FEATURES

- Unique slim profile design /Lead Type Terminal
- Passive linear voltage balanced cells
- Fast charge time / Molex Mini-Lock connector
- Maintenance-free backup
- Green solution vs. batteries
- Each module has voltage balancing
- RoHS Compliant

APPLICATIONS

- Automatic meter readers
- Automotive subsystems
- Backup power for safe shutdown requirements
- Battery-powered tools and handheld electronic devices
- Data deduplication/Networking last gasp/RAID storage/SSD
- Wireless transmission/Servers

GENERAL SPECIFICATIONS

Item	Performance
Operating temperature	-40°C to +65°C
Capacitance range	0.15F to 30F
Capacitance tolerance	-10% to +30%
Rated voltage	10.8VDC / 60.0 VDC
Temperature characteristics	Capacitance change: Within ±30% of initial measured value at +25°C Internal resistance: Within ±200% of initial measured value at +25°C
Endurance (At rated voltage & max. operating temp)	After 65°C 1000 hours: Capacitance change: ±30% of initial rated value Internal resistance: Within 2 times of initial specified value
Projected load life （At rated voltage 25℃）	After 10 years: Capacitance change: ±30% of initial rated value Internal resistance: Within 2 times of initial specified value
Projected cycle life (From rated voltage to 1/2 rated voltage at 25°C)	After 500,000 cycles: Capacitance change: Within ±30 % of initial rated value Internal resistance: Within 2 times of initial specified value
Vibration resistance	Amplitude:1.5mm /Frequency:10~55Hz /Duration: X,Y,Z(2 hrs)/Duration of testing:6 hrs Capacitance change: Within ±30 % of initial rated value Internal resistance: Within 2 times of initial specified value
Shelf life	After 2 years at 25°C without load, the capacitor shall meet the specified endurance limits.

PART NUMBER SYSTEM

CMZ	1860	S	106	32R4	W	**	***
Series	Cell Size	Connection Code	Capacity Code	Rated Voltage	Balance Code	PIN Code	Special Code

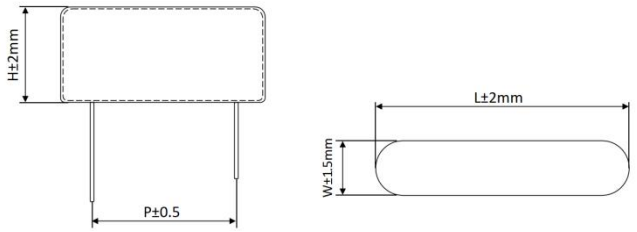
Casing Display:

No. 4, Jifeng Road, Wufeng District, Taichung City, Taiwan. TEL:+86-852-51245795 www.cda-cap.com E-MAIL: zfw@cda-cap.tw

Spec. Date:2025-08-02

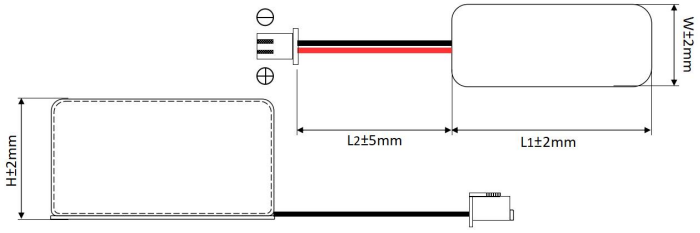
DIMENSIONS

DA Type



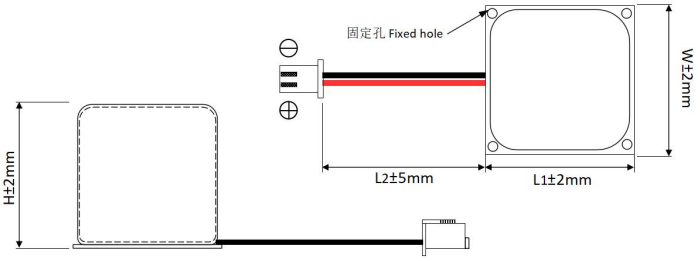
W	P(mm)				Φd
	10.8V	13.5V	16.2V	18V	
11	36	46.2	56.5	56.5	0.6
14	43.4	56.2	69	69	0.8
17	56.4	72.7	89	89	0.8
19	62.4	80.7	99	99	0.8

LA Type



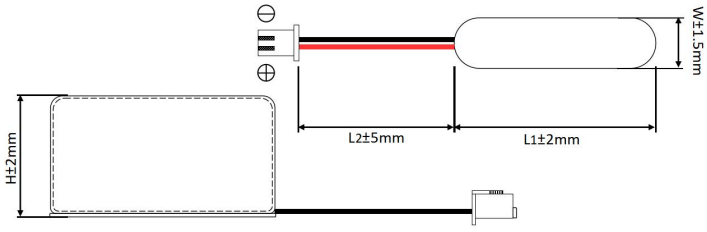
①Module type specification Applies to W: 22mm & 28mm		②Module type specification Applies to W: 34mm & 56mm	
Wire	UL3239 AWG20 - 75mm	Wire	UL3239 AWG16 - 75mm
Terminals	Molex Mini-Lock51163-0200	Terminals	JST VHR-2N
Terminal block pins	Molex 50752-8200	Terminal block pins	JST SVH-41T-P1.1
Male pin socket	Molex 53375-0210	Male pin socket	JST B2P-VH

XR Type



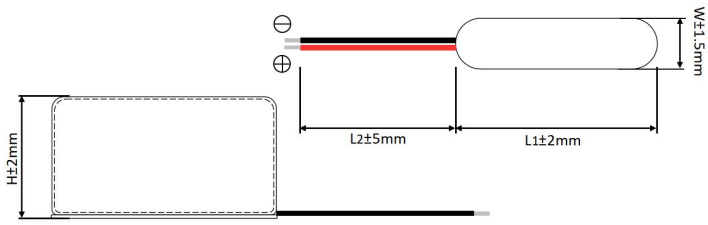
①Module type specification Applies to W: 45mm		②Module type specification Applies to W: 60mm & 66mm	
Wire	UL3239 AWG20 - 75mm	Wire	UL3239 AWG16 - 75mm
Terminals	Molex Mini-Lock51163-0200	Terminals	JST VHR-2N
Terminal block pins	Molex 50752-8200	Terminal block pins	JST SVH-41T-P1.1
Male pin socket	Molex 53375-0210	Male pin socket	JST B2P-VH

CP Type



①Module type specification Applies to W: 7mm & 11mm		②Module type specification Applies to W: 14mm	
Wire	UL3239 AWG20 - 75mm	Wire	UL3239 AWG16 - 75mm
Terminals	Molex Mini-Lock51163-0200	Terminals	JST VHR-2N
Terminal block pins	Molex 50752-8200	Terminal block pins	JST SVH-41T-P1.1
Male pin socket	Molex 53375-0210	Male pin socket	JST B2P-VH
③Module type specification Applies to W: 17mm & 19mm			
Wire	UL3239 AWG16 - 75mm		
Terminals	JST VHR-2N		
Terminal block pins	JST SVH-41T-P1.1		
Male pin socket	JST B2P-VH		

CJ Type



①Module type specification Applies to W: 7mm & 11mm	
Wire	UL3239 AWG22
Wire length	50mm
②Module type specification Applies to W: 14mm	
Wire	UL3239 AWG18
Wire length	50MM
③Module type specification Applies to W: 17mm & 19mm	
Wire	UL3239 AWG18/AWG16
Wire length	50mm

No. 4, Jifeng Road, Wufeng District, Taichung City, Taiwan. TEL:+86-852-51245795 www.cda-cap.com E-MAIL: zfw@cda-cap.tw

Spec. Date:2025-08-02

STANDARD PRODUCTS

Part Number	Rated Voltage (V DC)	Rated Cap (F)	GMV (F)	Dimensions (mm)			ESRAC (1kHz/mΩ)	ESR DC (mΩ)	Peak Current 1s(A)	Rated Current 5s(A)	Leakage Current (72hrs/mA)
				W	L	H					
10.8V Series - Module											
CMZ1025S25510R8W	10.8	2.5	2.2	11	41	28	240	360	7.11	2.29	0.033
CMZ1326S45510R8W	10.8	4.5	4	14	53	29	160	240	11.68	4.00	0.050
CMZ1625S55510R8W	10.8	5.5	4.9	17	65	28	100	152	16.18	5.09	0.068
CMZ1630S70510R8W	10.8	7	6.3	17	65	33	80	120	20.54	6.47	0.075
CMZ1635S85510R8W	10.8	8.5	7.6	17	65	38	80	120	22.72	7.62	0.080
CMZ1346S10610R8W	10.8	10	9	14	53	49	80	120	24.55	8.71	0.080
CMZ1835S11610R8W	10.8	11.25	10	19	73	38	72	108	27.43	9.77	0.088
CMZ1840S20610R8W	10.8	20.5	18	19	73	43	72	120	31.99	14.84	0.130
CMZ1860S25610R8W	10.8	25	22	19	73	63	52	80	45.00	19.29	0.240
CMZ1860S30610R8W	10.8	30	27	19	73	63	52	80	47.65	21.89	0.280
13.5V Series - Module											
CMZ1020S40413R5W	13.5	0.4	0.36	11	51	23	450	675	2.13	0.51	0.020
CMZ1020S10513R5W	13.5	1	0.9	11	51	23	375	565	4.31	1.21	0.015
CMZ1030S20513R5W	13.5	2	1.8	11	51	33	225	340	8.04	2.38	0.030
CMZ1320S30513R5W	13.5	3	2.7	14	66	23	225	340	10.02	3.36	0.040
CMZ1325S40513R5W	13.5	4	3.6	14	66	28	200	300	12.27	4.35	0.050
CMZ1335S44513R5W	13.5	4.4	3.9	14	66	38	150	225	14.92	4.96	0.060
CMZ1625S50513R5W	13.5	5	4.5	17	81	28	125	190	17.31	5.67	0.068
CMZ1630S56513R5W	13.5	5.6	5	17	81	33	100	150	20.54	6.47	0.075
CMZ1346S68513R5W	13.5	6.8	6.1	14	66	49	100	150	22.72	7.62	0.080
CMZ1346S80513R5W	13.5	8	7.2	14	66	49	100	150	24.55	8.71	0.080
CMZ1835S90513R5W	13.5	9	8.1	19	91	38	90	135	27.43	9.77	0.110
CMZ1840S12613R5W	13.5	12	11	19	91	43	75	115	34.03	12.70	0.150
CMZ1840S16613R5W	13.5	16.4	14	19	91	43	90	150	31.99	14.84	0.130
CMZ1860S20613R5W	13.5	20	18	19	91	63	65	100	45.00	19.29	0.240
CMZ1860S24613R5W	13.5	24	21	19	91	63	65	100	47.65	21.89	0.280
16.2V Series - Module											
CMZ1025S16516R2W	16.2	1.66	1.4	11	61	28	360	540	7.09	2.28	0.030
CMZ1320S25516R2W	16.2	2.5	2.2	14	79	23	270	408	10.02	3.36	0.040
CMZ1330S36516R2W	16.2	3.66	3.2	14	79	33	210	318	13.70	4.81	0.055
CMZ1630S46516R2W	16.2	4.66	4.1	17	97	33	120	180	20.53	6.46	0.075
CMZ1635S56516R2W	16.2	5.66	5	17	97	38	120	180	22.71	7.62	0.080
CMZ1835S58516R2W	16.2	5.83	5.2	19	109	38	108	162	24.29	7.94	0.088
CMZ1346S66516R2W	16.2	6.66	5.9	14	79	43	120	180	24.53	8.70	0.080
CMZ1840S75516R2W	16.2	7.5	6.7	19	109	43	96	144	29.21	9.99	0.105
CMZ1840S10616R2W	16.2	10	9	19	109	43	90	138	34.03	12.70	0.150
CMZ1840S13616R2W	16.2	13.66	12	19	109	43	108	180	31.99	14.83	0.130
CMZ1860S16616R2W	16.2	16.6	15	19	109	63	78	120	44.94	19.23	0.240
CMZ1860S20616R2W	16.2	20	18	19	109	63	78	120	47.65	21.89	0.280
18V Series - Module											
CMZ0622S55418R0A	18	0.55	0.49	7	40	25	540	1500	2.71	0.85	0.02
CMZ0825S83418R0A	18	0.83	0.74	9	50	28	420	1080	3.94	1.27	0.06
CMZ1030S16518R0W	18	1.6	1.44	11	60	32	240	480	8.14	2.50	0.10
CMZ1330S33518R0W	18	3.3	2.97	14	78	33	150	300	14.92	4.96	0.15
CMZ1630S58518R0W	18	5.8	5.31	17	98	34	120	240	21.82	8.17	0.22
CMZ1840S11618R0W	18	11.6	10.4	19	111	45	84	114	44.95	16.51	0.50
CMZ1860S16618R0W	18	16.6	14.9	19	111	65	72	96	57.60	22.66	0.50
CMZ1860S18618R0W	18	18.3	16.4	19	111	65	72	96	59.74	24.38	0.55
21.6V Series - Module											
CMZ1016S50421R6W	21.6	0.5	0.4	22	41	20	720	1080	3.51	0.97	0.020
CMZ1020S60421R6W	21.6	0.62	0.5	22	41	23	600	904	4.29	1.20	0.015
CMZ1030S12521R6W	21.6	1.25	1.1	22	41	33	360	544	8.04	2.38	0.030
CMZ1330S27521R6W	21.6	2.75	2.4	28	53	33	280	424	13.71	4.82	0.055
CMZ1630S35521R6W	21.6	3.5	3.1	34	65	33	160	240	20.54	6.47	0.075
CMZ1630S42521R6W	21.6	4.25	3.8	34	65	33	160	240	22.72	7.62	0.080
CMZ1346S50521R6W	21.6	5	4.5	28	53	49	160	240	24.55	8.71	0.080
CMZ1840S56521R6W	21.6	5.62	5	38	73	43	128	192	29.19	9.98	0.105
CMZ1840S75521R6W	21.6	7.5	6.7	38	73	43	120	184	34.03	12.70	0.150
CMZ1840S10621R6W	21.6	10.25	9.2	38	73	43	144	240	31.99	14.84	0.130
CMZ1860S12621R6W	21.6	12.5	11	38	73	63	104	160	45.00	19.29	0.240
CMZ1860S15621R6W	21.6	15	13	38	73	63	104	160	47.65	21.89	0.280

STANDARD PRODUCTS

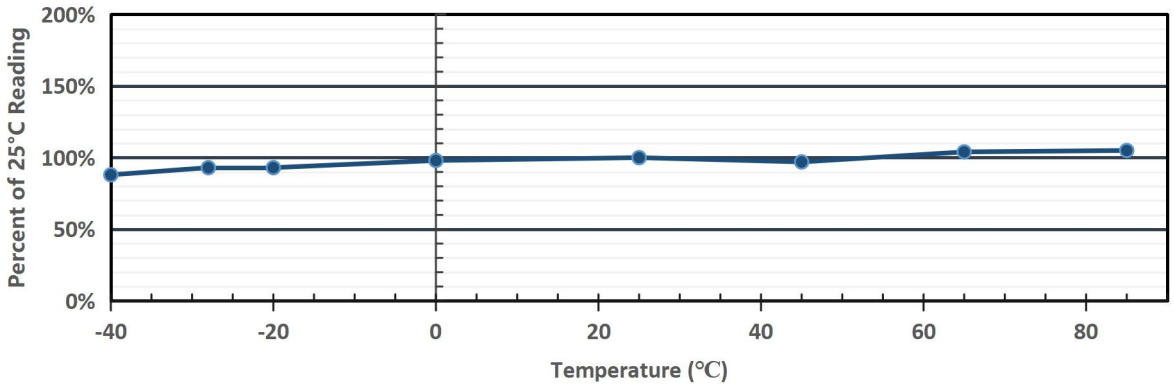
Part Number	Rated Voltage (V DC)	Rated Cap (F)	GMV (F)	Dimensions (mm)			ESRAC (1kHz/mΩ)	ESR DC (mΩ)	Peak Current 1s (A)	Rated Current 5s(A)	Leakage Current (72hrs/mA)
				W	L	H					
24V Series - Module											
CMZ1030S12524R0W	24	1.2	1	45	32	35	450	680	7.93	2.48	0.030
CMZ1625S27524R0W	24	2.7	2.4	60	50	30	230	345	16.77	5.46	0.065
CMZ1630S33524R0W	24	3.3	3	60	50	35	190	360	18.10	6.40	0.075
CMZ1635S38524R0W	24	3.8	3.5	60	50	40	180	380	18.66	7.08	0.095
CMZ1835Q55524R0W	24	5.5	5	66	56	40	170	250	27.79	10.35	0.110
CMZ1840S55524R0W	24	5.5	5	66	56	45	150	225	29.50	10.58	0.105
CMZ1840S66524R0W	24	6.6	6	66	56	45	140	210	33.19	12.40	0.150
CMZ1840S77524R0W	24	7.7	7	66	56	45	140	200	36.38	14.13	0.125
CMZ1840S91524R0W	24	9.1	8	66	56	45	140	200	38.72	16.01	0.140
CMZ1860S11624R0W	24	11.1	10	66	56	65	130	190	42.84	18.74	0.350
CMZ1860S13624R0W	24	13.3	12	66	56	65	130	190	45.25	21.20	0.280
27V Series - Module											
CMZ1020S50427R0W	27	0.5	0.45	22	51	23	600	900	4.66	1.24	0.020
CMZ1030S10527R0W	27	1	0.9	22	51	33	450	680	8.04	2.38	0.030
CMZ1330S22527R0W	27	2.2	2	28	66	33	350	530	13.71	4.82	0.055
CMZ1625S22527R0W	27	2.2	2	34	81	28	250	380	16.18	5.09	0.068
CMZ1630S28527R0W	27	2.8	2.5	34	81	33	200	300	20.54	6.47	0.075
CMZ1630S34527R0W	27	3.4	3	34	81	33	200	300	22.72	7.62	0.080
CMZ1346S40527R0W	27	4.0	3.6	28	66	49	200	300	24.55	8.71	0.080
CMZ1840S45527R0W	27	4.5	4	38	99	45	150	200	31.97	10.30	0.22
CMZ1840S60527R0W	27	6	5.4	38	99	45	150	200	36.82	13.06	0.22
CMZ1840S82527R0W	27	8.2	7.3	38	99	45	145	190	43.28	16.88	0.30
CMZ1860S10627R0W	27	10	9	38	99	65	120	160	51.92	20.45	0.50
CMZ1860S12627R0W	27	12	11	38	99	65	120	160	55.48	23.41	0.50
30V Series - Module											
CMZ0622S33430R0A	30	0.33	0.29	14	34	26	900	2500	2.71	0.85	0.04
CMZ0825S50430R0A	30	0.5	0.45	17	42	28	700	1800	3.95	1.27	0.06
CMZ1030S10530R0W	30	1	0.9	22	52	33	400	800	8.33	2.59	0.12
CMZ1330S20530R0W	30	2	1.8	28	66	34	300	500	15.00	5.00	0.25
CMZ1635S35530R0W	30	3.5	3.15	34	82	35	150	400	21.88	8.20	0.32
CMZ1840S70530R0W	30	7	6.3	38	92	45	150	190	45.06	16.59	0.90
CMZ1860S10630R0W	30	10	9	38	98	65	150	160	57.69	22.73	1.50
CMZ1860S11630R0W	30	11	9.9	38	98	65	120	180	55.37	23.64	1.70
32.4V Series - Module											
CMZ1020S41432R4W	32.4	0.41	0.36	22	61	23	900	1356	4.27	1.20	0.020
CMZ1030S83432R4W	32.4	0.83	0.74	22	61	33	540	816	8.02	2.37	0.030
CMZ1330S18532R4W	32.4	1.83	1.6	28	79	33	420	636	13.70	4.81	0.055
CMZ1630S23532R4W	32.4	2.33	2	34	97	33	240	360	20.53	6.46	0.075
CMZ1630S28532R4W	32.4	2.83	2.5	34	97	33	240	360	22.71	7.62	0.080
CMZ1346S33532R4W	32.4	3.33	3	28	79	49	240	360	24.53	8.70	0.080
CMZ1840S37532R4W	32.4	3.75	3.5	38	118	45	145	240	31.97	10.30	0.20
CMZ1840S50532R4W	32.4	5	4.5	38	118	45	145	240	36.82	13.06	0.25
CMZ1840S68532R4W	32.4	6.83	6.1	38	118	45	145	228	43.27	16.87	0.30
CMZ1860S83532R4W	32.4	8.33	7.4	38	118	65	145	192	51.92	20.45	0.50
CMZ1860S10632R4W	32.4	10	9	38	118	65	145	195	54.92	23.31	0.50
60V Series - Module											
CMZ0622S15460R0A	60	0.15	0.12	22	49	24	2400	3000	3.10	0.83	0.08
CMZ0825S33460R0A	60	0.33	0.29	25	60	27	2100	2400	5.52	1.71	0.15
CMZ1030S50460R0W	60	0.50	0.45	34	74	32	1200	1600	8.33	2.59	0.29
CMZ1330S75460R0W	60	0.75	0.66	38	91	32	900	1100	12.33	3.86	0.60
CMZ1635S16560R0W	60	1.6	1.44	49	115	37	500	600	24.49	8.05	0.84
CMZ1840S35560R0W	60	3.5	3	55	130	45	400	500	38.18	15.56	1.52
CMZ1860S55560R0W	60	5.5	5	55	130	65	350	400	51.56	22.92	2.40

***NOTE: GMV = Guaranteed Minimum Value.**

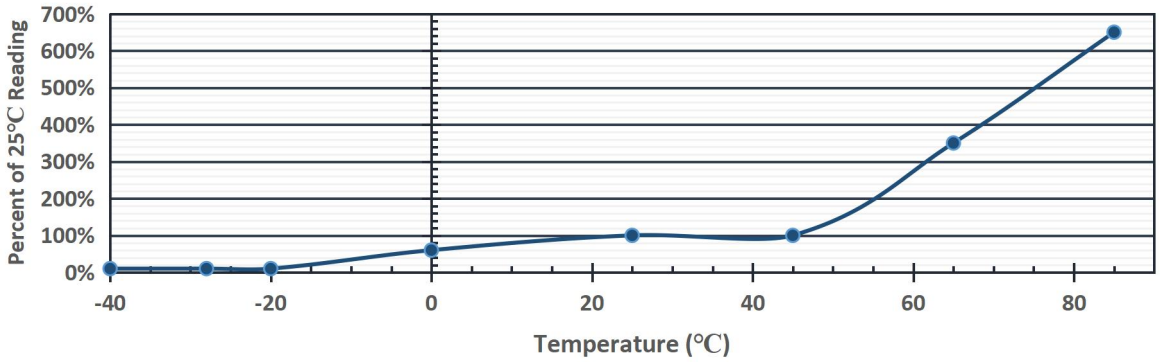
*P/N code A: Passive equalization / code W: Active equalization.

QUALITY AND RELIABILITY

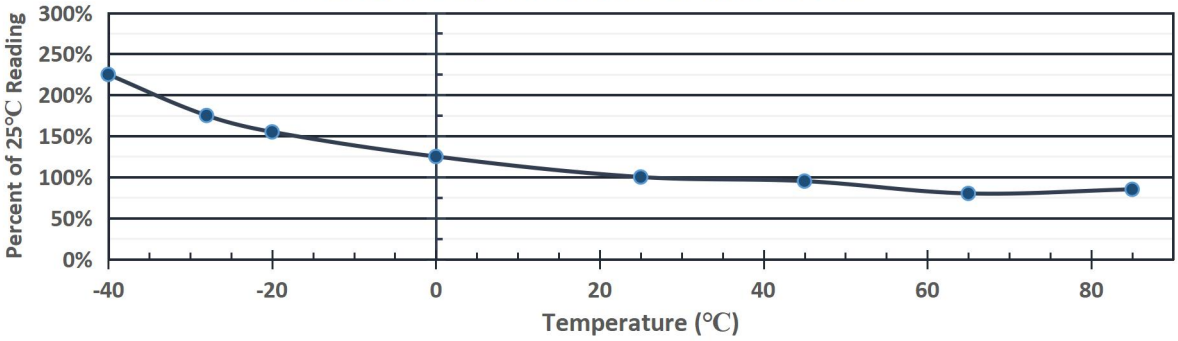
CAPACITANCE VS. TEMPERATURE



LEAKAGE CURRENT VS. TEMPERATURE



EQUIVALENT SERIES RESISTANCE VS. TEMPERATURE



LIFE TIME AND TEMPERATURE PERFORMANCE

The life of a Super Capacitor is impacted by a combination of operating voltage and the operating temperature according to the following equation :

$$L = L_0 \times 3.25^{\frac{T_0 - T}{10}} \times 1.52^{\frac{V_0 - V}{0.1}}$$

L : is the theoretical lifetime at T temperature;

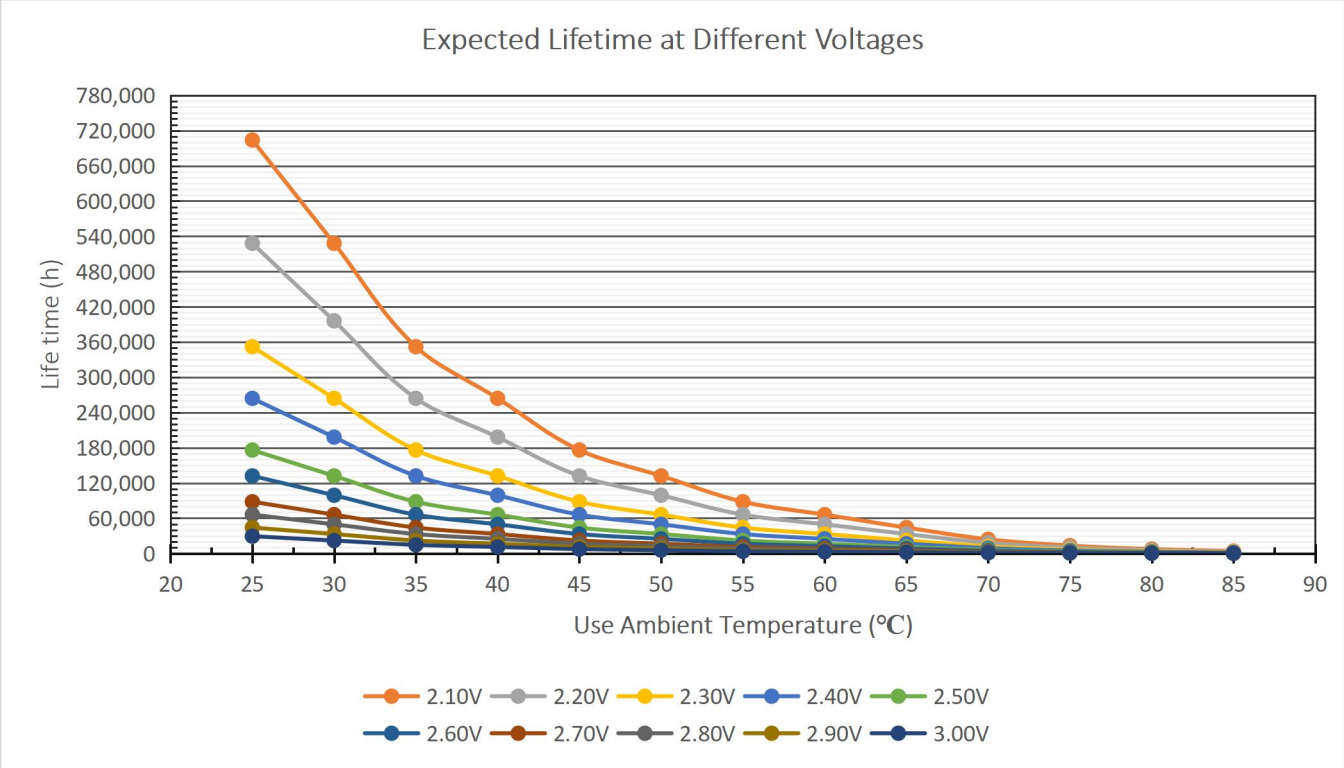
L_0 : is the working life of the highest rated working temperature;

T : is the actual working temperature;

T_0 : is the highest rated working temperature;

V : is the actual working voltage;

V_0 : is the highest rated working voltage.



*Note : Estimated lifespan: The estimated lifespan under different operating voltages and operating temperatures in a theoretical environment. For the actual service life, please contact us to discuss the working conditions.

SAFETY RECOMMENDATIONS ⚠

Danger - High pressure danger ⚠

• Do not touch the power terminals as the module may become electrified and cause a fatal electric shock.
• Before operating the module, please make sure to check whether it has been completely discharged.

"Electrical"

• To avoid arcs and sparks, the energy storage module should be in a discharged state, and the system power supply should be disconnected during the installation process. The module was discharged at the factory. Before making electrical connections, the short circuit should be removed.
• To provide the lowest possible equivalent series resistance (ESR DC), fuses are not used in the high-power current paths within the module. In practical applications, it is necessary to pay attention to preventing excessive current. Excessive current and/or abnormal duty cycle can cause the module to overheat, thereby resulting in irreparable damage. For current and duty cycle performance, please refer to the specific data sheet for each module.

Electrical Connections

• Modules should be connected in series or parallel using wires (or equivalent busbars) of the same gauge as the final output connection. When connected in series, connect the positive output terminal of one module to the negative output terminal of the next module. When connected in parallel, connect the positive and negative output terminals of one module or capacitor string to the positive and negative output terminals of the next module or capacitor string, respectively. When multiple modules are connected in series to operate at higher voltages, care must be taken to ensure that creepage times and clearances comply with national electrical equipment safety standards.
• When connecting modules in series and parallel, first connect the series capacitor banks in series.
Parallel connections are made at the endpoints of the series capacitor bank's negative-to-negative and positive-to-positive terminal terminals.

Thermal performance

The low internal resistance of the energy storage module makes the heat generated inside it relatively low during use. However, this module is only applicable to UPS/ backup power supply operation and is not suitable for high duty cycle operation. Sufficient time should be left between each cycle, depending on the working voltage, current, outdoor temperature and module temperature. Therefore, it is very important to monitor the temperature of the module through the monitoring connector.

Relevant certifications

- **MSDS**
- **RoHS Certification**
- **Reach Certification**

Transportation

Not applicable to the U.S. DOT or IATA regulations
UN3499, <10Wh, non-hazardous
International transportation description: "Electronic Products - Capacitors"

Storage requirements

The storage temperature range for capacitors is from -40°C to +70°C, with a humidity of less than 60%.A lower storage temperature is better because it can extend the shelf life of the capacitor.For products whose production date codes show that they are over one year old but less than two years old, It is recommended to recharge and activate for at least 24 hours before starting use.

Optimal storage conditions are as follows:

• Temperature 25°C, relative humidity ≤ 60%, with no voltage applied.
• Avoid direct sunlight.
• Avoid direct contact with water, salt, oil, or other chemicals.
• Avoid direct contact with corrosive substances, acids, alkalis, or toxic gases.
• Avoid storage in dusty environments.
• Avoid storage in environments subject to shock and vibration.

Safety ⚠

• Do not operate the device at voltages exceeding the specified voltage.
• Do not operate the device at temperature exceeding the specified rating.
• Do not touch the terminals with a conductor while energized; doing so may result in severe burns, electric shock, or melting of the material.
• Provide adequate electrical isolation when operating with voltages exceeding S0 VDC.
• Before installing or removing the module from equipment, ensure the safety of all personnel.

To discharge the module, follow these steps:

1) Use a voltmeter to measure the voltage between the two terminals.
2) If the voltage is higher than 2V, connect a resistor (not included with the module) between the terminals. Extreme care is required when designing and manufacturing these dissipative resistor components. For example, at 60V, for a 2-ohm component, the module will discharge at 30A, requiring 10-15 minutes for complete discharge. However, in this case, the heat/power dissipated in the resistor component is approximately 1.4kW. Appropriate dimensions and a suitable cooling system are required to handle this power dissipation. Furthermore, a suitable housing or other packaging is required to ensure safety. In all cases, the dissipative resistor component must be properly designed.
3) If the voltage is below 2V, the module is considered safe to operate. However, due to the low internal series resistance, high currents may flow if the terminals are short-circuited. Therefore, extreme caution is still required.

Soldering Precautions

When soldering supercapacitors to a PCB, the temperature and duration of the supercapacitor during the soldering process may negatively affect performance. We recommend the following guidelines:
• Do not immerse the supercapacitor in solder. Only the leads should be in contact with the solder.
• Ensure that the supercapacitor body never comes into contact with molten solder, the printed circuit board, or other components during the soldering process.
• Excessive temperatures or excessive temperature cycling during soldering may cause the safety valve to rupture, the housing to shrink, or crack, potentially damaging the PCB or other components and significantly shortening the capacitor's life.

Manual Soldering

Maintain a distance between the supercapacitor body and the soldering iron tip, and never allow the soldering iron tip to come into contact with the capacitor body. Contact between the supercapacitor body and the soldering iron tip can severely damage the supercapacitor and alter its electrical properties. It is recommended that the soldering iron temperature be below 350°C, and the contact time be limited to 4 seconds. Excessive heating of the terminals during soldering can transfer heat to the supercapacitor body, potentially damaging its electrical properties.