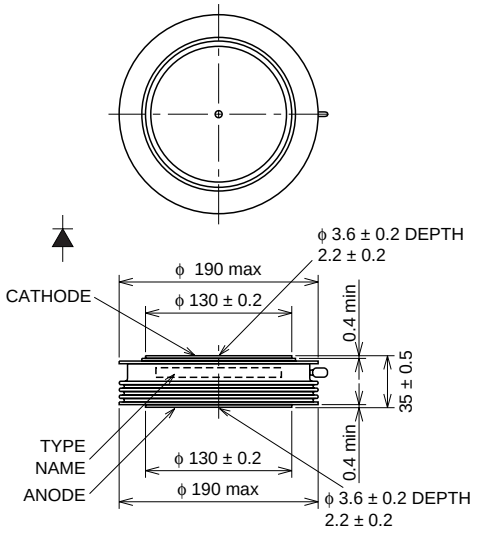
FD2000DU-120

**HIGH POWER, HIGH FREQUENCY,
PRESS PACK TYPE**

FD2000DU-120

- $I_{F(AV)}$ Average forward current 1700A
- V_{RRM} Repetitive peak reverse voltage 6000V
- Q_{RR} Reverse recovery charge 1500µC
- Press pack type

OUTLINE DRAWING Dimension in mm



APPLICATION

High-power inverters, Fly-wheel diodes in DC choppers, Power supplies as high frequency rectifiers

MAXIMUM RATINGS

Symbol	Parameter	Voltage class	Unit
		120	
V_{RRM}	Repetitive peak reverse voltage	6000	V
V_{RSM}	Non-repetitive peak reverse voltage	6000	V
$V_{R(DC)}$	DC reverse voltage	4800	V

Symbol	Parameter	Conditions	Ratings	Unit
$I_{F(RMS)}$	RMS forward current		2670	A
$I_{F(AV)}$	Average forward current	f = 60Hz, sine wave θ = 180°, Tf = 65°C	1700	A
I_{FSM}	Surge forward current	One half cycle at 60Hz, non-repetitive	40	kA
I^2t	Current-squared, time integration	One cycle at 60Hz	6.7×10^6	A^2s
T_j	Junction temperature		–40 ~ +125	°C
T_{stg}	Storage temperature		–40 ~ +150	°C
—	Mounting force required	Recommended value 108	98 ~ 118	kN
—	Weight	Standard value	4600	g

ELECTRICAL CHARACTERISTICS

Symbol	Parameter	Test conditions	Limits			Unit
			Min	Typ	Max	
I_{RRM}	Repetitive peak reverse current	T_j = 125°C, V_{RRM} Applied	—	—	300	mA
V_{FM}	Forward voltage	T_j = 125°C, I_{FM} = 6300A, Instantaneous measurememt	—	—	5.0	V
Q_{RR}	Reverse recovery charge	I_{FM} = 2000A, di_F/dt = –30A/µs, V_R = 150V, T_j = 125°C	—	—	1500	µC
$R_{th(j-f)}$	Thermal resistance	Junction to fin	—	—	0.009	°C/W

MITSUBISHI ELECTRIC

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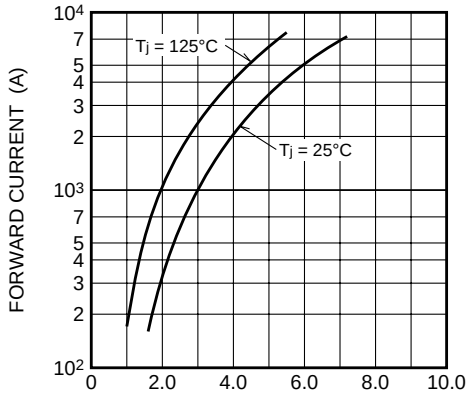
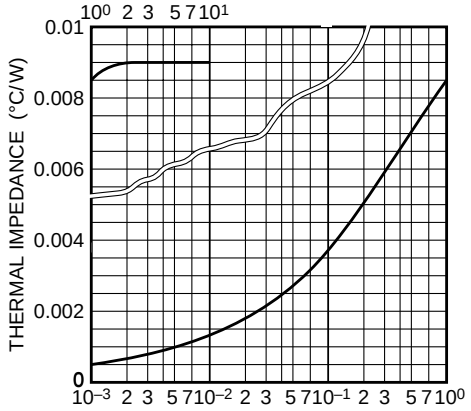
PERFORMANCE CURVES

MAXIMUM FORWARD CHARACTERISTICS

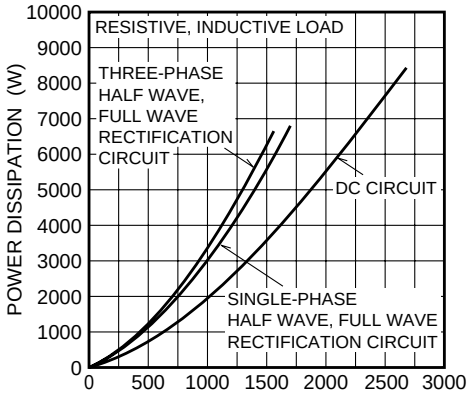


RATED SURGE FORWARD CURRENT

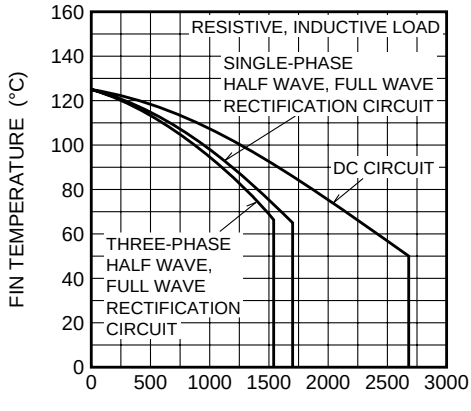
MAXIMUM THERMAL IMPEDANCE CHARACTERISTIC (JUNCTION TO FIN)



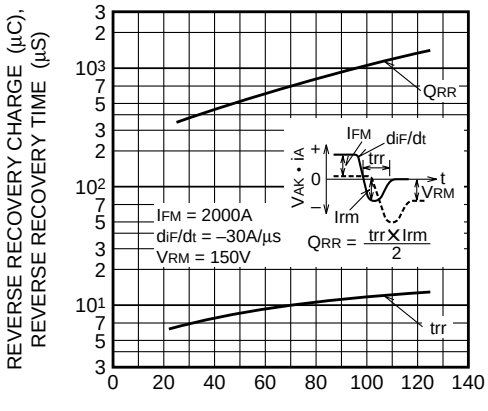
MAXIMUM POWER DISSIPATION CHARACTERISTICS



ALLOWABLE FIN TEMPERATURE VS. AVERAGE FORWARD CURRENT



REVERSE RECOVERY CHARGE, REVERSE RECOVERY TIME VS. JUNCTION TEMPERATURE (TYPICAL)



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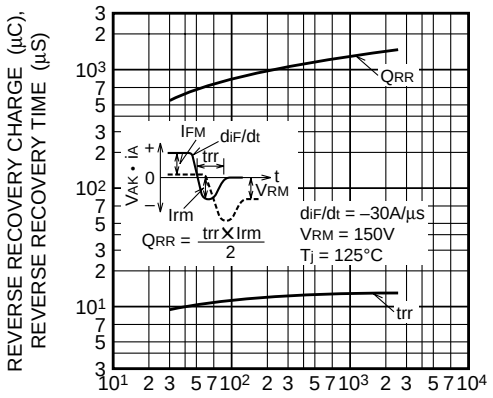
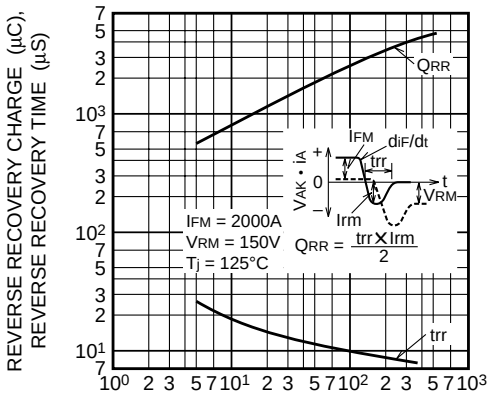
REVERSE RECOVERY CHARGE, REVERSE RECOVERY TIME VS. FORWARD CURRENT (TYPICAL)



REVERSE RECOVERY CHARGE, REVERSE RECOVERY TIME VS. RATE OF DECREASE OF REVERSE CURRENT (TYPICAL)



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