

SPECIFICATION FOR APPROVAL

(Model) : SMJ-MC

(Spec.) : 0.68uF±10% 2000V.AC

(Size) : φ40×120

| Version | Description | Date |
|---------|-------------|------------|
| A/0 | | 2022-11-29 |

1. Purpose and scope of application

1.1. Purpose

This document is provided by the supplier to the buyer to describe product design, production, inspection, and quality control, and also serves as the basis for the buyer to purchase, site inspection, test verification, and define quality responsibilities.

This agreement applies to capacitors used in damping absorption circuits.

2. Product technical characteristics

- a) The product adopts non-inductive rolling technology, with low equivalent inductance.
- b) High vacuum impregnation treatment, low loss, and resistance to low temperature.
- c) Foil structure, strong inrush current resistance, and resistance to high current impact.
- d) There is no self-healing failure problem, and the capacity is stable and does not decay.
- e) After high-vacuum impregnation treatment, it can deoil and inject gas to realize the oil-free product.
- f) An explosion-proof device can be installed to achieve certain explosion-proof function of the product.
- g) The insulator is made of new polymer composite material, which has high strength, fatigue resistance and excellent electrical performance.

3. Condition of use

- a) Indoor installation and use.
- b) Permissible storage temperature range: -25~85.
- c) Long-term operating temperature: -10~+60°C.
- d) Long-term operating humidity: less than 95%RH.
- e) There is no serious corrosive gas or vapor around.
- f) There is no strong mechanical vibration in the installation place.
- g) There are no flammable and explosive materials around the installation environment.
- h) The harmonic content of the installation site should meet the requirements of relevant national standards.
- i) The maximum allowable overvoltage at the installation site shall meet the requirements of relevant national standards.
- j) The switch should have no heavy breakdown (reignition of arc).
- k) Altitude: no more than 1000m (for areas higher than 1000m, please choose plateau type products).

4. Function and performance description

4.1. Function description

This product is used in power electronic equipment and can operate continuously under non-sinusoidal current and voltage, and plays the role of semiconductor switching, protection, filtering and energy storage.

4.2. Performance description

The main performance description are shown in Table 1.

Table 1 Technical Data

| No. | Item | Data | Remark |
|-----|------------------------------------|----------------------|--------|
| 1 | Nom.capacitance C_N | 0.68 μ F | |
| 2 | Cap.Tol | $\pm 10\%$ | |
| 3 | Rated AC voltage U_N | 2000VAC | |
| 4 | RMS voltage U_{rms} | 1400VAC | |
| 5 | Non-periodic impulse voltage U_s | 3000V | |
| 6 | Maximum current I_{max} | 14A | |
| 7 | Maximum peak current \hat{I} | 450A | |
| 8 | Max imrush current \hat{I}_s | 900A | |
| 9 | Test voltage between terminals | 3000VAC , 50Hz , 10s | |
| 10 | Loss tangent tan | ≤ 0.0004 | |
| 11 | Self-inductance | $\leq 90nH$ | |
| 12 | Sealing test | 75°C for 4 hours | |

5. Install parameters

5.1.Install Interface Parameters

a)The shape, installation method, dimensional tolerance and other parameters are shown in the figure below;

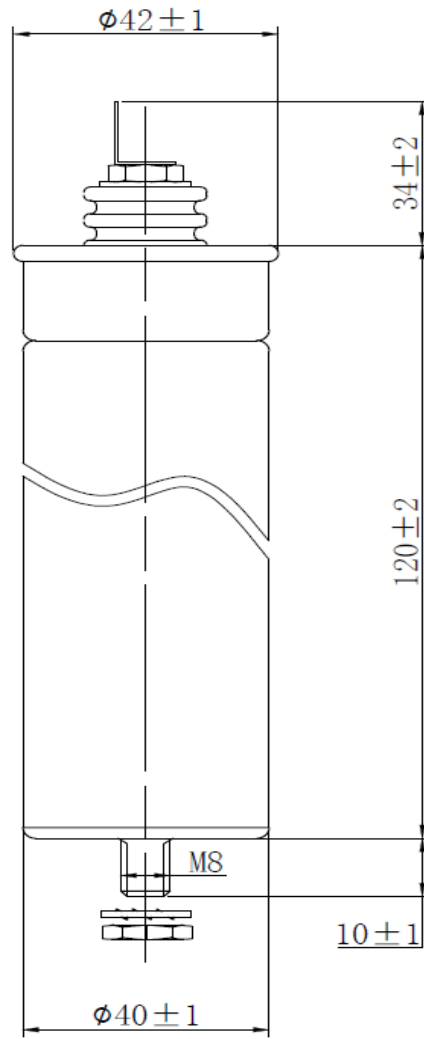


Figure 1 Dimensions

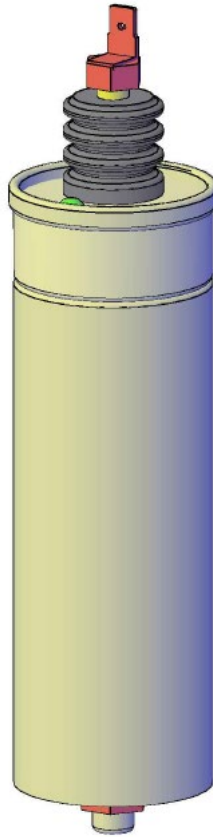


Figure 2 3D schematic diagram

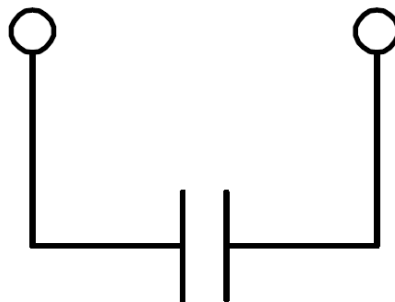


Figure 3 Electrical interface diagram

6. Material parameters

The main material parameters are shown in Table 2.

Table 2 Material parameters

| No. | Part No. | Material | Model Spec and Material Requirements | Remark |
|-----|---------------|---------------------|---|--------|
| 1 | Solid medium | Polypropylene film | Biaxially stretched double-sided roughened polypropylene film | |
| 2 | Liquid medium | Benzyltoluene | M/DBT, without PCB | |
| 3 | Gas medium | N2 | / | |
| 4 | Electrode | Aluminum foil | 5 μ m | |
| 5 | Outer shell | Aluminum shell | Brushed oxide finish, cylindrical | |
| 6 | Lead pole | Polymeric insulator | PBT modification and strengthening | |

7. Test requirements

Tests can be divided into two categories:

--- Routine tests

---Type test

Routine tests are carried out on all products produced in the same batch, and test reports are sent to customers along with the products.

The type test shall be carried out on one of the first batch of products, and the supplier shall provide a formal type test report.

Regarding some test items in the type test, such as impact and vibration test, environmental test and etc. if there are similar products, re-testing can be exempted.

The specific routine test and type test items are shown in Table 3.

Table 3 List of test items

| No. | Test items | Type Test | Routine Test | Standard Terms and Qualification Basis |
|-----|--------------------------------|-----------|--------------|--|
| 1 | Visual Inspection | √ | √ | Visually inspect the appearance of the capacitor, and check the external dimensions of the capacitor with measuring tools. There is no damage on the surface, and the external dimensions meet the requirements of the drawings. |
| 2 | Cap and tan | √ | √ | The test method specified in 5.3 and 5.4 of GB/T 17702-2013. Meet the requirements of 6.2. |
| 3 | Test voltage between terminals | √ | √ | The test method specified in 5.5.2 and 5.5.3 of GB/T 17702-2013. Breakdown and flashover is not allowed to occur. |

| | | | | |
|----|--|---|---|--|
| 4 | Test voltage between terminals and shell | ✓ | ✓ | The test method specified in 5.6.1 and 5.6.2 of GB/T 17702-2013. Breakdown and flashover is not allowed. |
| 5 | Sealing test | | ✓ | The test method specified in 5.8 of GB/T 17702-2013. No leakage. |
| 6 | Impulse discharge test | ✓ | | The test method specified in 5.9 of GB/T 17702-2013. |
| 7 | Environment test | ✓ | | The test method specified in 5.13 of GB/T 17702-2013. Meet the standard requirements. |
| 8 | Mechanical test | ✓ | | The test method specified in 5.14 of GB/T 17702-2013. Meet the standard requirements. |
| 9 | Thermal stability test | ✓ | | The test method specified in 5.10 of GB/T 17702-2013. Meet the standard requirements. |
| 10 | Resonant frequency measurement | ✓ | | The test method specified in 5.12 of GB/T 17702-2013. Meet the standard requirements. |
| 11 | Durability test | ✓ | | The test method specified in 5.15 of GB/T 17702-2013. In 5.15.3 and 5.15.5, the difference between the capacitance measurements made should not be greater than 3% of the initial value. |
| 12 | Destructive test | ✓ | | The test method specified in Article 5.16 of GB/T 17702-2013. |

Note: Use " ✓ " to select type test and routine test. If there are more applicable relevant standards, can also refer to the test methods and qualification basis.