

K50-77 OTK

ALUMINUM ELECTROLYTIC CAPACITOR

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EVAYA.673541.013 TU



Capacitors are used in power converter technology, frequency converters, rectifiers, etc.

Capacitors are suitable for application in direct current and ripple current circuits. Capacitors are produced in all climate version and temperate/cold climate version.

It is recommended to use this capacitor type as substitution for capacitors K50-37, K50-18 types.

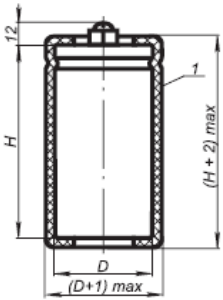
MAIN PARAMETERS

Name	Value
Rated voltage, V	16...450
Rated capacitance, μF	1 000...100 000
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...-10; ± 20
Maximum operating temperature T_{env} , °C	+85
Minimal operating temperature T_{env} , °C	-40
Induction coefficient between terminals, μH	≤ 0.115
Thermal resistance case - environment, max. °C/W	4.6

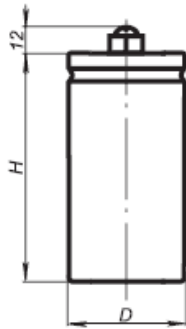
CAPASITOR PHYSICAL CONFIGURATION

Variant A

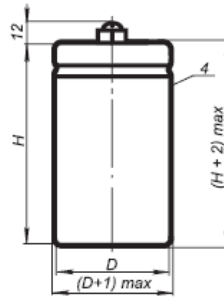
Temperate/cold climate version (Isolated)



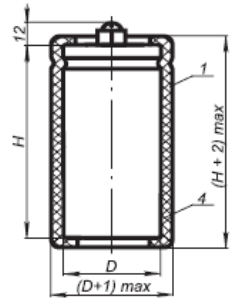
Temperate/cold climate version (Nonisolated)



All climate version (Nonisolated)

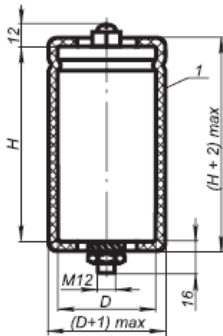


All climate version (Isolated)

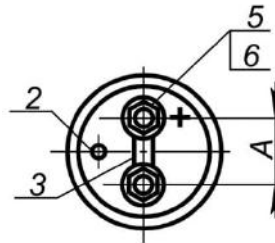
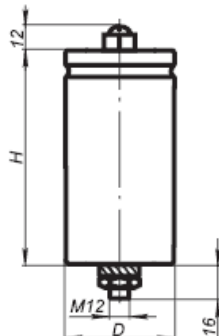


Variant B

Temperate/cold climate version (Isolated)

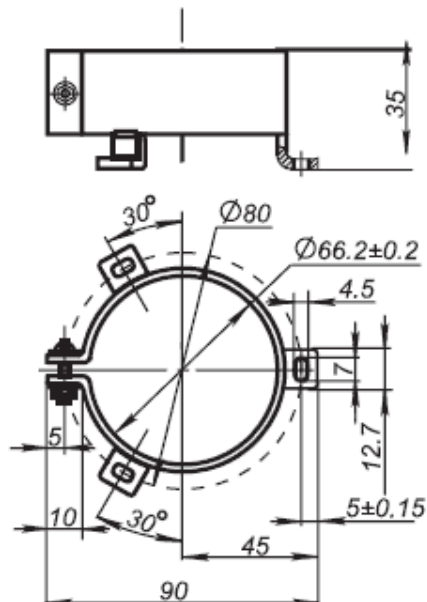


Temperate/cold climate version (Nonisolated)



- 1 – Isolation sleeve
- 2 – Explosion-proof valve
- 3 – Connecting strip for discharge
- 4 – Lacquer coating
- 5 – Screw BM5-6g
- 6 – Washer 5.65

OVERALL AND FITTING DIMENSIONS OF A CAPACITOR CLAMP



CAPACITORS RATINGS

U _R , V	16	25	40	63	100	160	250	350	400	450
C _R , μF										
1 000							✓		✓	
1 500									✓	✓
2 200									✓	
3 300									✓	
4 700						✓	✓	✓		
15 000				✓	✓					
33 000			✓							
100 000	✓	✓								

CAPACITORS OVERALL DIMENSIONS AND MASS

U _R , V	C _R , μF	D ^{+1.0} _{-0.5} , mm	H ^{+0.5} _{-2.0} , mm	A±0.15 mm	Mass, g, max
16	100000	50	84	22	300
25	100000	50	100	22	320
40	33000	50	66	22	230
63	15000	50	66	22	230
100	15000	50	110	22	350
160	4700	50	110	22	350
250	1000	50	66	22	230
250	4700	65	140	28.5	800
350	4700	65	120	28.5	700
400	1000	65	70	28.5	380
400	1500	65	105	28.5	600
400	1500	65	110	28.5	600
400	2200	65	105	28.5	600
400	2200	65	110	28.5	600
400	2200	65	140	28.5	800
400	3300	65	105	28.5	620
400	3300	65	140	28.5	800
450	1500	65	105	28.5	600
450	1500	65	140	28.5	800

CAPACITOR ELECTRIC PARAMETERS

U_R, V	$C_R, \mu F$	$tg \delta, \%, 25^\circ C, 50 Hz, max$	$I_{LEAK}, \mu A, 25^\circ C, after 5 min., max$	$Z, Ohm, 25^\circ C, 10kHz, max$	$I_R, A, 85^\circ C, 50 Hz, max$	$I_R, A, 85^\circ C, 100 Hz, max$
16	100000	60	8000	0.015	8.8	11
25	100000	40	12500	0.015	12	15
40	33000	35	6600	0.02	9.8	12.25
63	15000	20	9450	0.02	7.3	9.13
100	15000	15	7500	0.025	9.2	11.5
160	4700	15	7520	0.04	4	5
250	1000	15	2500	0.11	3	3.75
250	4700	15	5875	0.04	8.8	11
350	4700	15	8225	0.04	7.7	9.6
400	1000	15	2000	0.11	3.57	4.46
400	1500	15	6000	0.11	4.8	6
400	2200	15	8800	0.05	6.65	8.2
400	3300	15	6600	0.04	7.7	9.6
450	1500	15	6750	0.07	6	7.5

OPERATION TIME (THOUSANDS OF HOURS) VERSUS ENVIRONMENTAL TEMPERATURE T_{ENV} AND THE RIPPLE FACTOR OF LOADING CURRENT $K = I / I_{RIPPLE}$

$T_{env}, ^\circ C$	Ripple factor of loading current K							
	0	0.6	0.8	1.0	1.2	1.4	1.6	1.8
40	110	81.3	67.2	46.3	30.1	17.7	9.7	5.3
45	82.5	60.5	50.0	34.5	22.4	13.2	7.25	4.0
50	61.8	45.4	37.5	25.8	16.8	9.9	5.4	2.95
55	45.0	33.0	27.3	18.8	12.2	7.2	3.9	2.11
60	43.9	25.6	21.2	14.6	9.4	5.5	3.1	1.75
65	26.0	19.1	15.8	10.9	7.07	4.2	2.3	1.26
70	19.6	14.4	11.9	8.2	5.3	3.1	1.7	0.93
75	13.1	10.8	8.9	6.1	3.9	2.3	1.3	0.73
80	9.9	7.9	6.6	4.6	2.9	1.7	0.9	0.48
85	8.25	6.0	5.0	3.5	2.2	1.3	0.7	0.38

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	40	45	50	55	60	65	70	75	80	85	90	95	100	105
K_T	1.44	1.40	1.36	1.3	1.25	1.18	1.12	1.07	1.03	1.0	0.91	0.81	0.7	0.56

K_F - I_r CORRECTION FACTOR VERSUS FREQUENCY

F, Hz	50	100	300	1 000	≥10 000
K_F	1	1.25	1.44	1.5	1.63

CAPACITORS RELIABILITY

Reliability Operation modes	Minimal nonfailure operating time, t_λ, hours	Capacitor failure rate, λ, 1/hour, max
Maximum-permissible mode ($0.875U_R$, $T_{env}=85^\circ\text{C}$)	5 000	5×10^{-6}
Maximum-permissible mode (U_R , $T_{env}=70^\circ\text{C}$)	5 000	5×10^{-6}
Storageability Gamma-rated time of capacitor storageability T_{cy} at $\gamma=99.5\%$, years, min	10	

CODED SYMBOL FOR CAPACITORS (IDENTIFICATION NUMBER (PARTNUMBER))

CAPACITOR K50-77 – 40V – 33000 μ F (\pm 20%) – I – EVAYA.673541.013TU
(K50-77B- S -339M –D50H66-PET-013-UHL)

1	1.1	2	3	4	5	6	7	8	9
Capacitor K50-77	B	40V	33000 μ F	\pm 20%	D=50mm	H=66mm	PET	EVAYA.673541.013 TU	UHL
K50-77	B	S	339	M	D50	H66	PET	013	UHL

1. K50-77 – capacitor K50-77

1.1 Design variant

Code	The presence of a hairpin
A	Without End Stud (A)
B	With end pin (B)

2. Rated voltage code

Code	E	G	S	K	N	Q	W	T	Y	U
U _R , V	16	25	40	63	100	160	250	350	400	450

3. Nominal capacity code

Code	108	158	228	338	478	159	339	1009
C _R , μ F	1000	1500	2200	3300	4700	15000	33000	100000

4. Capacity approval code

Code	M	T
Admittance, %	\pm 20	+50; -10

5. Condenser diameter code

Code	D50	D65
Diameter, mm	50	65

6. Condenser height code

Code	H66	H70	H84	H100	H105	H110	H120	H140
Height, mm	66	70	84	100	105	110	120	140

7. Isolation code

Code	Decryption
PET	Isolated, packed in box for hand assembly equipment
PET-0	Uninsulated, packed in box for hand assembly equipment

8. Code TU

Code	TU designation
013	EVAYA.673541.013 TU

9. Climatic performance

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

EXAMPLE OF REFERENCE DESIGNATION FOR ORDERING

Variant A:

CAPACITOR K50-77 – 400V – 3300 μ F \pm 20% BI A EVAYA.673541.013 TU

Variant B:

CAPACITOR K50-77 – 400V – 3300 μ F \pm 20% I B EVAYA.673541.013 TU

For case D=65 mm, H=105 mm:

CAPACITOR K50-77 – 400V – 3300 μ F \pm 20% I B EVAYA. 673541.013 TU 65×105 mm