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	0.41F to 30F
Capacitance tolerance	-10% to +30%
Rated voltage	10.8VDC / 32.4 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

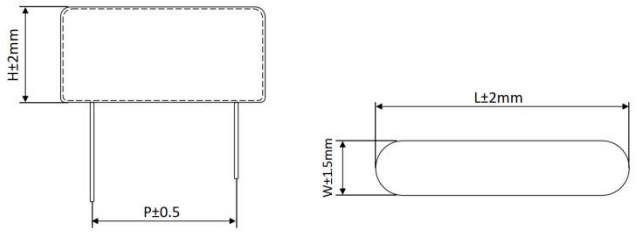
Casing Display:

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:2025-08-01

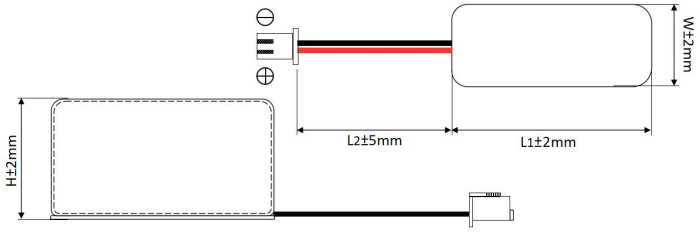
DIMENSIONS

DA Type



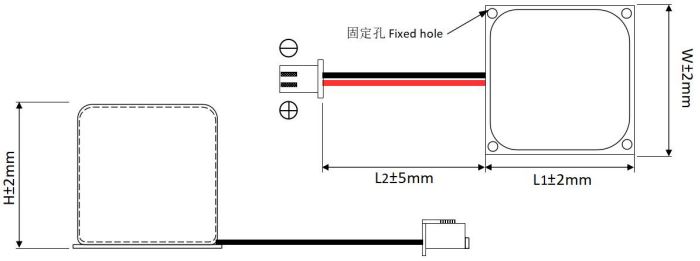
W	P(mm)				Φd
	10.8V	13.5V	16.2V	18V	
11	36	46.2	56.5	56.5	0.6
14	43.4	56.2	69	69	0.8
17	56.4	72.7	89	89	0.8
19	62.4	80.7	99	99	0.8

LA Type



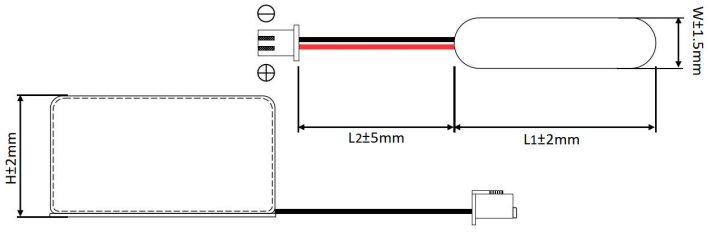
①Module type specification Applies to W: 22mm & 28mm		②Module type specification Applies to W: 34mm & 38mm	
Wire	UL3239 AWG20 - 75mm	Wire	UL3239 AWG16 - 75mm
Terminals	Molex Mini-Lock51163-0200	Terminals	JST VHR-2N
Terminal block pins	Molex 50752-8200	Terminal block pins	JST SVH-41T-P1.1
Male pin socket	Molex 53375-0210	Male pin socket	JST B2P-VH

XR Type



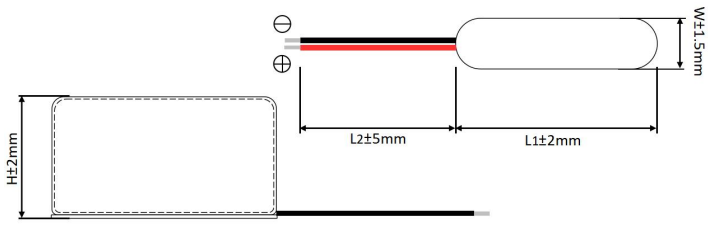
①Module type specification Applies to W: 45mm		②Module type specification Applies to W: 60mm & 66mm	
Wire	UL3239 AWG20 - 75mm	Wire	UL3239 AWG16 - 75mm
Terminals	Molex Mini-Lock51163-0200	Terminals	JST VHR-2N
Terminal block pins	Molex 50752-8200	Terminal block pins	JST SVH-41T-P1.1
Male pin socket	Molex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

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Spec. Date:2025-08-01

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)	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	0.033
CMZ1326S45510R8W	10.8	4.5	4	14	53	29	160	240	12.05	0.050
CMZ1625S55510R8W	10.8	5.5	4.9	17	65	28	100	152	18.20	0.068
CMZ1630S70510R8W	10.8	7	6.3	17	65	33	80	120	21.32	0.075
CMZ1635S85510R8W	10.8	8.5	7.6	17	65	38	80	120	23.05	0.080
CMZ1346S10610R8W	10.8	10	9	14	53	49	80	120	25.05	0.080
CMZ1835S11610R8W	10.8	11.25	10	19	73	38	72	108	25.96	0.088
CMZ1840S20610R8W	10.8	20.5	18	19	73	43	72	120	41.05	0.130
CMZ1860S25610R8W	10.8	25	22	19	73	63	52	80	45.76	0.240
CMZ1860S30610R8W	10.8	30	27	19	73	63	52	80	48.50	0.280
13.5V Series - Module										
CMZ1020S40413R5W	13.5	0.4	0.36	11	51	23	450	675	4.03	0.020
CMZ1020S10513R5W	13.5	1	0.9	11	51	23	375	565	4.32	0.015
CMZ1030S20513R5W	13.5	2	1.8	11	51	33	225	340	8.06	0.030
CMZ1320S30513R5W	13.5	3	2.7	14	66	23	225	340	10.06	0.040
CMZ1325S40513R5W	13.5	4	3.6	14	66	28	200	300	11.68	0.050
CMZ1335S44513R5W	13.5	4.4	3.9	14	66	38	150	225	15.88	0.060
CMZ1625S50513R5W	13.5	5	4.5	17	81	28	125	190	17.42	0.068
CMZ1630S56513R5W	13.5	5.6	5	17	81	33	100	150	21.32	0.075
CMZ1346S68513R5W	13.5	6.8	6.1	14	66	49	100	150	23.02	0.080
CMZ1346S80513R5W	13.5	8	7.2	14	66	49	100	150	24.55	0.080
CMZ1835S90513R5W	13.5	9	8.1	19	91	38	90	135	30.92	0.110
CMZ1840S12613R5W	13.5	12	11	19	91	43	75	115	34.47	0.150
CMZ1840S16613R5W	13.5	16.4	14	19	91	43	90	150	41.05	0.130
CMZ1860S20613R5W	13.5	20	18	19	91	63	65	100	45.76	0.240
CMZ1860S24613R5W	13.5	24	21	19	91	63	65	100	48.50	0.280
16.2V Series - Module										
CMZ1025S16516R2W	16.2	1.66	1.4	11	61	28	360	540	7.11	0.030
CMZ1320S25516R2W	16.2	2.5	2.2	14	79	23	270	408	10.06	0.040
CMZ1330S36516R2W	16.2	3.66	3.2	14	79	33	210	318	13.17	0.055
CMZ1630S46516R2W	16.2	4.66	4.1	17	97	33	120	180	21.32	0.075
CMZ1635S56516R2W	16.2	5.66	5	17	97	38	120	180	23.05	0.080
CMZ1835S58516R2W	16.2	5.83	5.2	19	109	38	108	162	25.96	0.088
CMZ1346S66516R2W	16.2	6.66	5.9	14	79	43	120	180	24.55	0.080
CMZ1840S75516R2W	16.2	7.5	6.7	19	109	43	96	144	30.68	0.105
CMZ1840S10616R2W	16.2	10	9	19	109	43	90	138	34.47	0.150
CMZ1840S13616R2W	16.2	13.66	12	19	109	43	108	180	41.02	0.130
CMZ1860S16616R2W	16.2	16.6	15	19	109	63	78	120	45.76	0.240
CMZ1860S20616R2W	16.2	20	18	19	109	63	78	120	48.50	0.280
18V Series - Module										
CMZ0622S55418R0A	18	0.55	0.495	7	40	25	540	1500	2.7	0.02
CMZ0825S83418R0A	18	0.83	0.747	9	50	28	420	1080	3.9	0.06
CMZ1030S16518R0A	18	1.6	1.44	11	60	32	240	480	8.2	0.10
CMZ1330S33518R0A	18	3.3	2.97	14	78	33	150	300	15	0.15
CMZ1630S58518R0A	18	5.8	5.31	17	98	34	120	240	21.9	0.22
CMZ1840S11618R0A	18	11.6	10.44	19	111	45	84	114	44.9	0.50
CMZ1860S16618R0A	18	16.6	14.94	19	111	65	72	96	57.6	0.50
CMZ1860S18618R0A	18	18.3	16.47	19	111	65	72	96	59.8	0.55
21.6V Series - Module										
CMZ1016S50421R6W	21.6	0.5	0.4	22	41	20	720	1080	4.03	0.020
CMZ1020S60421R6W	21.6	0.62	0.5	22	41	23	600	904	4.32	0.015
CMZ1030S12521R6W	21.6	1.25	1.1	22	41	33	360	544	8.06	0.030
CMZ1330S27521R6W	21.6	2.75	2.4	28	53	33	280	424	13.17	0.055
CMZ1630S35521R6W	21.6	3.5	3.1	34	65	33	160	240	21.32	0.075
CMZ1630S42521R6W	21.6	4.25	3.8	34	65	33	160	240	23.05	0.080
CMZ1346S50521R6W	21.6	5	4.5	28	53	49	160	240	24.55	0.080
CMZ1840S56521R6W	21.6	5.62	5	38	73	43	128	192	30.68	0.105
CMZ1840S75521R6W	21.6	7.5	6.7	38	73	43	120	184	34.47	0.150
CMZ1840S10621R6W	21.6	10.25	9.2	38	73	43	144	240	41.02	0.130
CMZ1860S12621R6W	21.6	12.5	11	38	73	63	104	160	45.76	0.240
CMZ1860S15621R6W	21.6	15	13	38	73	63	104	160	48.50	0.280

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Spec. Date:2025-08-01

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)	Leakage Current (72hrs/mA)
				W	L	H				
24V Series - Module										
CMZ1030S12524R0W	24	1.2	1	45	32	35	450	680	8	0.030
CMZ1625S27524R0W	24	2.7	2.4	60	50	30	230	345	17	0.065
CMZ1630S33524R0W	24	3.3	3	60	50	35	190	360	19	0.075
CMZ1635S38524R0W	24	3.8	3.5	60	50	40	180	380	24	0.095
CMZ1835Q55524R0W	24	5.5	5	66	56	40	170	250	30	0.110
CMZ1840S55524R0W	24	5.5	5	66	56	45	150	225	31	0.105
CMZ1840S66524R0W	24	6.6	6	66	56	45	140	210	35	0.150
CMZ1840S77524R0W	24	7.7	7	66	56	45	140	200	36	0.125
CMZ1840S91524R0W	24	9.1	8	66	56	45	140	200	38	0.140
CMZ1860S11624R0W	24	11.1	10	66	56	65	130	190	51	0.350
CMZ1860S13624R0W	24	13.3	12	66	56	65	130	190	52	0.280
27V Series - Module										
CMZ1020S50427R0W	27	0.5	0.45	22	51	23	600	900	5.80	0.020
CMZ1030S10527R0W	27	1	0.9	22	51	33	450	680	8.06	0.030
CMZ1330S22527R0W	27	2.2	2	28	66	33	350	530	13.17	0.055
CMZ1625S22527R0W	27	2.2	2	34	81	28	250	380	17.42	0.068
CMZ1630S28527R0W	27	2.8	2.5	34	81	33	200	300	21.32	0.075
CMZ1630S34527R0W	27	3.4	3	34	81	33	200	300	23.05	0.080
CMZ1346S40527R0W	27	4.0	3.6	28	66	49	200	300	24.55	0.080
CMZ1840S45527R0W	27	4.5	4	38	91	43	160	240	30.68	0.105
CMZ1840S60527R0W	27	6	5.4	38	91	43	150	230	34.47	0.150
CMZ1840S82527R0W	27	8.2	7.3	38	91	43	180	300	41.02	0.130
CMZ1860S10627R0W	27	10	9	38	91	63	130	200	45.76	0.240
CMZ1860S12627R0W	27	12	11	38	91	63	130	200	48.50	0.280
30V Series - Module										
CMZ0622S33430R0A	30	0.33	0.297	14	34	26	900	2500	2.7	0.04
CMZ0825S50430R0A	30	0.5	0.45	17	42	28	700	1800	3.9	0.06
CMZ1030S10530R0W	30	1	0.9	22	52	33	400	800	8.3	0.12
CMZ1330S20530R0W	30	2	1.8	28	66	34	300	500	15	0.25
CMZ1635S35530R0W	30	3.5	3.15	34	82	35	150	400	21.9	0.32
CMZ1840S70530R0W	30	7	6.3	38	92	45	150	190	45.1	0.9
CMZ1860S10630R0W	30	10	9	38	92	65	150	160	57.7	1.5
CMZ1860S11630R0W	30	11	9.9	38	92	65	120	180	61	1.7
32.4V Series - Module										
CMZ1020S41432R4W	32.4	0.41	0.36	22	61	23	900	1356	5.29	0.020
CMZ1030S83432R4W	32.4	0.83	0.74	22	61	33	540	816	8.06	0.030
CMZ1330S18532R4W	32.4	1.83	1.6	28	79	33	420	636	13.17	0.055
CMZ1630S23532R4W	32.4	2.33	2	34	97	33	240	360	21.32	0.075
CMZ1630S28532R4W	32.4	2.83	2.5	34	97	33	240	360	23.05	0.080
CMZ1346S33532R4W	32.4	3.33	3	28	79	49	240	360	24.55	0.080
CMZ1840S37532R4W	32.4	3.75	3.5	38	109	43	192	288	30.68	0.105
CMZ1840S50532R4W	32.4	5	4.5	38	109	43	180	276	34.47	0.150
CMZ1840S68532R4W	32.4	6.83	6.1	38	109	43	216	360	41.02	0.130
CMZ1860S83532R4W	32.4	8.33	7.4	38	109	63	156	240	45.76	0.240
CMZ1860S10632R4W	32.4	10	9	38	109	63	156	240	48.50	0.280

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

DESCRIPTION OF MODULE DESIGN

Cells separation	
Cells can be classified by capacitance, internal resistance, leakage current and self discharge to improve precision of the group matching, so as to improve the rel iability and stability of the module.	
Circuit design	
Function:	design by client's requirement.
Property:	design by client's applicat load characteristic.
Balance mode:	active and passive.
Detection:	cell's over-charge test, over temperature test, counter charging test, etc.
Communication mode:	designed according to client's requirement, such as mode of SPI、RS232、 RS485、CAN、12C、 SMBUS ethernet or optical fiber communication.
PCB:	sturdy, firm, low internal resistance, high over-current, good property of heat dissipation
Additional function:	monitoring voltage of every parallel module, calculate surplus capacitance of module, and even surplus capacitance and conditions of each cell.
Environmental compliance	RoHS, ,MSDS,REACH, lead free No restrictions, per UN3499 with all cells <10 watt-hours

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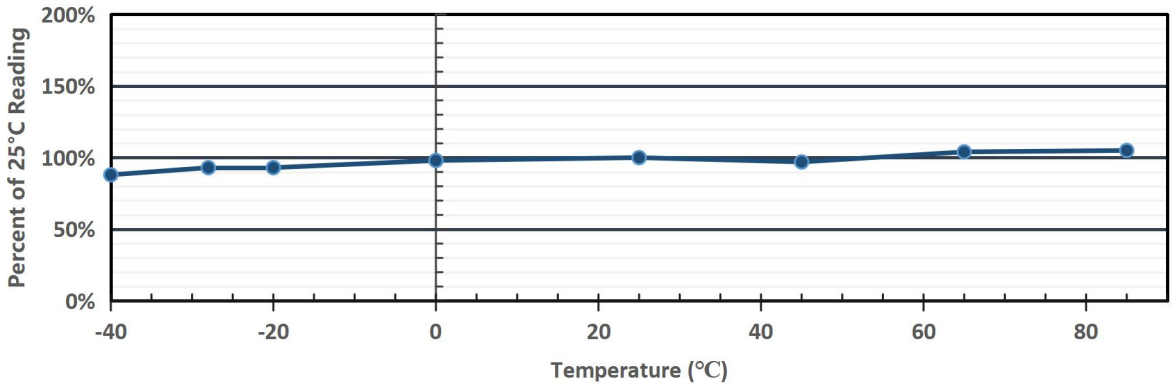
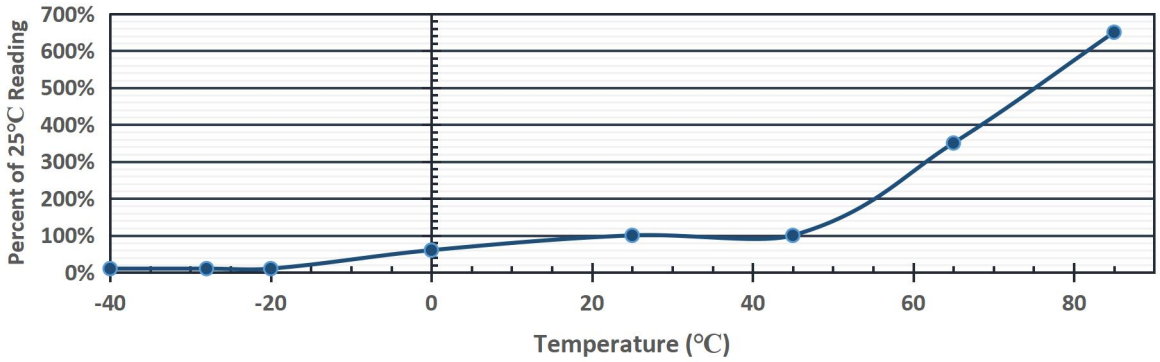
Spec. Date:2025-08-01

QUALITY AND RELIABILITY

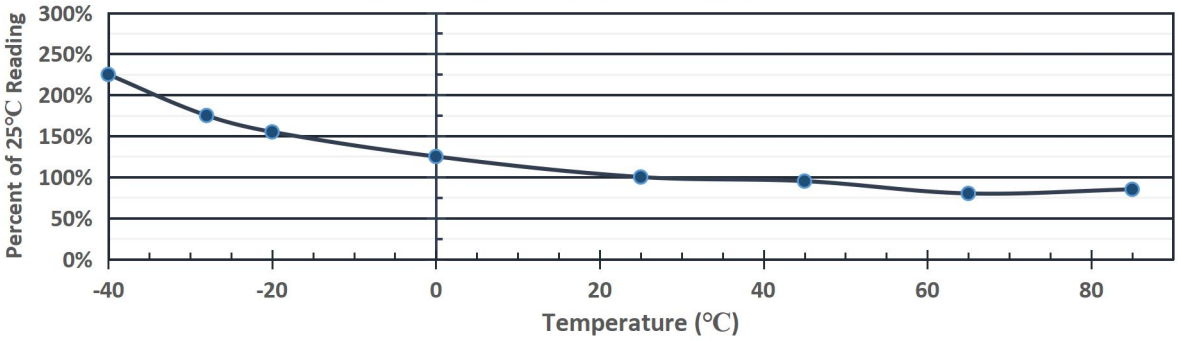
CAPACITANCE VS. TEMPERATURE



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;

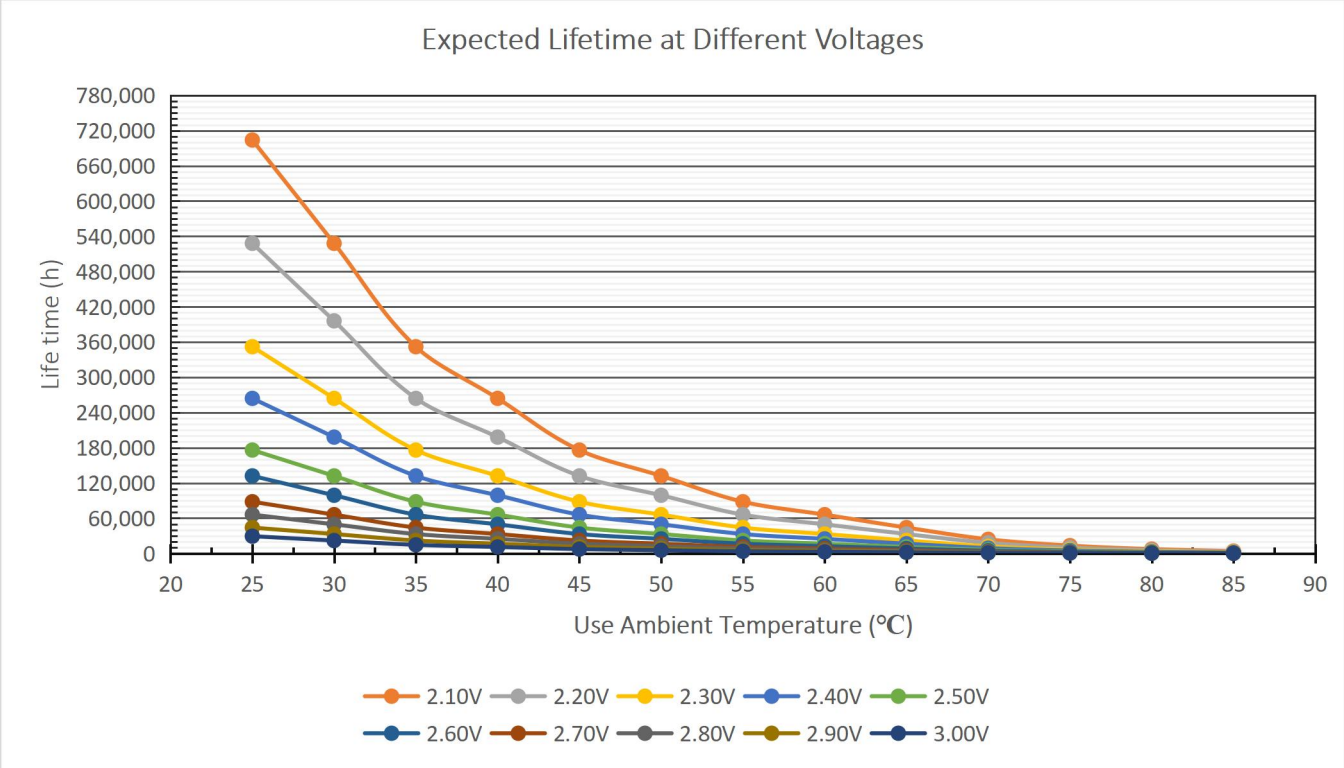
L_0 : is the working life of the highest rated working temperature;

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

WARNINGS

• To Avoid Short Circuit, after usage or test, SuperCapacitors voltage needs to discharge to ≤ 0.1V.
• Do not Apply Over-voltage, Reverse Charge, Burn or Heat Higher than 150°C, explosion-proof valve may break open.
• Do not Press, Damage or disassemble the SuperCapacitor, housing could heat to high temperature causing Burns.
• If you observe Overheating or Burning Smell from the capacitor disconnect Power immediately, and do not touch.

Emergency Handling

In case of leakage from the housing:
• Skin contact: Immediately clean the contacted area thoroughly with soap and water.
• Eye contact: Rinse with running water or normal saline, and seek medical attention immediately.
• Ingestion: Immediately rinse the contacted areas (such as the mouth) with water, and seek medical attention.

Precautions for Polarity and Reverse Voltage Usage

To ensure product consistency and optimal performance, it is recommended to use the capacitor in accordance with the marked polarity. Reverse polarity may cause permanent damage to the circuit, including a significant increase in leakage current within a short period of time, and will shorten the service life of the supercapacitor.

In practical applications, it is necessary to strictly confirm the connection in accordance with the circuit design and the polarity markings on the capacitor body (such as "+" and "-" symbols, differences in pin length, etc.) to avoid the application of reverse voltage.

REGULATORY

• MSDS
• RoHS Compliant
• Reach Compliant

TRANSPORTATION

Not subjected to US DOT or IATA regulations
UN3499, <10Wh, Non-Hazardous Goods
International shipping description –
"Electronic Products – Capacitor"

Storage Requirements

The storage temperature range of the capacitor is -40°C to +70°C, with a relative humidity of < 60%. Lower storage temperatures are preferable, as they can extend the capacitor's shelf life. For products where the production date code indicates storage duration of more than 1 year but less than 2 years, it is recommended to perform recharge activation for at least 24 hours before initial use.

Optimal Storage Conditions

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

PRECAUTIONS FOR WELDING

When soldering supercapacitors to a PCB, the temperature & time that the body of the supercapacitor sees during soldering can have anegative effect on performance. We advise following these guidelines:
• Do not immerse the supercapacitors in solder. Only the leads should come in contact with the solder.
• Ensure that the body of the supercapacitor is never in contact with the molten solder, the PCB or other components during soldering.
• Excessive temperatures or excessive temperature cycling during soldering may cause the safety vent to burst or the case to shrink or crack, potentially damaging the PCB or other com-ponents, and significantly reduce the life of the capacitor.

HAND SOLDERING

Keep distance between the supercapacitor body and the tip of the soldering iron and the tip should never touch the body of the capacitor. Contact between supercapacitor body and soldering iron will cause extensive damage to the supercapacitor, and change its electrical properties. It is recommended that the soldering iron temperature should be less than 350°C, and contact time should be limited to less than 4 seconds. Too much exposure to terminal heat during soldering can cause heat to transfer to the body of the supercapacitor, potentially damaging the electrical properties of the supercapacitor.

WAVE SOLDERING

Only use wave soldering on Radial type supercapacitors. The PCB should be preheated only from the bottom and for less than 60 seconds, with temperature at, or below, 100°C on the top side of the board for PCBs equal to or greater than 0.8 mm thick.

Solder Temperature (ºC)	Suggested Solder Time (s)	Maximum Solder Time (s)
220	7	9
240	7	9
250	5	7
260	3	5

Selective wave soldering		
Solder Temperature (ºC)	Suggested Solder Time (s)	Maximum Solder Time (s)
290	2	4

*Caution：For all products with PET sleeves, the use of any type of cleaning agent is prohibited for cleaning.
During all welding processes, it is recommended to protect the shrink film from contact with any liquids (including but not limited to: water, strong acids, strong alkalis, strong oxidizing solutions, and strong solvents), so as to avoid the risk of damage, cracking, and discoloration of the outer shrink film.