

# **FEATURES**

- Low leakage current, long life
- High power, high energy density
- Small size and low-resistance
- Long cycle life,maintenance-free
- REACH,RoHS Directive Compliant

## **APPLICATIONS**

• Consumer electronics, Industrial and Automation

Portable Power Tools ,Renewable Energy Storage Systems

Short Term UPS (Uninterruptible Power Supply).

## **GENERAL SPECIFICATIONS**

Item	Performance					
Operating temperature	-40°C to +70°C					
Capacitance range	0.1F to 12F					
Rated voltage	10.8 V/11 V/12 V					
	Capacitance change: Within ±30% of initial measured value at +25°C					
remperature characteristics	Internal resistance: Within ±200% of initial measured value at +25°C					
	After 70°C 1000 hours :					
High temperature load time	Capacitance change: ±30% of initial rated value					
	Internal resistance: Within 2 times of initial specified value					
Projected cycle life	After 500,000 cycles:					
(From rated voltage to 1/2 rated	Capacitance change: Within ±30 % of initial rated value					
voltage at 25°C)	Internal resistance: Within 2 times of initial specified value					
	Relative humidity: 90%~95% /Duration of testing:240 hrs /Temperature:40±2°C					
Humidity characteristic	Capacitance change: Within ±30 % of initial rated value					
	Internal resistance: Within 2 times of initial specified value					
	Amplitude:1.5mm /Frequency:10~55Hz /Duration: X,Y,Z(2 hrs)/Duration of testing:6 hrs					
Vibration resistance	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

<u>CPM</u>	<u>10R8</u>	L	<u>105</u>	<u>R</u>	<u>w</u>	**	**
Series	Rated Voltage	Connection Code	Capacity Code	Environmental Code	MFG Code	Special Code	PIN Code
Casing I	Display:						

No. 4, Jifeng Road, Wufeng District, Taichung City, Taiwan. TEL:+86-852-51245795 www.cda-cap.com E-MAIL: zfw@cda-cap.tw Specifications are subject to change without notice.Should a safety or technical concern arise regarding the product, please be sure to contact our sales offices or agents immediately.









**CPM Series** 

## DIMENSIONS



# **STANDARD PRODUCTS**

Dent Name on	Working Voltage (V DC)	Rated Cap. (F)	Dimensions (mm)		ions )	Max.ESR		Maximum	Maximum	Maximum
Part Number			w	D	L	ESRAC (1kHz/mΩ)	ESRDC (mΩ)	Leakage (72hrs/mA)	Peak Current (A)	Energy (W.h)
CPM-10R8L224R-TW	10.8	0.22	14	18	18	640	960	0.008	1.09	0.0036
CPM-10R8L504R-TW	10.8	0.5	14	18	18	400	1120	0.012	1.70	0.0081
CPM-10R8L804R-TW	10.8	0.8	22	18	18	400	600	0.012	2.98	0.013
CPM-10R8L125R-TW	10.8	1.2	27	18	18	360	540	0.017	4.03	0.0194
CPM-10R8L125R-TWX	10.8	1.2	22	21	21	300	452	0.017	4.32	0.0194
CPM-10R8L175R-TW	10.8	1.7	27	18	18	360	540	0.017	4.86	0.0275
CPM-10R8L175R-TWX	10.8	1.7	22	21	21	300	450	0.020	5.29	0.0275
CPM-10R8L255R-TW	10.8	2.5	32	18	18	200	300	0.032	7.11	0.0405
CPM-10R8L255R-TWX	10.8	2.5	27	21	21	260	400	0.032	6.84	0.0405
CPM-10R8L355R-TW	10.8	3.5	27	27	27	160	240	0.052	10.66	0.0567
CPM-10R8L505R-TW	10.8	5	27	27	27	120	240	0.062	13.50	0.0810
CPM-10R8L106R-TW	10.8	10	47	27	27	80	180	0.082	23.68	0.1620
CPM-10R8L126R-TW	10.8	12	52	27	27	72	140	0.120	28.72	0.1944
CPM-11R0L105R-TW	11	1	22	22	22	140	200	0.062	14.50	0.0168
CPM-12R0L224R-TW	12	0.22	14	18	18	640	960	0.080	1.21	0.0044
CPM-12R0L504R-TW	12	0.5	14	18	18	520	1100	0.080	1.15	0.0100
CPM-12R0L804R-TW	12	0.8	22	18	18	400	1120	0.014	3.31	0.016
CPM-12R0L125R-TW	12	1.2	27	18	18	360	540	0.017	4.48	0.024
CPM-12R0L175R-TW	12	1.7	27	18	18	320	640	0.020	3.98	0.034
CPM-12R0L255R-TW	12	2.5	27	21	21	220	330	0.032	8.22	0.050
CPM-12R0L355R-TW	12	3.5	27	27	27	120	180	0.050	13.43	0.070
CPM-12R0L505R-TW	12	5	27	27	27	140	180	0.052	13.64	0.100
CPM-12R0L605R-TW	12	6	37	27	27	104	170	0.090	18.99	0.120
*operating temperature can be extended to 85 °C with appropriate voltage										

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# **QUALITY AND RELIABILITY**









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# 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<sub>0</sub>: 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.

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### SAFETY RECOMMENDATIONS

#### WARNINGS

• To Avoid Short Circuit, after usage or test, SuperCapacitors voltage needs to discharge to  $\leq 0.1 V$  .

 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.

#### 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"

### PRECAUTIONS FOR WELDING

When soldering supercapacitors to a PCB, the temperature & time that the body of the supercapacitor sees during soldering can have a negative 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.

**CPM Series** 

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

#### **REFLOW SOLDERING**

Infrared or conveyor over reflow techniques can be used on these supercapacitors. Do not use a traditional reflow oven with-out clear rated reflow temperature for supercapacitors.