MICH

UNCASED IONISTOR-BASED MODULE (JACKETED)

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EVAYA.673623.026 TU

Commercially produced modules. Available to order.

OCMAIN PARAMETERS

Name	Value
Rated voltage, V	5...30
Rated capacitance, F	0.08...100
Capacitance tolerance (25°C, 50 Hz), %	+50...-20; ±20
Maximum operating temperature Tenv, °C	+65
Minimal operating temperature Tenv, °C	Type 1: -50 Type 2: -60

OVERALL DIMENSIONS AND MASS OF SUPERCAPACITOR MODULES MICH

Name	Type [1]	Version [2]	Dimensions, mm				Mass, g	Figure
			L	W	H	A		
Module 5V x 0.5F	1	1	31	22	60	-	28	2
Module 5V x 0.5F	1	1	31	24	60	-	30	2
Module 5V x 1.5F	1	1	34	24	60.5	-	33	2
Module 5V x 2.5F	1	1	36	26	71.5	-	36	2
Module 5V x 5F	1	1	43.5	26	59	-	41	2
Module 5V x 12.5F	1	2	48	32	66	34	130	1
Module 5V x 50F	1	3	71	35	81	49	140	3
Module 5V x 100F	1	3	80	40	100.5	58	240	3
Module 7.5V x 0.33F	1	1	31	22	85.5	-	38	2

Module 7.5V x 0.33F	1	1	31	24	85.5	-	40	2
Module 7.5V x 1F	1	1	33.5	24	85.5	-	40	2
Module 7.5V x 1.66F	1	1	36	26	97	-	44	2
Module 7.5V x 3.3F	1	1	43.5	26	85	-	49	2
Module 7.5V x 8.33F	1	2	48	32	92	34	160	1
Module 7.5V x 33.33F	1	3	71	35	111	49	200	3
Module 7.5V x 66.66F	1	3	80	40	133.5	58	350	3
Module 10V x 2.5F	1	1	43.5	26	124.5	-	73	2
Module 10V x 25F	1	3	71	35	141	49	260	3
Module 10V x 50F	1	3	80	39	166.5	58	455	3
Module 12.5V x 2F	1	1	43.5	26	150	-	88	2
Module 15V x 1.66F	1	1	43.5	26	161	-	102	2
Module 20V x 0.62F	1	1	45	36	122.5	-	146	4
Module 20V x 1.25F	1	1	45	43.5	122.5	-	178	4
Module 25V x 0.5F	1	1	45	36	148	-	178	4
Module 25V x 1F	1	1	45	43.5	150	-	210	1
Module 30V x 0.08F	1	1	37	31	174	-	175	4
Module 30V x 0.08F	1	1	41	31	174	-	178	4
Module 30V x 0.41F	1	1	45	36	173.5	-	178	4
Module 30V x 0.83F	1	1	45	43.5	175.5	-	210	4
Module 30V x 8.33F	1	3	65	71	215	49	790	5
Module 30V x 16.66F	1	3	75	80	232.5	57	1 390	5
Module 5V x 0.5F	2	1	31	25	60	-	28	2
Module 5V x 0.5F	2	1	31	24	60	-	30	2
Module 5V x 1.5F	2	1	34	24	60.5	-	33	2
Module 5V x 2.5F	2	1	36	26	71.5	-	36	2
Module 5V x 5F	2	1	43.5	26	59	-	41	2
Module 5V x 12.5F	2	2	48	32	66	34	130	1
Module 5V x 50F	2	3	71	35	81	49	140	3
Module 5V x 100F	2	3	80	40	100.5	58	240	3
Module 7.5V x 0.33F	2	1	31	22	85.5	-	38	2
Module 7.5V x 0.33F	2	1	31	24	85.5	-	40	2
Module 7.5V x 1F	2	1	33.5	24	85.5	-	40	2
Module 7.5V x 1.66F	2	1	36	26	97	-	44	2
Module 7.5V x 3.3F	2	1	43.5	26	85	-	49	2
Module 7.5V x 8.33F	2	2	48	32	92	34	160	1
Module 7.5V x 33.33F	2	3	71	35	111	49	200	3

Module 7.5V x 66.66F	2	3	80	40	133.5	58	350	3
Module 10V x 2.5F	2	1	43.5	26	124.5	-	73	2
Module 10V x 25F	2	3	71	35	141	49	260	3
Module 10V x 50F	2	3	80	39	166.5	58	455	3
Module 12.5V x 2F	2	1	43.5	26	150	-	88	2
Module 15V x 1.66F	2	1	43.5	26	161	-	102	2
Module 20V x 0.62F	2	1	45	36	122.5	-	146	4
Module 20V x 1.25F	2	1	45	43.5	124.5	-	178	4
Module 25V x 0.5F	2	1	45	36	148	-	178	4
Module 25V x 1F	2	1	45	43.5	150	-	210	4
Module 30V x 0.08F	2	1	37	31	174	-	175	4
Module 30V x 0.08F	2	1	41	31	174	-	178	4
Module 30V x 0.41F	2	1	45	36	173.5	-	178	4
Module 30V x 0.83F	2	1	45	43.5	175.5	-	210	4
Module 30V x 8.33F	2	3	65	71	215	49	790	5
Module 30V x 16.66F	2	3	75	80	232.5	57	1 390	5

Note 1

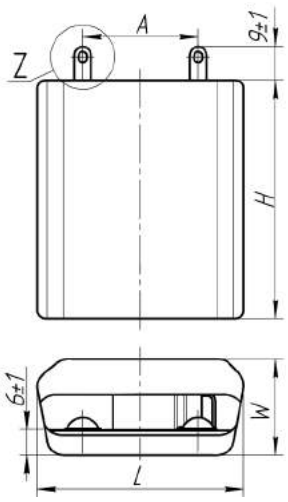
- **Type-1** with lower ESR and leakage current, operating temperature range from –50°C to +65°C (MICH-1-1, MICH-1-2, MICH-1-3);
- **Type-2** with extended operating temperature range from -60°C to +65°C (MICH-2-1, MICH-2-2, MICH-2-3).

Note 2

- **Version 1** are uncased PCB supercapacitor modules with unidirectional polar wire leads. Modules in shrink wrap are intended for internal wiring with higher humidity resistance of 98% at temperature 25°C and 35°C.
- **Version 2** are uncased PCB supercapacitor modules with unidirectional polar wire leads. Modules in shrink wrap are intended for internal wiring with higher humidity resistance of 98% at temperature 25°C and 35°C.
- **Version 3** are uncased PCB supercapacitor modules with polar screw terminals. Modules in shrink wrap are intended for internal wiring with higher humidity resistance of 98% at temperature 25°C and 35°C.

GENERAL VIEW DRAWING

Figure 1



View Z (2:1)

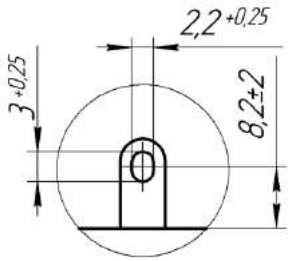


Figure 2
(also see fig. 1)

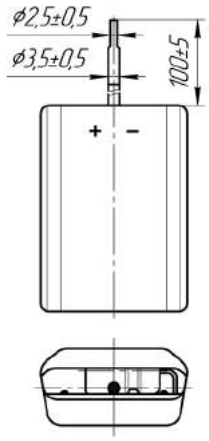


Figure 3
(also see fig. 1)

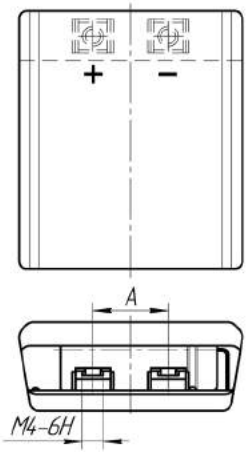


Figure 4
(also see fig. 1)

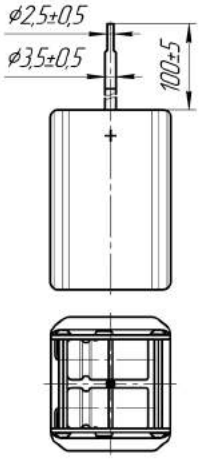
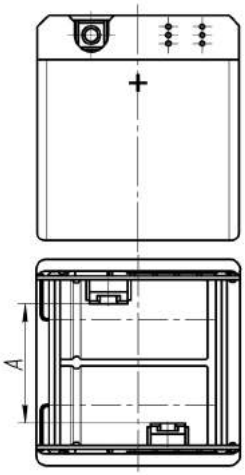


Figure 5
(also see fig. 1)



ELECTRICAL PARAMETERS FOR SUPERCAPACITOR MODULES MICH TYPE-1

Rated voltage, V	Rated capacitance, F	Leakage current, μA, (72 hours) T=(25±1)°C	ESR_{DC}, MOhm T=(25±1)°C
5	0.5	10	400
5	1.5	10	110
5	2.5	15	90
5	5	25	70
5	12.5	65	54
5	50	200	30
5	100	700	24
7.5	0.33	10	600
7.5	1	10	165
7.5	1.66	15	135
7.5	3.3	25	105
7.5	8.33	65	81
7.5	33.33	200	45
7.5	66.66	700	36
10	2.5	25	140
10	25	200	60
10	50	700	48
12.5	2	25	175
15	1.66	25	210
20	0.62	15	360
20	1.25	25	280
25	0.5	15	450
25	1	25	350
30	0.08	10	2 400
30	0.41	15	540
30	0.83	25	420
30	8.33	200	180
30	16.66	700	144

ELECTRICAL PARAMETERS FOR SUPERCAPACITOR MODULES MICH TYPE-2

Rated voltage, V	Rated capacitance, F	Leakage current, μA, (72 hours) T=(25±1)°C	ESR_{DC}, MOhm T=(25±1)°C
5	0.5	15	800
5	1.5	15	220
5	2.5	23	180
5	5	38	140
5	12.5	98	108
5	50	300	60
5	100	1 050	48
7.5	0.33	15	1 200
7.5	1	15	330
7.5	1.66	23	270
7.5	3.3	38	210
7.5	8.33	98	162
7.5	33.33	300	90
7.5	66.66	1 050	72
10	2.5	38	280
10	25	300	120
10	50	1 050	96
12.5	2	38	350
15	1.66	38	420
20	0.62	23	720
20	1.25	38	560
25	0.5	23	900
25	1	38	700
30	0.08	15	4 800
30	0.41	23	1 080
30	0.83	38	840
30	8.33	300	360
30	16.66	1 050	288

CAPACITORS RELIABILITY

Reliability Operation modes	t_λ, hours	t_λ, cycles	λ, 1/hour, max
Maximum-permissible mode (U_R, Tenv=65°C)	1 500		$5x10^{-4}$
Maximum-permissible mode (charge to U_R, discharge to ½U_R, Tenv=65°C)		30 000	$5x10^{-5}$
Typical operating mode (U_R, Tenv=25°C)	90 000		$2x10^{-5}$
Typical operating mode (charge to U_R, discharge to ½U_R, Tenv=25°C)		500 000	$2x10^{-5}$

Gamma-rated time of capacitor storageability Tcy at y=95%, 25 years

EXAMPLE OF REFERENCE DESIGNATION

Module MICH-1-2 – 5V – 12.5F – M EVAYA.673623.026 ТУ

Module MICH-2-3 – 7.5V – 33.33F – S – B EVAYA.673623.026 ТУ

Module MICH-1-1 – 30V – 0.83F – M – B EVAYA.673623.026 ТУ

Module MICH-2-1 – 30V – 0.83F – S – L EVAYA.673623.026 ТУ

“M” – capacitance tolerance code (±20%);
“S” – capacitance tolerance code (+50...-20)%;
“B” – module for internal wiring with higher humidity resistance of 98% at temperature 35°C , without “B”– module for internal wiring with higher humidity resistance of 98% at temperature 25°C;
“L” – modules 5.0V x 0.5F; 7.5V x 0.33F; 30V x 0.08F in presence of “L” are based on ionistors 2.7V x 1F (D=6.3 mm x H=14 mm), in the absence of “L” – on ionistors 2.7V x 1F (D=8 mm x H=13 mm)