

K50-86

ALUMINUM ELECTROLYTIC CAPACITOR

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TU 6270-008-07628635-2007



Capacitors of compact design, polarized, fixed capacity, with radial screw terminals. Capacitor type is used for operation in direct current, ripple and pulse current circuits. The capacitor is available in all-climate (isolated and non-isolated) and temperate/cold climate version (isolated).

It is recommended to use this capacitor type as substitution for capacitors K50-18, K50-27, K50-37, K50-77 types.

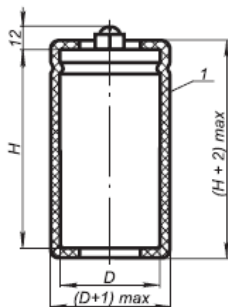
MAIN PARAMETERS

Name	Value
Rated voltage, V	250...485
Rated capacitance, μF	1 000...6 800
Temporary overvoltage within 10 sec., V	1.15 U_R ($U_R=250$) 1.1 U_R ($U_R>250$)
Capacitance tolerance (25 °C, 50 Hz), %	+30...-10; ± 20
Maximum operating temperature T_{env} , °C	+85
Minimal operating temperature T_{env} , °C	-40

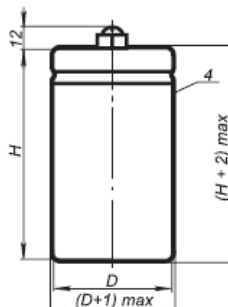
CAPASITOR PHYSICAL CONFIGURATION

Variant A

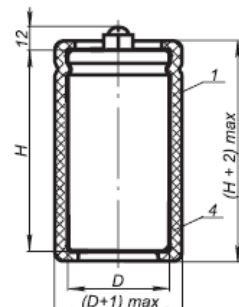
Temperate/cold climate version (Isolated)



All climate version (Nonisolated)

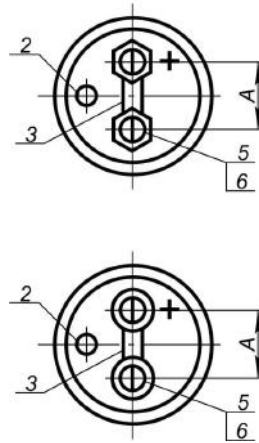
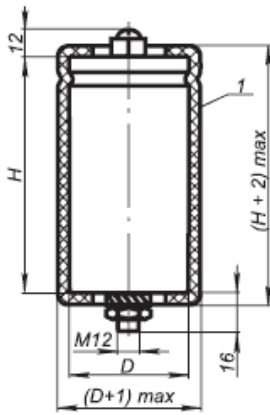


All climate version (Isolated)



Variant B

Temperate/cold climate
version (Isolated)



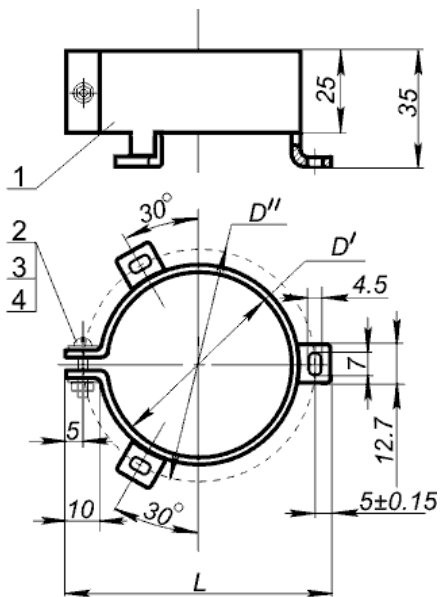
Cap.1st variant (for sizes 65×70;
65×105; 65×140; 76×142; 90×140)

Cap.2nd variant (for sizes 76×105;
76×146; 90×146)

D, mm	A, mm
65	28.5±0.15
76	32.0±0.15
90	32.0±0.15

- 1 – Insulating cover
- 2 – Explosion proof valve
- 3 – Jumper for discharge
- 4 – Paintwork
- 5 – Screw BM5-6g (BM6-6g for D=76mm as agreed with the consumer)
- 6 – Washer 5.65 (6.65 for D=76mm as agreed with the consumer)

OVERALL AND FITTING DIMENSIONS OF A CAPACITOR CLAMP



- 1 – clamp
- 2 – screw BM4-6gx12.48.019 GOST 17473
- 3 – washer A4,0.01.08 kp.019 GOST 11371
- 4 – nut M4-6N.04.019 GOST 5916

D'	D''	L	Mass, g, max
66.2±0.2	78.6	88.6	59.7
77.2±0.2	89.6	99.6	69.6
91.2±0.2	103.6	113.6	82.2

CAPACITORS OVERALL DIMENSIONS AND MASS

U _R , V	250	350	400		450	485
C _R , μF	DxL, mm mass, g					
1 000			<u>65x70</u> 400			
1 500			<u>65x105</u> 800		<u>65x105</u> 600	
2 000				<u>76x142</u> 1 100		
2 200			<u>65x105</u> 800			
3 300			<u>65x105</u> 600	<u>76x105</u> 740		
4 700	<u>65x140</u> 800	<u>65x140</u> 800	<u>76x142</u> 1 100	<u>76x146</u> 960		<u>90x140</u> 1 320
6 800			<u>90x140</u> 1 400	<u>90x146</u> 1 345		

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, 20kHz, max	ESR, Ohm, 25°C, 100Hz, max	M _{spec} , g/C·h, max	I _R , A, 85°C, 50 Hz, max		
							50 Hz	100 Hz	
250	4 700	10	5 203	0.11	0.1	0.041	8.5	10.6	
350	4 700		6 156	0.05	0.03	0.040	9.3	11.6	
400	1 000		2 466	0.16	0.13	0.079	3.7	4.6	
	1 500		3 021	0.11	0.09	0.083	4.8	6.0	
	2 200		3 658	0.07	0.06	0.057	6.4	8.0	
	3 300			5 514	0.05	0.04	0.038	8.8	11.0
					0.049	0.036	0.044	10.7	13.4
	4 700			6 581	0.034	0.03	0.042	11.2	14.0
	6 800			9 235	0.024	0.024	0.034	15.2	19.0
450	1 500		3 204	0.15	0.13	0.074	5.2	6.5	
	2 000		3 700	0.13	0.09	0.088	6.4	8.0	
485	4 700		8 455	0.08	0.06	0.040	12.1	15.1	

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
K_T	65x70; 65x105; 65x140; 76x142; 90x140 (mm x mm)					
	1.7	1.58	1.46	1.33	1.2	1.0
	76x105; 76x146; 90x146 (mm x mm)					
	2.4	2.3	2.2	2.0	1.7	1.0

K_F - I_r CORRECTION FACTOR VERSUS FREQUENCY

F, Hz	50	100	200	300	400	500	1 000	≥ 2 000
K_F	1	1.25	1.4	1.48	1.52	1.54	1.58	1.6

CAPACITORS RELIABILITY

Reliability Operation modes	Minimal nonfailure operating time, t_λ, hours	Capacitor failure rate, λ, 1/hour, max
Maximum-permissible mode (U_R , Tenv=85 °C) size DxH, mm: 65x70; 65x105; 65x140; 76x142; 90x140	12 000	5×10^{-5}
Maximum-permissible mode (U_R , Tenv=85 °C) size DxH, mm: 76x105; 76x146; 90x146	13 000	5×10^{-5}
Light mode ($0.5U_R$, Tenv=50 °C) size DxH, mm: 65x70; 65x105; 65x140; 76x142; 90x140	150 000	3×10^{-7}
Light mode ($0.5U_R$, Tenv=50 °C) size DxH, mm: 76x105; 76x146; 90x146	160 000	3×10^{-7}
Storageability Gamma-rated time of capacitor storageability T_{cy} at $y=95\%$, years, min	20	
Service life (U_R , Tenv=85 °C), hour, min size DxH, mm: 65x70; 65x105; 65x140; 76x142; 90x140 size DxH, mm: 76x105; 76x146; 90x146	18 000 20 000	
Pulsed service life: (U_R ; $T_{charge} \geq 0.1$ s; $R_{discharge} \geq 1$ Ohm; 25°C), cycles, min.	10^6	

CODED SYMBOL FOR CAPACITORS (IDENTIFICATION NUMBER (PARTNUMBER))

CAPACITOR K50-86 - 250V - 4700 μ F (\pm 20)% -I- TU6270-008-07628635-2007
(K50-86-W-478M-D65H140-PET-635-2007-UHL)

1	1.1	2	3	4	5	6	7	8	9
Capacitor K50-86	B	250V	4700 μ F	\pm 20%	D=65mm	H=140mm	PET	TU6270-008-07628635-2007	UHL
K50-86	B	W	478	M	D65	H140	PET	635-2007	UHL

1. K50-86 - capacitor K50-86

1.1 Design variant

Code	The presence of a hairpin
A	Without end pin
B	With end pin

2. Rated voltage code

Code	W	T	Y	U	Y85
U _R , V	250	350	400	450	485

3. Nominal capacity code

Code	108	158	208	228	338	478	688
C _R , μ F	1000	1500	2000	2200	3300	4700	6800

4. Capacity approval code

Code	M	Q
Admittance, %	\pm 20	+30; -10

5. Condenser diameter code

Code	D65	D76	D90
Diameter, mm	65	76	90

6. Condenser Height Code

Code	H70	H105	H140	H142	H146
Height, mm	70	105	140	142	146

7. Isolation code

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

8. Code TU

Code	TU designation
635-2007	TU6270-008-07628635-2007

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)

**CAPACITOR K50-86IRZ – 400V – 4700 μ F (\pm 20)% –I– TU6270-008-07628635-2007
(K50-86IRZ - Y -478M-D76H142-PET-635-2007-UHL)**

1	1.1	2	3	4	5	6	7	8	9
Capacitor K50-86	B	400V	4700 μ F	\pm 20%	D=76mm	H=142mm	PET	TU6270-008-07628635-2007	UHL
K50-86	B	Y	478	M	D76	H142	PET	635-2007	UHL

1. K50-86IRZ– capacitor K50-86IRZ

1.1 Design variant

Code	The presence of a hairpin
B	With end pin

2. Rated voltage code

Code	Y
U_R, V	400

3. Nominal capacity code

Code	478
C_R, μF	4700

4. Capacity approval code

Code	M
Admittance, %	\pm 20

5. Condenser diameter code

Code	D76
Diameter, mm	76

6. Condenser Height Code

Code	H142
Height, mm	142

7. Isolation code

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

8. Code TU

Code	TU designation
635-2007	TU6270-008-07628635-2007

9. Climatic performance

Code	Decryption
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

CAPACITOR K50-86a – 400V – 4700 μ F \pm 20% (76 \times 142) B TU 6270-008-07628635-2007

CAPACITOR K50-86a – 400V – 4700 μ F \pm 20% (76 \times 142) B I TU 6270-008-07628635-2007

CAPACITOR K50-86b – 400V – 4700 μ F \pm 20% (76 \times 142) I TU 6270-008-07628635-2007