



SM-90V-10FUS SUPER CAPACITOR MODULE



FEATURES AND BENEFITS:

- Highest power density performance
- Individually balanced cells
- Ultra-low internal resistance
- Over 1,000,000 duty cycles
- Voltage and temperature detection function

TYPICAL APPLICATIONS:

- Wind Turbine Pitch Systems
- Electric, hybrid cars
- Rail brake energy recovery system
- Locomotive Starting System
- Uninterruptible Power Supplies (UPS)

SPECIFICATIONS

ELECTRICAL

Capacitance

| | |
|-----------------------|------------|
| Nominal capacitance | 10F |
| Capacitance tolerance | +20% / -0% |

Voltage

| | |
|--------------------------|-------|
| Rated voltage | 90V |
| Absolute Maximum Voltage | 97.2V |
| Maximum Series Voltage | 750 V |

Resistance

| | |
|---------|--------|
| ESR, DC | 120 mΩ |
|---------|--------|

Current

| | |
|--|--------|
| Maximum continuous current ($\Delta T=40^{\circ}\text{C}$) | 25 A |
| Maximum peak current, 1 sec. | 230 A |
| Leakage current (I_c) | 0.5 mA |

TEMPERATURE

| | |
|--|----------------|
| Operating temperature range (Cell case temperature) | -40°C to +65°C |
|--|----------------|

| | |
|--|----------------|
| Storage temperature range (Storage uncharged) | -40°C to +70°C |
|--|----------------|

PHYSICAL

| | |
|---------------------------|------------------|
| Weight | 8 kg |
| Output terminal | Connector |
| Recommended wire diameter | 6mm ² |
| Vibration Specification | GB-T 11287-2000 |
| Shock Specification | GBT 14537-1993 |
| Environmental Protection | IP20 |

MONITORING / CELL VOLTAGE MANAGEMENT

| | |
|-----------------------------|--------------------|
| Internal Temperature Sensor | Temperature Switch |
| Cell Voltage Monitoring | Overvoltage Alarm |

POWER AND ENERGY

| | |
|---|----------|
| Usable power density (Pd) | 1010W/kg |
| Impedance match power density (P _{max}) | 1680W/kg |
| Gravimetric energy density (E _{max}) | 1.4Wh/kg |
| Energy available | 11.2 Wh |

LIFE

| | |
|---|-------------|
| High Temperature (at Rated Voltage & Maximum operating Temperature) | 1,500 hours |
|---|-------------|

| | |
|---|------|
| Capacitance change (% decrease from minimum initial value) | ≤20% |
|---|------|

| | |
|---|-------|
| ESR change (% increase from minimum initial value) | ≤100% |
|---|-------|

| | |
|---|----------|
| Room Temperature (at Rated Voltage at 25°C) | 10 years |
|---|----------|

| | |
|---|------|
| Capacitance change (% decrease from minimum initial value) | ≤20% |
|---|------|

| | |
|---|-------|
| ESR change (% increase from minimum initial value) | ≤100% |
|---|-------|

| | |
|---|----------|
| Cycle Life (Number of cycles) | >1000000 |
|---|----------|

| | |
|---|------|
| Capacitance change (% decrease from minimum initial value) | ≤20% |
|---|------|

| | |
|---|-------|
| ESR change (% increase from minimum initial value) | ≤100% |
|---|-------|

| | |
|---|---------|
| Shelf Life (Stored uncharged up to a maximum storage) | 2 years |
|---|---------|

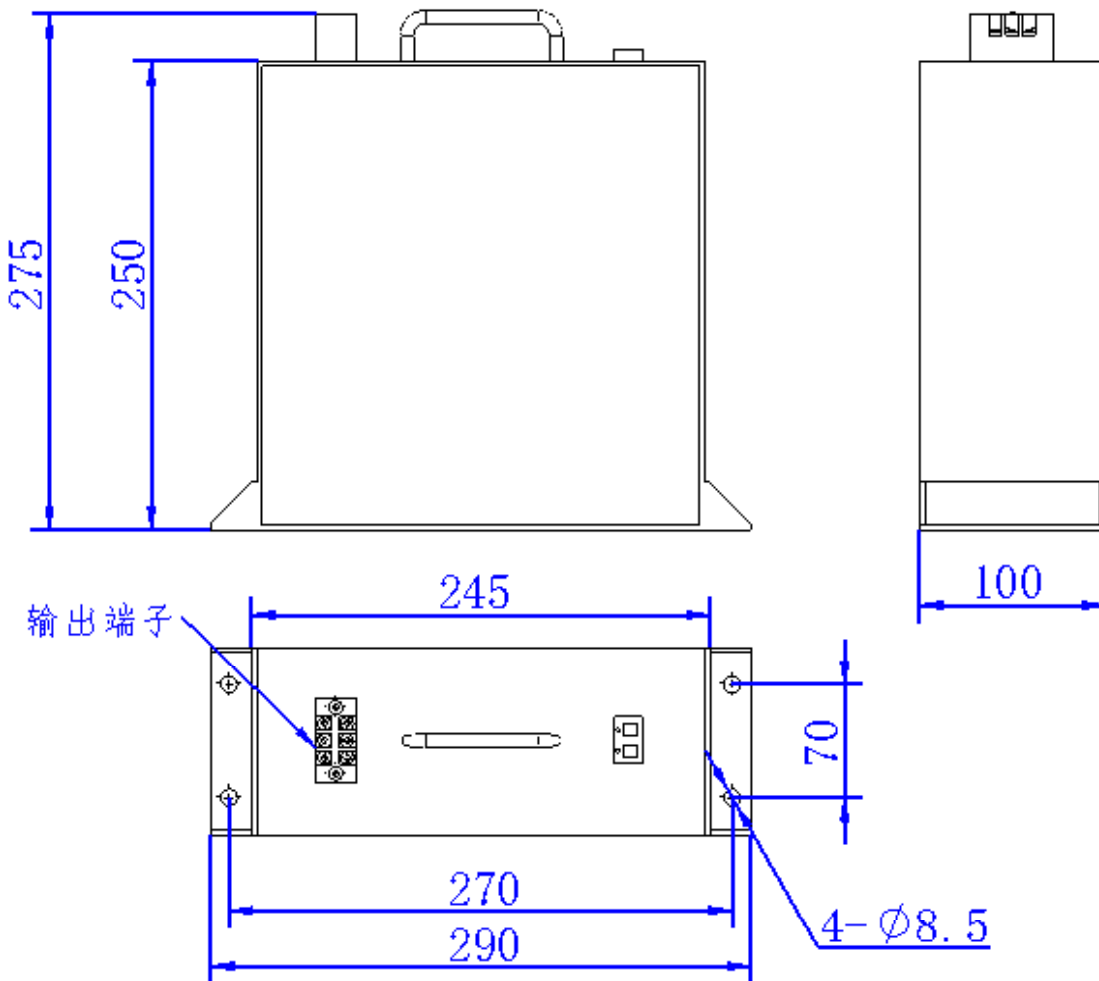
SAFETY

| | |
|--|-------|
| Short circuit current (I_{sc}) (Current possible with short circuit from rated voltage. Do not use as an operating current.) | 7500A |
|--|-------|

| | |
|------------------------------|------------|
| Factory High-Pot Test | AC 2,500 V |
|------------------------------|------------|



SM-90V-10FUS SUPER CAPACITOR MODULE



| Part Number. | Dimension (mm) | | | Package Quantity(Set) |
|--------------|----------------|------------|------------|-----------------------|
| | L (±0.5mm) | W (±0.5mm) | H (±0.5mm) | |
| SM-90V-10FUS | 290.0 | 100.0 | 275.0 | 1 |

Product dimensions are for reference only unless otherwise identified. Product dimensions and specifications may change without notice.
Please contact GT directly for any technical specifications critical to application.