

MOSFET MODULE

SF100CB100



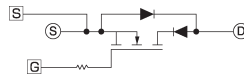
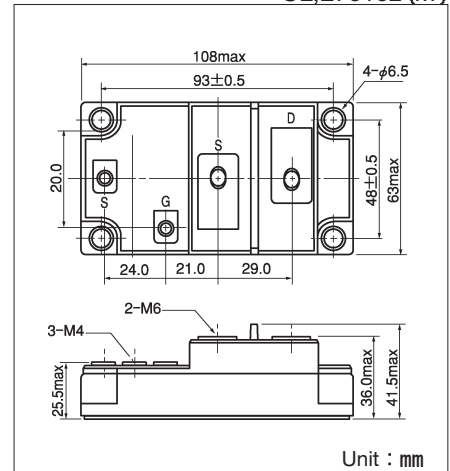
UL;E76102 (M)

SF100CB100 is a isolated power MOSFET module designed for fast switching applications of high voltage and current. The mounting base of the module is electrically isolated from semiconductor elements for simple heatsink construction.

- $I_D=100A$, $V_{DSS}=1000V$
- Suitable for high speed switching applications.
- Low ON resistance.
- Wide Safe Operating Areas.
- $t_{rr} \leq 300ns$

(Applications)

UPS (CVCF), Motor Control, Switching Power Supply, etc.



Maximum Ratings

($T_j=25^\circ C$)

| Symbol | Item | | Conditions | Ratings | | Unit |
|-----------|----------------------------|---------------|-----------------------------------|-----------------|--|-----------------|
| | | | | SF100CB100 | | |
| V_{DSS} | Drain-Source Voltage | | | 1000 | | V |
| V_{GSS} | Gate-Source Voltage | | | ± 30 | | V |
| I_D | Drain Current | DC | | 100 | | A |
| I_{DP} | | Pulse | | 200 | | |
| $-I_D$ | Reverse Drain Current | | | 100 | | A |
| P_T | Total Power Dissipation | | $T_c=25^\circ C$ | 800 | | W |
| T_j | Channel Temperature | | | $-40 \sim +150$ | | $^\circ C$ |
| T_{stg} | Storage Temperature | | | $-40 \sim +125$ | | $^\circ C$ |
| V_{ISO} | Isolation Voltage (R.M.S.) | | A.C. 1minute | 2500 | | V |
| | Mounting Torque | Mounting (M6) | Recommended Value | | | N·m (kgf·cm) |
| | | Terminal (M6) | Recommended Value 2.5~3.9 (25~40) | 4.7 (48) | | |
| | | Terminal (M4) | Recommended Value 1.0~1.4 (10~14) | 1.5 (15) | | |
| | Mass | | Typical Value | 460 | | g |

Electrical Characteristics

($T_j=25^\circ C$)

| Symbol | Item | | Conditions | Ratings | | | Unit |
|---------------|----------------------------------|---------------------|--|---------|-------|------------|--------------|
| | | | | Min. | Typ. | Max. | |
| I_{GSS} | Gate Leakage Current | | $V_{GS} = \pm 20V$, $V_{DS} = 0V$ | | | ± 1000 | μA |
| I_{DSS} | Zero Gate Voltage Drain Current | | $V_{GS} = 0V$, $V_{DS} = 800V$ | | | 4.0 | mA |
| $V_{(BR)DSS}$ | Drain-Source Breakdown Voltage | | $V_{GS} = 0V$, $I_D = 1mA$ | 1000 | | | V |
| $V_{GS(th)}$ | Gate-Source Threshold Voltage | | $V_{DS} = V_{GS}$, $I_D = 10mA$ | 1.5 | | 3.5 | V |
| $R_{DS(on)}$ | Drain-Source On-State Resistance | | $I_D = 100A$, $V_{GS} = 15V$ | | | 150 | m Ω |
| $V_{DS(on)}$ | Drain-Source On-State Voltage | | $I_D = 100A$, $V_{GS} = 15V$ | | | 15 | V |
| g_{fs} | Forward Transconductance | | $V_{DS} = 10A$, $V_D = 75A$ | 30 | 50 | | S |
| C_{iss} | Input Capacitance | | $V_{GS} = 0V$, $V_{DS} = 25V$, $f = 1.0MHz$ | | 16000 | 19200 | pF |
| C_{oss} | Output Capacitance | | $V_{GS} = 0V$, $V_{DS} = 25V$, $f = 1.0MHz$ | | 2900 | 4200 | pF |
| C_{rss} | Reverse Transfer Capacitance | | $V_{GS} = 0V$, $V_{DS} = 25V$, $f = 1.0MHz$ | | 1800 | 2600 | pF |
| $t_{d(on)}$ | Switching Time | Turn-on Delay Time | $R_L = 6 \Omega$, $V_{GS} = 15V / -5V$ $I_D = 100A$, $R_G = 2.2 \Omega$ | | | 150 | ns |
| t_r | | Rise Time | | | | 300 | |
| $t_{d(off)}$ | | Turn-off Delay Time | | | | 600 | |
| t_f | | Fall Time | | | | 300 | |
| V_{SDS} | Diode Forward Voltage | | $-I_D = 100A$, $V_{GS} = 0V$ | | | 1.8 | V |
| t_{rr} | Reverse Recovery Time | | $-I_S = 100A$, $V_{GS} = 15V$, $di/dt = 400A/\mu s$ | | | 300 | ns |
| $R_{th(j-c)}$ | Thermal Resistance | | MOSFET | | | 0.16 | $^\circ C/W$ |
| | | | Diode | | | 0.64 | |

