DIODE MODULE（F.R.D.）

FRS300BA50
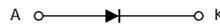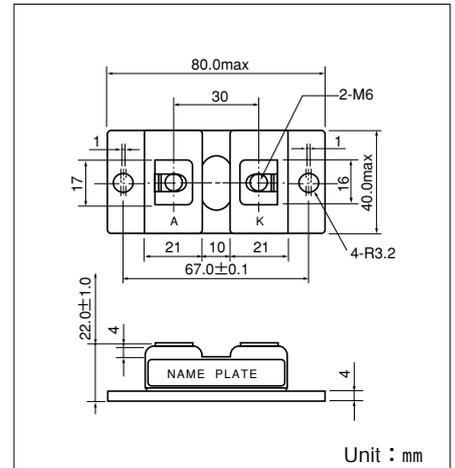
FRS300BA is a high speed（fast recovery）isolated diode module designed for high power switching application. **FRS300BA** is suitable for high frequency application requiring low loss and high speed control.

- High Speed $t_{rr} \leqq 200ns$
- $I_{F(AV)}$ 300A
- Isolated Mounting base.
- High Surge Capability

（**Applications**）
Inverter Welding Power Supply
Power Supply for Telecommunication
Various Switching Power Supply.

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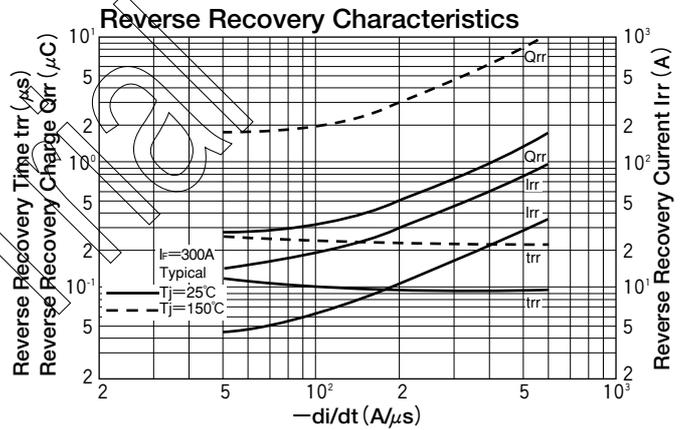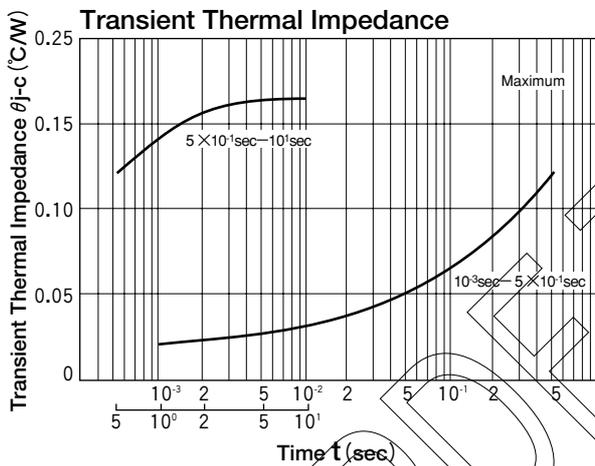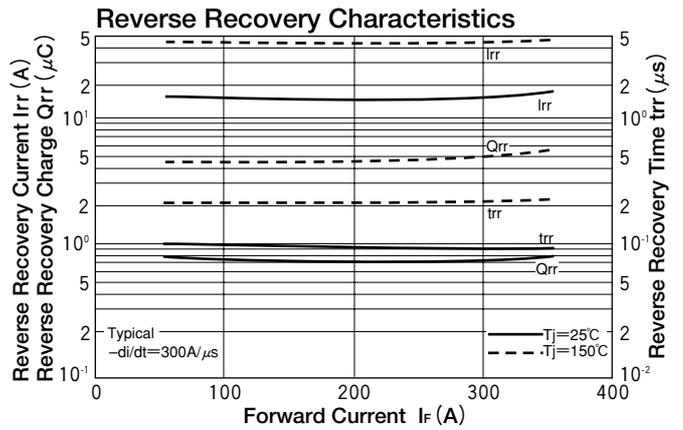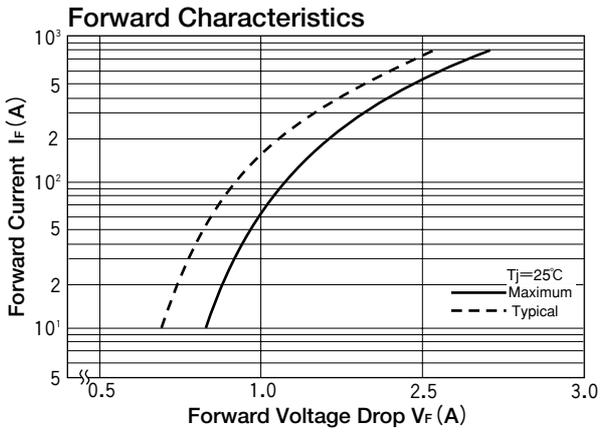

Unit：mm

■Maximum Ratings

（Tj＝25℃ unless otherwise specified）

Symbol	Item	Ratings FRS300BA50	Unit
V_{RRM}	Repetitive Peak Reverse Voltage	500	V
$V_{R(DC)}$	D.C. Reverse Voltage	400	V

Symbol	Item		Conditions	Ratings	Unit
$I_{F(AV)}$	Forward Current		D.C. Tc：85℃	300	A
I_{FMS}	Surge Forward Current		1/2 cycle, 60Hz, peak value, non-repetitive	4000	A
I^2t	I^2t		Value for one cycle of surge current	66600	A^2S
Tj	Operating Junction Temperature			−40 to ＋150	℃
Tstg	Storage Temperature			−40 to ＋125	℃
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	170	g

■Electrical Characteristics

Symbol	Item	Conditions	Ratings			Unit
			Min.	Typ.	Max.	
I_{RRM}	Repetitive Peak Reverse Current	Tj＝125℃，V_{RRM}＝500V			300	mA
V_{FM}	Forward Voltage Drop	Tj＝25℃, I_{FM}＝300A, Inst. measurement			1.3	V
trr	Reverse Recovery Time	I_F＝300A，−di/dt＝300A/μs			200	ns
Rth（j-c）	Thermal Impedance	Junction to case			0.165	℃/W

Forward Characteristics

Forward Current I_F (A) vs Forward Voltage Drop V_F (A)

Tj=25℃
Maximum
Typical

Reverse Recovery Characteristics

Reverse Recovery Current Irr (A)
Reverse Recovery Charge Qrr (μC)
Reverse Recovery Time trr (μs)
Forward Current I_F (A)

Irr
Irr
Qrr
trr
trr
Qrr

Typical
−di/dt=300A/μs

Tj=25℃
Tj=150℃

Transient Thermal Impedance

Transient Thermal Impedance θj-c (℃/W) vs Time t (sec)

Maximum

5×10⁻¹sec−10¹sec

10⁻³sec−5×10⁻¹sec

Reverse Recovery Characteristics

Reverse Recovery Time trr (μs)
Reverse Recovery Charge Qrr (μC)
Reverse Recovery Current Irr (A)
−di/dt (A/μs)

Qrr
Qrr
Irr
Irr
trr
trr

IF=300A
Typical

Tj=25℃
Tj=150℃

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