	10	16	25	35	40	50	63	100	160	200	250	315	350
C _R , μF														
1									✓	✓		✓	✓	✓
2.2								✓	✓	✓		✓		
3.3							✓	✓	✓	✓				
4.7				✓	✓		✓	✓	✓	✓	✓			
10			✓	✓	✓	✓	✓	✓	✓		✓			
22	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓			
33	✓	✓	✓	✓	✓	✓	✓	✓			✓			
47	✓	✓	✓	✓	✓	✓	✓	✓			✓			
100	✓	✓	✓	✓	✓	✓	✓				✓			
220	✓	✓	✓		✓		✓							
330	✓	✓			✓		✓							
470	✓	✓			✓		✓							
1 000					✓		✓							
2 200					✓		✓							

CAPACITORS RELIABILITY

Reliability Operation modes	Minimal nonfailure operating time, t _λ , hours	Capacitor failure rate, λ, 1/hour, max
Maximum-permissible mode (U _R , T _{env} =100°C)	1 000	2×10 ⁻⁴ (for D= 4-6.3mm)
	2 000	1×10 ⁻⁴ (for D= 8-16mm)
Typical operating mode (0.7U _R , T _{env} =55°C)	30 000	1×10 ⁻⁵ (for D= 4-6.3mm)
	35 000	1×10 ⁻⁵ (for D= 8-16mm)
Storageability Gamma-rated time of capacitor storageability T _{cy} at γ=95%, years, min	20	

CAPACITORS OVERALL DIMENSIONS AND MASS

U _R , V	C _R , μF	Dimensions, mm				Mass, g
		D	H	A	d	
6.3	22	4	7	1.5	0.45	0.43
6.3	33	4	7	1.5	0.45	0.43
6.3	47	4	7	1.5	0.45	0.43
6.3	100	5	11	2	0.5	0.75
6.3	220	5	11	2	0.5	0.75
6.3	330	6.3	11	2.5	0.5	0.97
6.3	470	6.3	11	2.5	0.5	0.97
10	22	4	7	1.5	0.45	0.43
10	33	4	7	1.5	0.45	0.43
10	47	5	11	2	0.5	0.75
10	100	5	11	2	0.5	0.75
10	220	5	11	2	0.5	0.75
10	330	6.3	11	2.5	0.5	0.97
10	470	6.3	11	2.5	0.5	0.97
16	10	4	7	1.5	0.45	0.43
16	22	4	11	1.5	0.45	0.58
16	33	4	11	1.5	0.45	0.58
16	47	5	11	2	0.5	0.75
16	100	5	11	2	0.5	0.75
16	220	6.3	11	2.5	0.5	0.97
25	4.7	4	7	1.5	0.45	0.43
25	10	4	7	1.5	0.45	0.43
25	22	4	11	1.5	0.45	0.58
25	33	5	11	1.5	0.5	0.75
25	47	5	11	1.5	0.5	0.75
25	100	6.3	11	2.5	0.5	0.97
35	4.7	4	7	1.5	0.45	0.43
35	10	4	11	1.5	0.45	0.58
35	22	5	11	2	0.5	0.75
35	33	5	11	2	0.5	0.75
35	47	5	11	2	0.5	0.75
35	100	6.3	11	2.5	0.5	0.97
35	220	8	11.5	3.5	0.6	1.55

U_R, V	$C_R, \mu F$	Dimensions, mm				Mass, g
35	330	10	12.5	5	0.6	2.21
35	470	10	20	5	0.6	3.31
35	1000	12.5	20	5	0.6	4.81
35	2200	16	31.5	7.5	0.8	9.8
40	10	4	11	1.5	0.45	0.58
40	22	5	11	2	0.5	0.75
40	33	5	11	2	0.5	0.75
40	47	6.3	11	2.5	0.5	0.97
40	100	8	11.5	3.5	0.5	1.55
50	3.3	4	7	1.5	0.45	0.43
50	4.7	4	11	1.5	0.45	0.58
50	10	4	11	1.5	0.45	0.58
50	22	5	11	2	0.5	0.75
50	33	5	11	2	0.5	0.75
50	47	6.3	11	2.5	0.5	0.97
50	100	8	11.5	3.5	0.6	1.55
50	220	10	16	5	0.6	2.68
50	330	10	20	5	0.6	3
50	470	12.5	20	5	0.6	4.35
50	1000	12.5	25	5	0.6	5.23
50	2200	16	35.5	7.5	0.8	12.8
63	2.2	4	7	1.5	0.45	0.43
63	3.3	4	7	1.5	0.45	0.43
63	4.7	4	11	1.5	0.45	0.58
63	10	5	11	2	0.5	0.75
63	22	5	11	2	0.5	0.75
63	33	6.3	11	2.5	0.5	0.97
63	47	6.3	11	2.5	0.5	0.97
100	1	5	11	2	0.5	0.75
100	2.2	5	11	2	0.5	0.75
100	3.3	5	11	2	0.5	0.75
100	4.7	5	11	2	0.5	0.75
100	10	5	11	2	0.5	0.75
100	22	6.3	11	2.5	0.5	0.97
160	1	6.3	11	2.5	0.5	0.97

U_R, V	C_R, μF	Dimensions, mm				Mass, g
160	2.2	6.3	11	2.5	0.5	0.97
160	3.3	6.3	11	2.5	0.5	0.97
160	4.7	6.3	11	2.5	0.5	0.97
200	4.7	6.3	11	2.5	0.5	0.97
200	10	8	11.5	3.5	0.6	1.55
200	22	10	16	5	0.6	2.68
200	33	10	20	5	0.6	3.75
200	47	10	20	5	0.6	3.75
200	100	16	20	7.5	0.8	7.81
250	1	6.3	11	2.5	0.5	0.97
250	2.2	6.3	11	2.5	0.5	0.97
315	1	6.3	11	2.5	0.5	0.97
350	1	6.3	11	2.5	0.5	0.97
D	H	A	d			

CAPACITOR ELECTRIC PARAMETERS VALUE WHEN DELIVERED

U_R, V	$C_R, \mu F$ T=25°C, F=50Hz	tg $\delta, \%$ T=25°C, F=50Hz	$I_{LEAK}, \mu A$ T=25°C, after 5min.	Z, Ohm T=25°C, F=100kHz	ESR, Ohm T=25°C, F=100Hz	I_R, mA T=100°C, F=50Hz
6.3	22	45	1	6.5	14	262
6.3	33	45	6.2	5	13.4	304
6.3	47	45	8.8	4	12.8	341
6.3	100	45	18.9	3	5	418
6.3	220	45	41.6	2	4	500
6.3	330	45	62.4	1.5	2	542
6.3	470	45	88.8	0.5	0.8	578
10	22	45	6.6	6.5	14	258
10	33	45	9.9	5	13.4	300
10	47	45	14.1	4	12.8	335
10	100	45	30	3	5	411
10	220	45	66	2	4	492
10	330	45	99	1.5	2	533
10	470	45	141	0.5	0.8	569
16	10	35	4.8	10	27	173
16	22	35	10.6	6	18	252
16	33	35	15.8	5.5	15	292
16	47	35	22.6	5	14	327
16	100	35	48	4	8	401
16	220	35	105.6	1	1.8	479
25	4.7	25	3.5	14	32	94
25	10	25	7.5	7	24	166
25	22	25	16.5	3	10.4	242
25	33	25	24.8	2	8.7	281
25	47	25	35.3	1.8	4	314
25	100	25	75	0.8	2	385
35	4.7	20	5	16	35	90
35	10	20	10.5	6	18	159
35	22	20	23.1	2.5	8.4	231
35	33	20	34.6	2.5	8.4	268
35	47	20	49.3	2	4.5	300
35	100	20	105	0.9	2.1	368
35	220	20	231	0.8	1.6	440

U_R, V	$C_R, \mu F$ T=25°C, F=50Hz	$tg \delta, \%$ T=25°C, F=50Hz	$I_{LEAK}, \mu A$ T=25°C, after 5min.	Z, Ohm T=25°C, F=100kHz	ESR, Ohm T=25°C, F=100Hz	I_R, mA T=100°C, F=50Hz
35	330	20	347	0.7	1.4	477
35	470	20	494	0.5	1	509
35	1000	20	1050	0.25	0.45	578
35	2200	20	1770	0.1	0.12	650
40	10	15	12	7	24	155
40	22	15	26.4	3.5	10	226
40	33	15	39.6	3.2	9	262
40	47	15	56.4	1.8	3.6	293
40	100	15	120	0.5	0.7	359
50	3.3	12	4.95	14	35	54
50	4.7	12	7.05	10	28	84
50	10	12	15	6	18	148
50	22	12	33	4	12	215
50	33	12	49.5	3.5	10	249
50	47	12	70.5	2.5	5	279
50	100	12	150	1.5	3	342
50	220	12	330	0.9	2.1	409
50	330	12	495	0.8	1.6	443
50	470	12	705	0.7	1.4	473
50	1000	12	1750	0.3	0.4	537
50	2200	12	1770	0.2	0.3	650
63	2.2	10	4.2	19	50	20
63	3.3	10	6.2	18.9	46	50
63	4.7	10	8.8	18.3	42	78
63	10	10	19	12.1	26	138
63	22	10	41.6	9	21	201
63	33	10	62.4	5	11	233
63	47	10	88.8	3	7	260
100	1	10	3	20	53.6	20
100	2.2	10	6.6	18	42	21
100	3.3	10	9.9	17.4	34	40
100	4.7	10	14.1	16.8	32	62
100	10	10	30	14.1	30	110
100	22	10	66	3.2	7.2	160
160	1	10	4.8	20	67	20

U_R, V	$C_R, \mu F$ T=25°C, F=50Hz	$tg \delta, \%$ T=25°C, F=50Hz	$I_{LEAK}, \mu A$ T=25°C, after 5min.	Z, Ohm T=25°C, F=100kHz	ESR, Ohm T=25°C, F=100Hz	I_R, mA T=100°C, F=50Hz
160	2.2	10	10.6	12	36	29
160	3.3	10	15.8	9	23	33
160	4.7	10	4.5	4.5	14	37
200	4.7	10	28.2	8.1	36	20
200	10	10	60	7.1	25	35
200	22	10	132	3	9	51
200	33	10	198	2	5.5	60
200	47	10	282	1	2.5	67
200	100	10	600	0.5	1	82
250	1	10	7.5	10.5	80	20
250	2.2	10	16.5	9.1	70	22
315	1	8	9.4	28	93	20
350	1	8	11	31	96	20

Ripple current effective value versus temperature and frequency can be found from the formula $I_{RIPPLE, A} = I_{R(50Hz, 100^\circ C)} \times K_{RT} \times K_{RF}$

K_{RT} - I_R CORRECTION FACTOR VERSUS TEMPERATURE

Tenv, °C	25	40	50	60	70	85	100
K_{RT}	1.2	1.19	1.18	1.16	1.13	1.08	1

K_{RF} - I_R CORRECTION FACTOR VERSUS FREQUENCY

F, Hz	50	100	300	600	1 000	10 000	100 000	300 000
K_{RF}	1	1.25	1.5	1.63	1.69	1.88	1.98	2

EXAMPLE OF REFERENCE DESIGNATION FOR ORDERING

CAPACITOR K50-102 – 50V – 22 μ F (+50 -20)% – I AZHYAR.673541.027 TU

CAPACITOR K50-102 – 50V – 22 μ F (+50 -20)% – I – V AZHYAR.673541.027 TU

CAPACITOR K50-102 – 50V – 22 μ F \pm 20% – I – V AZHYAR.673541.027 TU