

# DIODE MODULE (F.R.D.)

# FRS400EA180/200

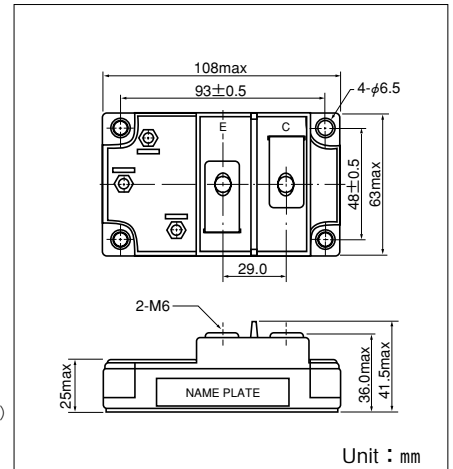
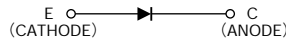
UL;E76102 (M)

**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.



### Maximum Ratings

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

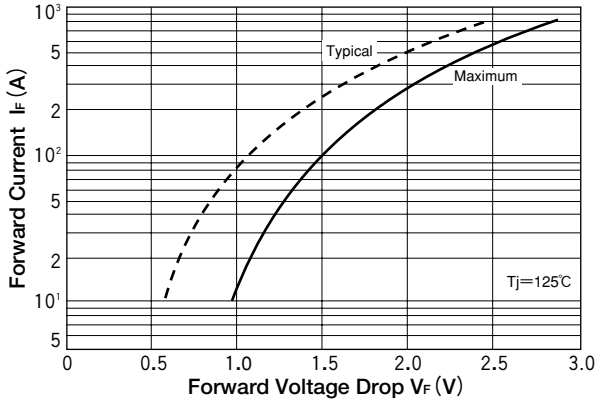
Symbol	Item	Ratings		Unit
		FRS400EA180	FRS400EA200	
$V_{RRM}$	Repetitive Peak Reverse Voltage	1800	2000	V
$V_{R(DC)}$	D.C. Reverse Voltage	1440	1600	V

Symbol	Item	Conditions	Ratings	Unit	
$I_F (AV)$	Forward Current	D.C. $T_c : 79^\circ\text{C}$	400	A	
$I_{FMS}$	Surge Forward Current	$\frac{1}{2}$ cycle, 60Hz, peak value, non-repetitive	5000	A	
$I^2t$	$I^2t$	Value for one cycle of surge current	104000	$\text{A}^2\text{S}$	
$T_j$	Operating Junction Temperature		-40 to +150	$^\circ\text{C}$	
$T_{stg}$	Storage Temperature		-40 to +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	

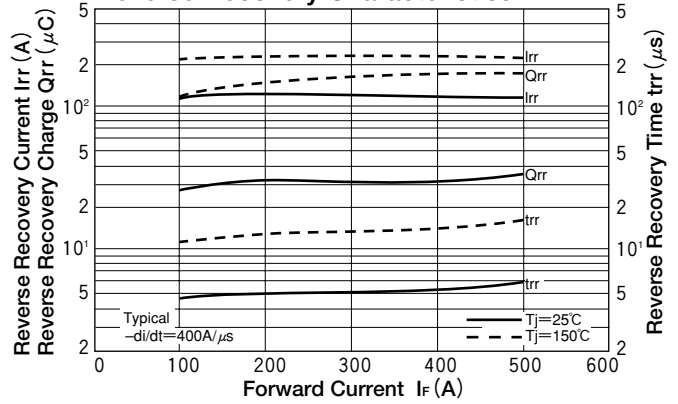
### Electrical Characteristics

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	$T_j = 125^\circ\text{C}$ , $I_F = 400\text{A}$ , 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	$^\circ\text{C}/\text{W}$

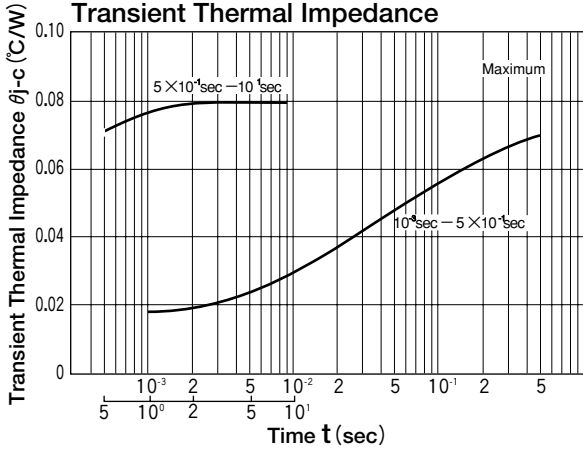
### Forward Characteristics



### Reverse Recovery Characteristics



### Transient Thermal Impedance



### Reverse Recovery Characteristics

