

MITSUBISHI HIGH-FREQUENCY RECTIFIER DIODES

FD2000DU-120

HIGH POWER, HIGH FREQUENCY,
PRESS PACK TYPE

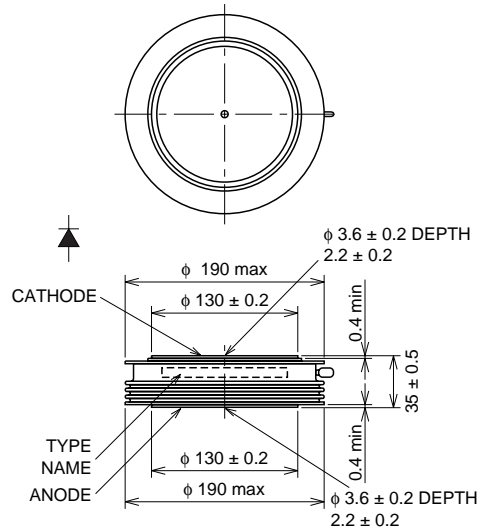
FD2000DU-120



- IF(AV) Average forward current 1700A
- VRRM Repetitive peak reverse voltage 6000V
- QRR 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	6000	
VRRM	Repetitive peak reverse voltage	6000		V
VRSM	Non-repetitive peak reverse voltage	6000		V
VR(DC)	DC reverse voltage	4800		V

Symbol	Parameter	Conditions	Ratings	Unit
IF(RMS)	RMS forward current		2670	A
IF(AV)	Average forward current	f = 60Hz, sine wave θ = 180°, Tf = 65°C	1700	A
IFSM	Surge forward current	One half cycle at 60Hz, non-repetitive	40	kA
I ² t	Current-squared, time integration	One cycle at 60Hz	6.7 × 10 ⁶	A ² s
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	
IRRM	Repetitive peak reverse current	T _j = 125°C, VRRM Applied	—	—	300	mA
VFM	Forward voltage	T _j = 125°C, IFM = 6300A, Instantaneous measurement	—	—	5.0	V
QRR	Reverse recovery charge	IFM = 2000A, diF/dt = -30A/μs, VR = 150V, T _j = 125°C	—	—	1500	μC
R _{th(j-f)}	Thermal resistance	Junction to fin	—	—	0.009	°C/W

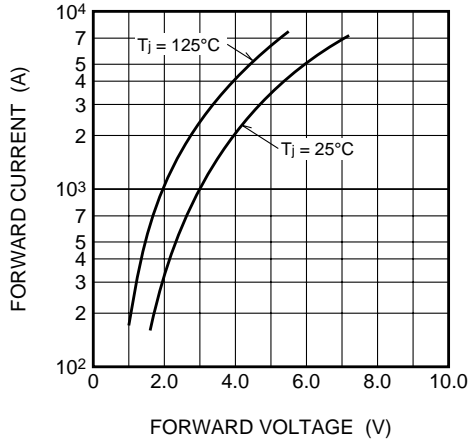
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FD2000DU-120

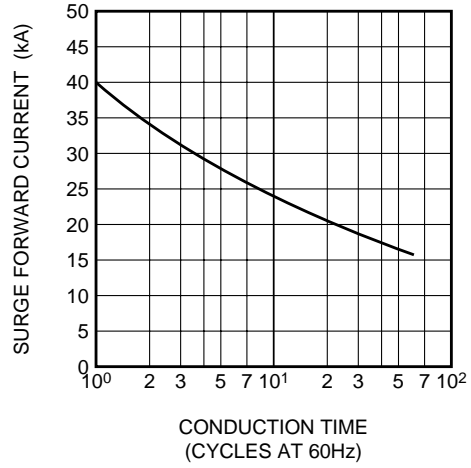
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PERFORMANCE CURVES

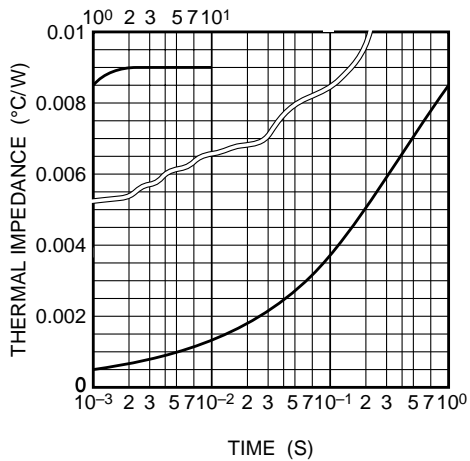
MAXIMUM FORWARD CHARACTERISTICS



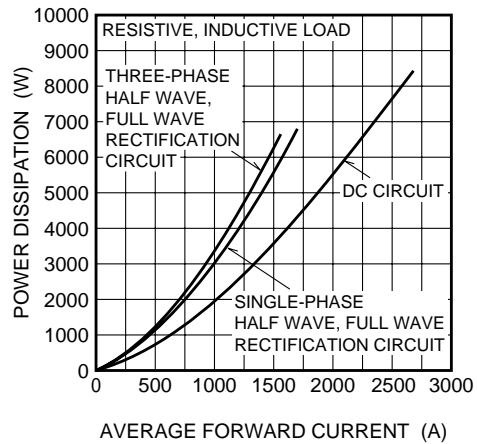
RATED SURGE FORWARD CURRENT



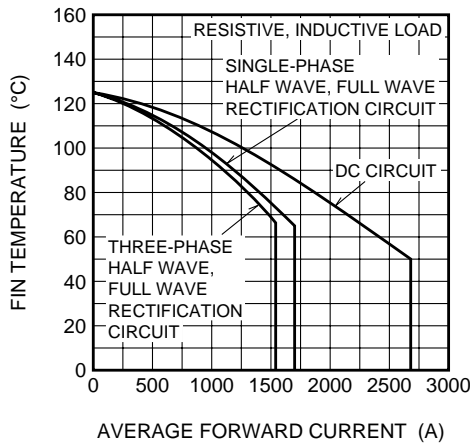
MAXIMUM THERMAL IMPEDANCE CHARACTERISTIC (JUNCTION TO FIN)



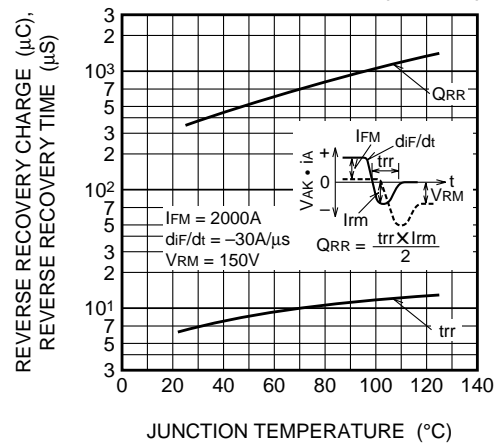
MAXIMUM POWER DISSIPATION CHARACTERISTICS



ALLOWABLE FIN TEMPERATURE VS. AVERAGE FORWARD CURRENT



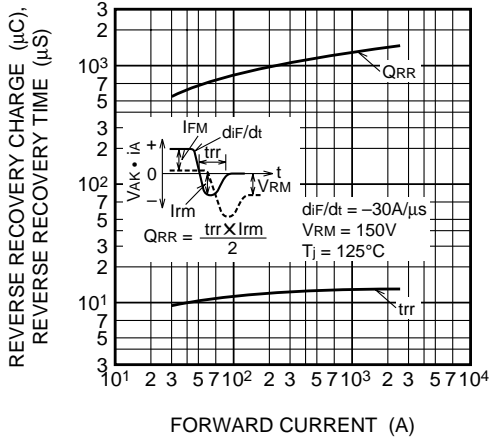
REVERSE RECOVERY CHARGE, REVERSE RECOVERY TIME VS. JUNCTION TEMPERATURE (TYPICAL)



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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)**

