

DIODE MODULE (F.R.D.)

FRS400EA180/200



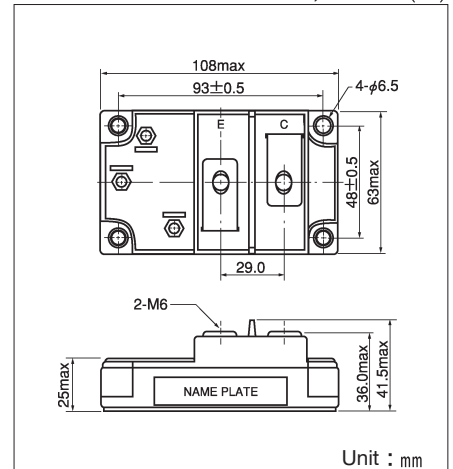
UL;E76102 (M)

FRS400EA is a high speed isolated diode module designed for high power switching application. FRS400EA is suitable for high frequency application requiring low loss and high speed control.

- High Speed $t_{rr} \leq 700\text{ns}$
- $I_F (AV)$ 400A
- Isolated Mounting base.
- High Surge Capability

(Applications)

Inverter Welding Power Supply
 Power Supply for Telecommunication
 Various Switching Power Supply.



Unit : mm

Maximum Ratings

($T_j = 25^\circ\text{C}$)

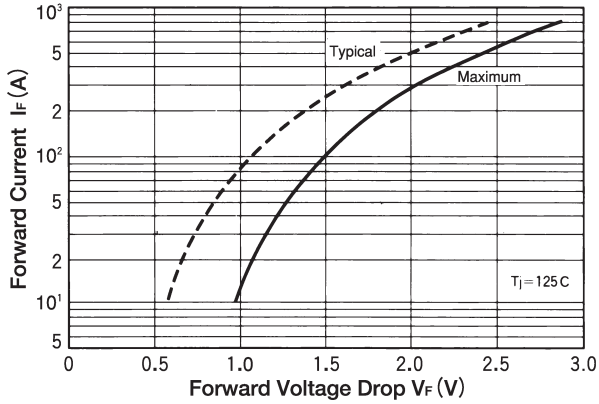
| Symbol | Item | Ratings | | Unit |
|-------------|---------------------------------|-------------|-------------|------|
| | | FRS400EA180 | FRS400EA200 | |
| V_{RRM} | Repetitive Peak Reverse Voltage | 1800 | 2000 | V |
| $V_{R(DC)}$ | D.C. Reverse Voltage | 1440 | 1600 | V |

| Symbol | Item | Conditions | Ratings | Unit | |
|-----------|--------------------------------------|-----------------------------------------------|-----------------------------------|----------------------|-----------------|
| I_F | Forward Current | D.C. $T_c : 79^\circ\text{C}$ | 400 | A | |
| I_{FSM} | Surge Forward Current | $1/2$ cycle, 60Hz, peak value, non-repetitive | 5000 | A | |
| I^2t | I^2t | Value for one cycle of surge current | 104000 | A^2S | |
| T_j | Operating Junction Temperature | | $-40 \sim +150$ | $^\circ\text{C}$ | |
| T_{stg} | Storage Temperature | | $-40 \sim +125$ | $^\circ\text{C}$ | |
| V_{iso} | Isolation Breakdown Voltage (R.M.S.) | A.C. 1 minute | 2500 | V | |
| | Mounting Torque | Mounting (M6) | Recommended Value 2.5~3.9 (25~40) | 4.7 (48) | N·m (kgf·cm) |
| | | Terminal (M6) | Recommended Value 2.5~3.9 (25~40) | 4.7 (48) | |
| | Mass | Typical Value | 460 | g | |

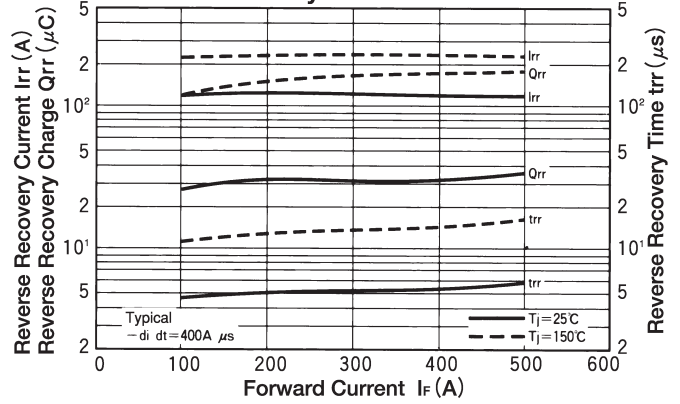
Electrical Characteristics

| Symbol | Item | Conditions | Ratings | | | Unit |
|---------------|---------------------------------|------------------------------------------------------------------------|---------|------|------|---------------------------|
| | | | Min. | Typ. | Max. | |
| I_{RRM} | Repetitive Peak Reverse Current | $V_R = V_{RRM}$, $T_j = 150^\circ\text{C}$ | | | 100 | mA |
| V_{FM} | Forward Voltage Drop | $T_j = 125^\circ\text{C}$, $I_{FM} = 400\text{A}$, Inst. measurement | | | 2.20 | V |
| t_{rr} | Reverse Recovery Time | $I_F = 400\text{A}$, $-di/dt = 400\text{A}/\mu\text{s}$ | | | 700 | ns |
| $R_{th(j-c)}$ | Thermal Impedance | Junction to case | | | 0.08 | $^\circ\text{C}/\text{W}$ |

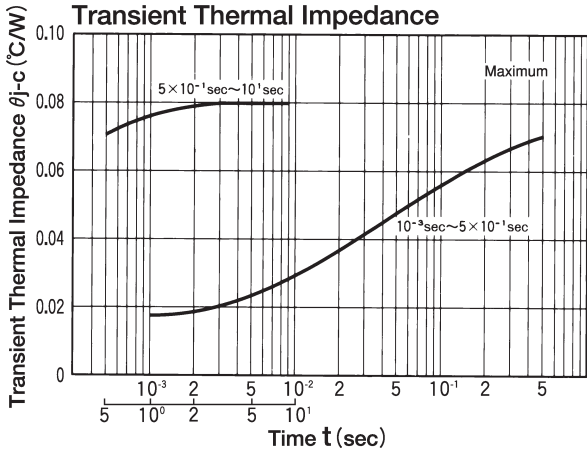
Forward Characteristics



Reverse Recovery Characteristics



Transient Thermal Impedance



Reverse Recovery Characteristics

