



Shanghai Green Tech Co.,Ltd.

(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 (μA)	150μA	
1.6	ESR Max (Ω) AC@1KHz	20Ω	
1.7	Work temperature range	-25°C~+70°C	
1.8	Storage temperature range	-40°C~+85°C	

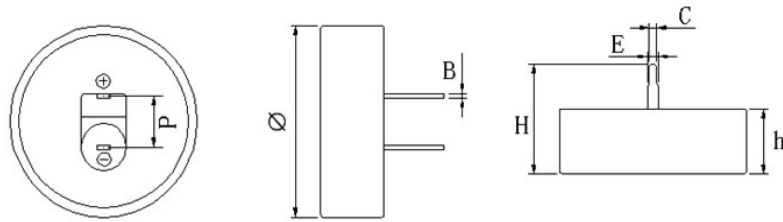
5. Environmental Characteristics

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



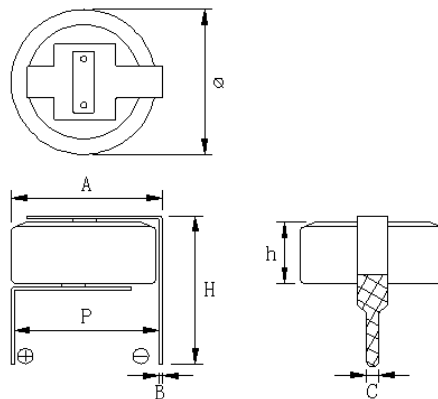
6. Product Dimensions

Type C



Items	Criteria	Items	Criteria
Φ	13.5±0.5 mm	B	0.5±0.01 mm
h	6.5±0.5 mm	C	0.8±0.1 mm
P	5.0±0.5 mm	E	1.2±0.1 mm
H	14.5±0.5 mm		

Type H



Items	Criteria	Items	Criteria
Φ	11.5±0.5 mm	H	9.2±0.5 mm
A	12.5±0.5 mm	B	0.2±0.05 mm
h	4.5±0.2 mm	C	0.8±0.1 mm
P	10±0.5 mm		

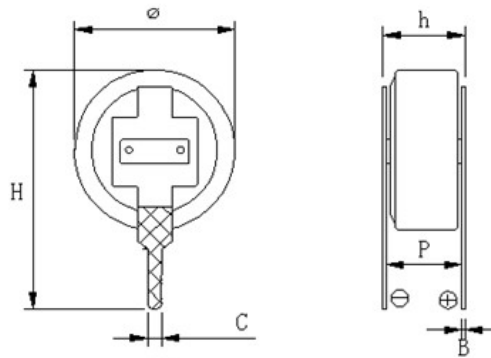


# Button Super Capacitor

## GTSE-5R5-474ZC/H/V

SE series

Type V



Items	Criteria	Items	Criteria
Φ	11.5±0.5 mm	H	17.5±0.5 mm
h	5.5±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.



GTSE-5R5-474ZC/H/V

8. GT Part NO.

<b>GT</b>	<b>S</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Brand	Super capacitor	Series	Rated Voltage		Capacitance		Tolerance		Terminal Type
Green Tech		Code Series	Code Voltage	Code Value (F)	Code Tolerance	Code Terminal			
		P Power	2R5 2.5V	104 0.1	J ±5%	H Horizontal			
		E Energy	2R7 2.7V	224 0.22	K ±10%	V Vertical			
		M Module	3R3 3.3V	334 0.33	M ±20%	C Coin			
		PP Big P	5R0 5.0V	474 0.47	U -10%~20%	R Radial			
		ML Military	5R5 5.5V	105 1.0	V 10%~30%	T Thread			
			6R3 6.3V	155 1.5	Z -20%~80%	N Snap in			
			012 12V	205 2.0		W Weldable			
			016 16V	335 3.3		P Pillar			
			024 24V	475 4.7		S Screw in			
			036 36V	805 8.0		L Waire			
			048 48V	106 10					
			056 56V	206 20					
			075 75V	306 30					
			100 100V	506 50					
			120 120V	107 100					
			240 240V	158 1500					
				308 3000					

9. How to order

Part number: GTSE-5R5-474ZC/H/V

Version: R5.0

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 : \_\_\_\_\_