



# Product Specification Approval Sheet

Product Type: Coin Type Super Capacitor

SE-5R5-474ZC/H/V

Prepared by	Checked by	Approved by

Customer Approval	Signature	Date
	Company Name:	
	Company Stamp:	

## Shanghai Green Tech Co.,Ltd.

Add.: 302 No.7,Lane618 Qingtong Rd. Zhangjiang

Pudong New District,201203 Shanghai China

Tel. : +86-21-61054732

Fax.: +86-21-61054732-808

E-mail: [sales@greentechee.com](mailto:sales@greentechee.com)

Website: [www.greentechee.com](http://www.greentechee.com)

GT Confidential



## 1. SCOPE

This product specification has a regulation on product performance and test methods, can be a norm for technology confirmation.

## 2. General Specification

### 2.1 Application Scope:

The product can used as back-up power in electronic devices, such as RAM, intelligent meter, motor driver, clock circuit, electronic toys, etc.

### 2.2 Standard Test Conditions:

In general condition, test conducted under standard atmosphere pressure, temperature between 5°C~35°C and relative humidity below 85%. By this specification, the standard test condition is under standard atmosphere pressure, temperature at 25°C and relative humidity below 60%.

### 2.3 Executive Standard

IEC 62391-1 《Fixed electric double-layer capacitors for use in electronic equipment –Part 1:Generic specification》  
Q/KMNY001-2009 "Electrochemical Capacitor"

## 3. Product Structure

The product is an Electrical Double-Layer Capacitor, with activated charcoal inside be positive and negative pole. electrodes separated by electrolyte and separator , stainless steel case, the two electrodes leaded out in the same side.



4. General Characteristics

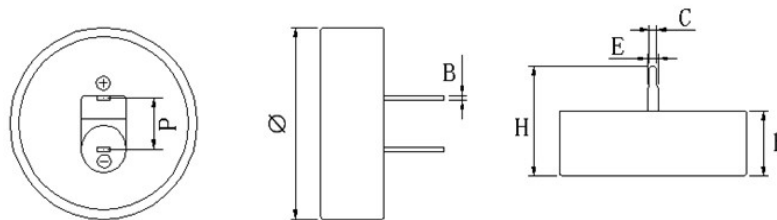
No.	Testing Items	Criteria	Testing Methods
1.1	Rated voltage(V)	5.5V	
1.2	Rated discharge capacitance	0.47F	Standard charge model, then discharge to 0.1V at rated current; Repeat 20 time $C = I \Delta t / \Delta V$ , $\Delta V = 1.50 \sim 1.25V$ in the fifth discharge
1.3	Capacitance tolerance	-20%~+80%	
1.4	Max. work voltage	6.0V	
1.5	Leakage current Max ( $\mu A$ )	150 $\mu A$	
1.6	ESR Max ( $\Omega$ )	20 $\Omega$	
1.7	Work temperature range	-25 $^{\circ}C \sim +70^{\circ}C$	
1.8	Storage temperature range	-40 $^{\circ}C \sim +85^{\circ}C$	

5. Environmental Characteristics

No.	Items	Specification/Condition
01	Temperature characteristics	$ \Delta C/C  \leq 30\%$ , ESR $\leq$ specified ESR(25 $^{\circ}C$ ) at +70 $^{\circ}C$ $ \Delta C/C  \leq 50\%$ , ESR $\leq$ 4 times of specified ESR (25 $^{\circ}C$ ) at -25 $^{\circ}C$
02	High temperature load characteristics	$ \Delta C/C  \leq 30\%$ , ESR $\leq$ 4 times of specified ESR (25 $^{\circ}C$ ) at +70 $\pm 2^{\circ}C$ /1000hrs/rated voltage
03	High temperature storage characteristics	$ \Delta C/C  \leq 30\%$ , ESR $\leq$ 2 times of specified ESR (25 $^{\circ}C$ ) at +70 $\pm 2^{\circ}C$ /1000hrs/standby after fully charge
04	Humidity Resistance	+40 $^{\circ}C \pm 2$ , 90--95%RH, 240h, $ \Delta C/C  \leq 30\%$ , IL $\leq$ 2 times of specified leakage current, ESR $\leq$ 4 times of specified ESR (25 $^{\circ}C$ )

6. Product Dimensions

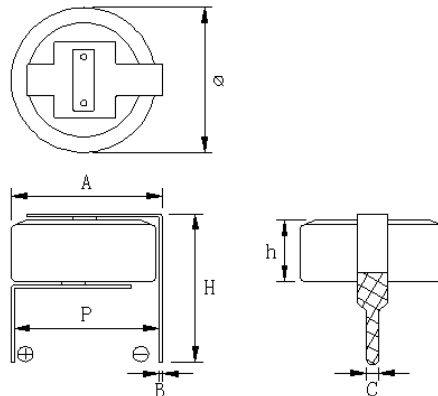
Type C



Items	Criteria	Items	Criteria
Φ	20.5 $\pm 0.5$ mm	B	0.5 $\pm 0.01$ mm
h	7.5 $\pm 0.5$ mm	C	0.8 $\pm 0.1$ mm
P	6.0 $\pm 0.5$ mm	E	1.2 $\pm 0.1$ mm
H	12.5 $\pm 0.5$ mm		

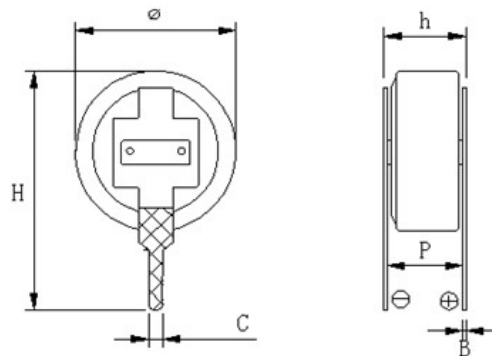


### Type H



Items	Criteria	Items	Criteria
$\Phi$	18.5±0.5 mm	H	10.2±0.5 mm
A	18.8±0.5 mm	B	0.2±0.05 mm
h	5.7±0.2 mm	C	0.8±0.1 mm
P	17.5±0.5 mm		

### Type V



Items	Criteria	Items	Criteria
$\Phi$	18.5±0.5 mm	H	23.5±0.5 mm
h	4.5±0.5 mm	B	0.2±0.05 mm
P	4.5±0.5 mm	C	0.8±0.1 mm



## 7. Handling Precautions and Guidelines

For safety application, please contact GT directly for any technical specifications, handling precautions and guidelines critical to application.

### 7.1 Precautions

(1) Prohibition of disassembly

The disassembling may generate internal short circuit in the cell, which may cause gassing, leakage, explosion, or other problems.

Electrolyte is harmful: In case the electrolyte come into contact with the skin, or eyes, physicians shall flush the electrolyte immediately with fresh water and medical advice is to be sought.

(2) Prohibition of dumping of cells into fire

These may cause explosion of the cells, which is very dangerous and is prohibited.

(3) Prohibition of cells immersion into liquid

The cells shall never be soaked with liquids such as water, seawater, drinks such as juices, coffee or others.

(4) Prohibition of use of damaged cells

The cells might be damaged during shipping by shock. If any abnormal features of the cells are found such as damages in the cell package, smelling of an electrolyte, an electrolyte leakage and others, the cells shall never be used any more.

The Cells with a smell of the electrolyte or a leakage shall be placed away from fire to avoid firing or explosion.

### 7.2 Application Guidelines

(1) It is not suitable that cell is used under such conditions: AC circuit and wave filtering.

(2) Work voltage of cell should not exceed Max. work voltage of cell during using. Otherwise, will shorten shelf life, even cause swelling, leakage or crack..

(3) Please check the polarity before using. If working under reverse polarity, cell will not only shorten shelf life, but also heavy damage, such as swelling, electrolyte leakage etc.

(4) Environment

Work temperature will have an influence on shelf life of cell. As usual, higher work temperature will shorten shelf life. So, it is better that cell works under as possible as low environmental temperature.

Work temperature of cell should consider internal work temperature in the unit and temperature rise when cell works.

(5) IR drop

When main power sources shut down, cell will change into work mode from failure mode, at the same time, OCV will decrease due to IR drop. So please choose proper product type according to impedance specified in product datasheet and applied current.

(6) Cells in series connection

When cells in series connection for higher work voltage, it should be assured that work voltage of any single cell must not exceed Max. work voltage of single cell, otherwise, will shorten shelf life, even cause swelling, leakage or crack.

(7) Soldering

Heat shock will decrease electric performance of cell, even cause swelling, leakage or crack.

Soldering temperature should not exceed 230°C, soldering time should not exceed 5s.

Please don't use reflow soldering of infrared heating and air heating.



8. GT Part NO.

<u>S</u>	<u>□</u>	<u>□ □ □</u>	<u>□ □ □</u>	<u>□</u>	<u>□</u>
Super	Series	Rated Voltage	Capacitance	Tolerance	Leads Type
Capacitor	Code Series	Code Voltage	Code Value (F)	Code TOL.	Code Leads
	P Power	2R5 2.5V	104 0.1	J ±5%	H Coin H
	E Energy	2R7 2.7V	224 0.22	K ±10%	V Coin V
	LR Low ESR	3R3 3.3V	334 0.33	M ±20%	C Coin C
	M Module	5R0 5.0V	474 0.47	U -10%~20%	L Radial leads
		5R5 5.5V	105 1.0	V 10%~30%	S Screw terminal
		6R3 6.3V	155 1.5	Z -20%~80%	
		12 12V	205 2.0		
		24 24V	335 3.3		
		36 36V	475 4.7		
			805 8.0		
			106 10		
			206 20		
			306 30		
			506 50		
			107 100		
			158 1500		
			308 3000		

9. How to order

Model: SE-5R5-474ZC/H/V

Version: R2.0

The customer is requested to write down your information and contact GT in advance, if and when the customer needs applications or operating conditions other than those described in this document. GT could design and build such products according to your special request.

No.	Special Request	Criteria
1		
2		
3		

Company Name: \_\_\_\_\_ E-mail: \_\_\_\_\_ Signature: \_\_\_\_\_ Date : \_\_\_\_\_