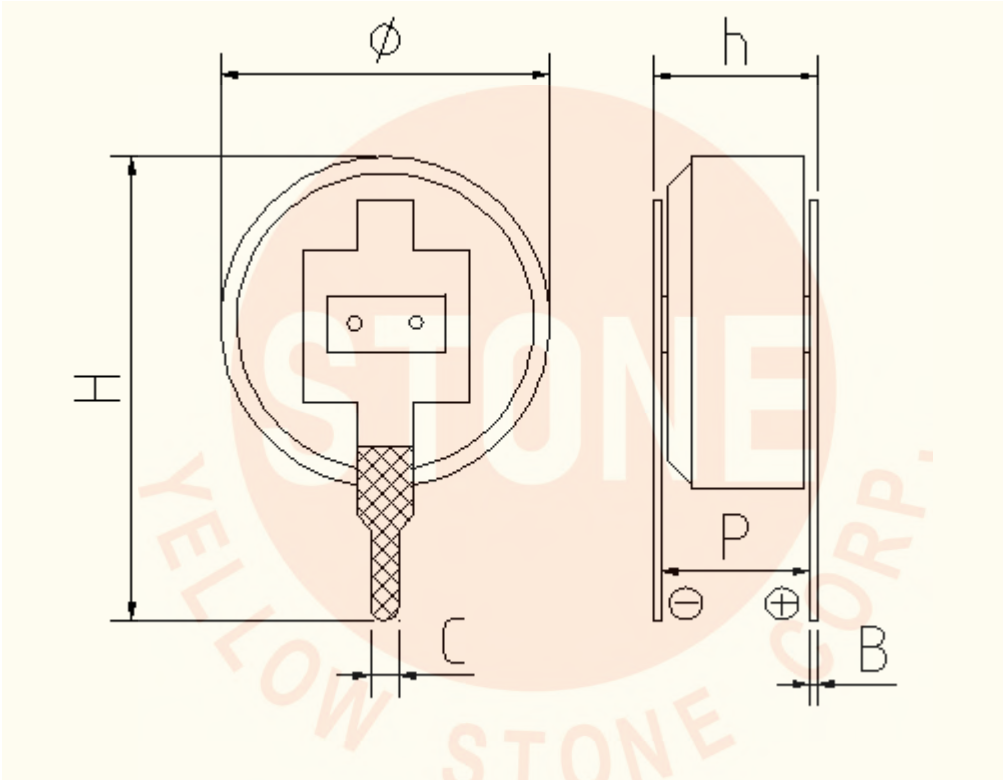
1. Dimensions



Item	Standard	Item	Standard
Φ	9.80±0.5 mm	H	15.00±0.5 mm
B	0.20±0.05 mm	h	4.20±0.2 mm
C	0.80±0.1 mm	P	4.50±0.5 mm

2. General Characteristics

1	Product Model	GC-5R5V104
2	Rated Discharge Capacity (F 25℃ ΔV=3V-2.5V I=0.01A)	0.10F
3	Capacitance Tolerance	-20%～+80%
4	Rated Voltage	5.5
5	Operating Temperature Range	-25℃~70℃
6	Maximum Equivalent Series Resistance ESR(mΩ 1KHz)	3000
7	Cycle Life	100,000 charge-discharge cycles at rated voltage, normal temperature. ｜△C/C ｜≤30%,ESR ≤4 times initial value (25℃)

3. Environmental Performance Indicators

Item		Specification/Conditions
1	Temperature Characteristics	At +70℃｜△C/C｜≤30%，ESR≤ specified value (25℃) At -25℃｜△C/C｜≤50%，ESR≤ 4 times initial value（25℃）
2	High-Temperature Load Characteristics	+70℃±2 applied rated voltage for 1000 hours｜△C/C｜≤30%，ESR≤ 4 times specified value
3	High-Temperature Characteristics	+70℃±2，1000±4 hours，｜△C/C｜≤30%，ESR≤2 times specified value
4	Damp Heat Load Characteristics	+40℃±2，90--95%RH，240h，｜△C/C｜≤30%,IL≤2 times specified value, ESR≤4 times specified value

4. Appearance Inspection

No visible defects that affect capacitor performance, such as cracks, fractures, or leakage, are allowed.

5. Standard Test Conditions

Tests are conducted under standard atmospheric pressure, at a temperature of 5 – 35℃, and relative humidity below 85%. The standard test conditions in this specification are atmospheric pressure, a temperature of 25℃, and relative humidity below 60%.

6. Test Methods

6.1 Capacitance Test Method (Constant Current Discharge Method)

1）Switch S is set to a constant current/constant voltage source, charging the capacitor at 10mA/F.

2）Once the capacitor reaches the rated voltage U_R, it undergoes constant voltage charging for 30 minutes.

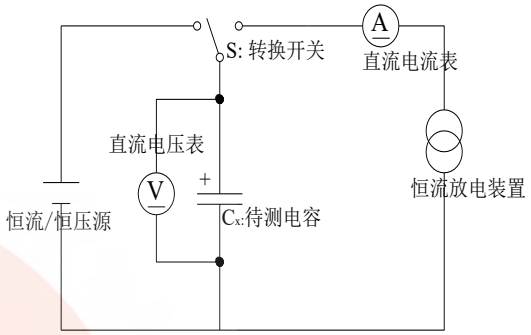


Figure 1. Capacitance Test Circuit.

3）After 30 minutes, switch S is set to a constant current discharge circuit at 10mA/F.

Measure the times t1 and t2 from the start of discharge until the voltage across the capacitor reaches U1 and U2, respectively, as illustrated in Figure 2. The capacitance is calculated using the following formula:

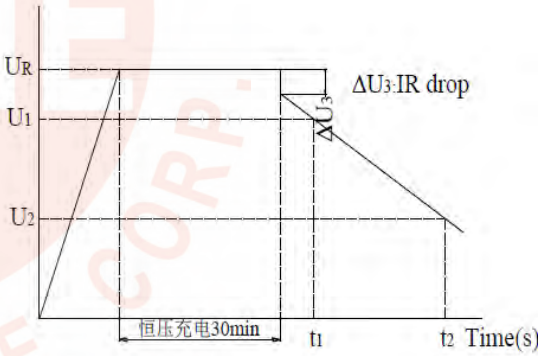


Figure 2. Charge and Discharge Curve Diagram.

$$C = \frac{I \times (t_2 - t_1)}{U_1 - U_2}$$

Where: C: Capacitance（F）

I：Discharge current (A)

t_1：The time in seconds from the start of discharge until the voltage reaches U_1（s）

t2：The time in seconds from the start of discharge until the voltage reaches U_2（s）

U_1：The initial measurement voltage（V）

U2：The final measurement voltage（V）

6.2 Internal Resistance Measurement

6.2.1 DC Resistance Calculation

$$R_{DC} = \frac{U_3}{I}$$

Where：R_{DC}：DC resistance（Ω）

U_3：Voltage drop (V) during a 10 ms constant current discharge.

I： Constant current discharge current (A).

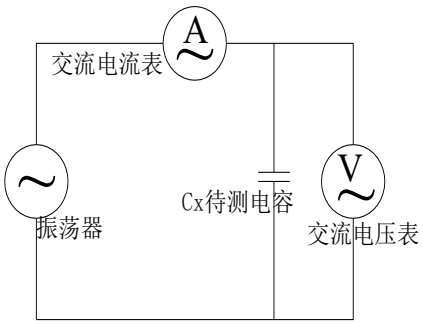


Figure 3. AC Impedance Test Circuit Diagram.

6.2.2 AC Impedance Test Method

AC impedance is measured using an LCR bridge with a measurement voltage frequency of 1 KHz.

The AC internal resistance of the supercapacitor, R_{AC}, is calculated using the following formula:

$$R_{AC} = \frac{U}{I}$$

Where：R_{AC}：AC resistance（Ω） U：RMS value of the AC voltage（V r.m.s）
I：RMS value of the AC current（A r.m.s）

6.3 Leakage Current Measurement

1）Fully discharge the capacitor (for at least 1 hour).

2）Apply the rated voltage across the capacitor terminals U_R;

3）After the supercapacitor's voltage reaches the rated voltage U_R,
measure the voltage U_V across the series protective resistor at 30 minutes, 12 hours, 24 hours, and 72 hours.

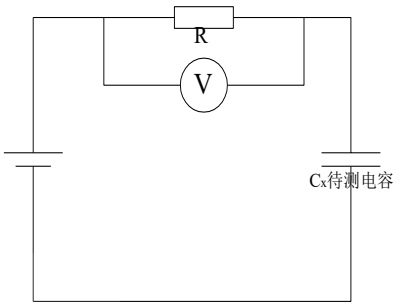


Figure 4. Leakage Current Test Circuit Diagram.

Leakage current (LC) is calculated as：

$$LC = \frac{U_V}{R} \times 10^3 mA$$

Where: LC：Leakage current（mA）
U_V：Voltage across the series protective resistor (V)
R：Protective resistor (typically <1000Ω)

7. Product Naming Rules

G □ □□□ □ □□□

Capacity Code：105 = 1F

Lead Type Code：V type, H type, C type

Voltage Code：5R5 = 5.5V

Shape Code: R for Cylindrical (Rotundity), C for Coin-type, P for Prismatic

Product Code：G for Dyna Capacitor

8. Storage Conditions

Capacitors should be stored in a dry, cool environment under standard test conditions. For long-term storage (over 3 months), perform a charge-discharge cycle every three months.

9. Precautions & Usage Guidelines

9.1 Precautions

(1) Do not disassemble the capacitor; disassembling it may cause an internal short circuit, leading to gas generation and electrolyte leakage. The electrolyte is hazardous—if it contacts the skin or eyes, rinse immediately with water

and seek medical attention.

(2) Do not expose the capacitor to fire, as this may result in an explosion.

(3) Do not immerse the capacitor in any liquid, such as water, saltwater, or beverages like juice, coffee, etc.

(4) Do not use a damaged capacitor. If you notice that the capacitor’s outer packaging is cracked, detect an odor of electrolyte, observe electrolyte leakage, or any other abnormal condition before use, do not continue using it.

9.2 Usage Guidelines

(1) Not for use in AC circuits or filtering applications.

(2) Do not exceed the rated voltage to prevent swelling, leakage, or rupture

(3) Check polarity before use to prevent damage.

(4) Operating temperature affects lifespan—keep as low as possible.

(5) Avoid thermal shocks exceeding the specified range.

(6) Ensure voltage balance when using in series.

(7) Soldering temperature should not exceed 230℃ for more than 5 seconds. If the tip of the soldering iron touches the capacitor’s outer casing, it will cause the casing to melt or crack. When using an oven or similar equipment to preheat the capacitor and cure adhesives, do not set the temperature above 150° C; otherwise, the capacitor’s outer casing may crack and the bottom sealing part may deform. Do not use infrared heating or air heating methods for reflow soldering the capacitor.

10. Warranty & Product Liability

- The warranty period is **6 months from the manufacturing date**.
- The manufacturer is **not responsible** for failures due to improper use or unauthorized modifications.
- No liability for damage caused by incorrect charging, improper grouping, or external influences.
- Product specifications are subject to change without prior notice.