

FD2000DU-120

HIGH POWER, HIGH FREQUENCY,
PRESS PACK TYPE

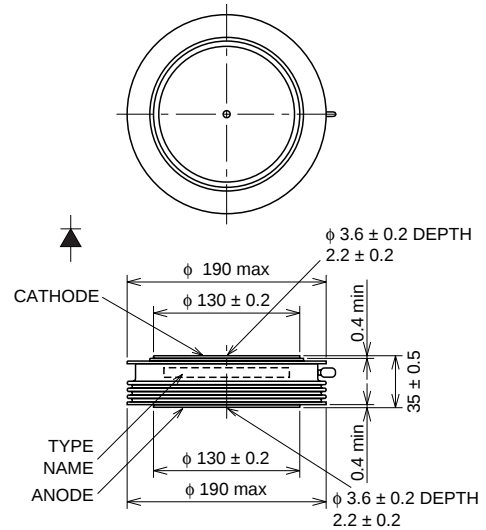
FD2000DU-120



- $I_F(AV)$ Average forward current1700A
- V_{RRM} Repetitive peak reverse voltage 6000V
- Q_{RR} Reverse recovery charge 1500 μ C
- 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	$f = 60\text{Hz}$, sine wave $\theta = 180^\circ$, $T_f = 65^\circ\text{C}$	1700	A
I_{FSM}	Surge forward current	One half cycle at 60Hz, non-repetitive	40	kA
I_t^2	Current-squared, time integration	One cycle at 60Hz	6.7×10^6	A^2s
T_j	Junction temperature		$-40 \sim +125$	$^\circ\text{C}$
T_{stg}	Storage temperature		$-40 \sim +150$	$^\circ\text{C}$
—	Mounting force required	Recommended value 108	98 ~ 118	kN
—	Weight	Standard value	4600	g

ELECTRICAL CHARACTERISTICS

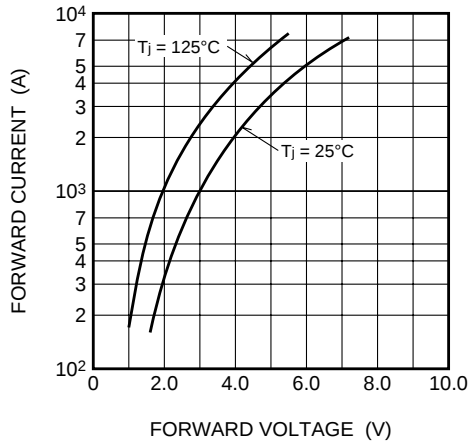
Symbol	Parameter	Test conditions	Limits			Unit
			Min	Typ	Max	
I_{RRM}	Repetitive peak reverse current	$T_j = 125^\circ\text{C}$, V_{RRM} Applied	—	—	300	mA
V_{FM}	Forward voltage	$T_j = 125^\circ\text{C}$, $I_{FM} = 6300\text{A}$, Instantaneous measurement	—	—	5.0	V
Q_{RR}	Reverse recovery charge	$I_{FM}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

FD2000DU-120

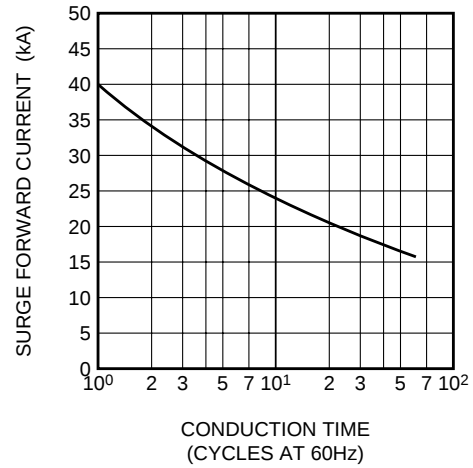
HIGH POWER, HIGH FREQUENCY,
PRESS PACK TYPE

PERFORMANCE CURVES

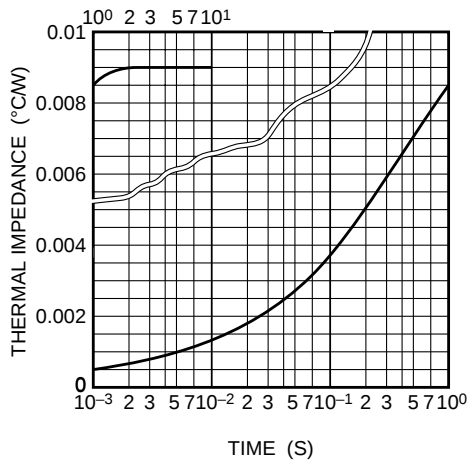
MAXIMUM FORWARD CHARACTERISTICS



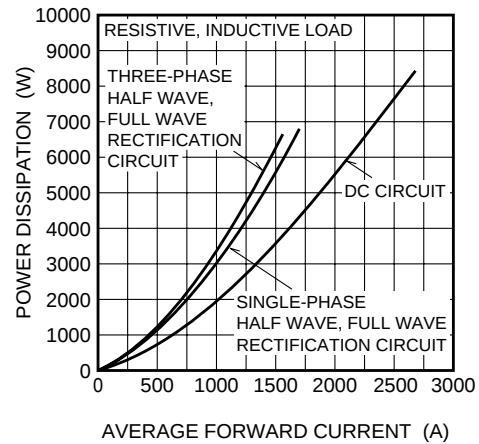
RATED SURGE FORWARD CURRENT



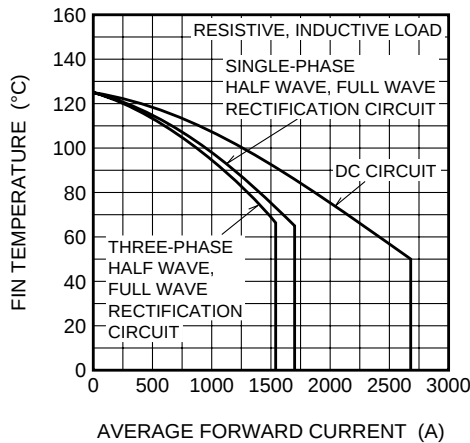
MAXIMUM THERMAL IMPEDANCE CHARACTERISTIC (JUNCTION TO FIN)



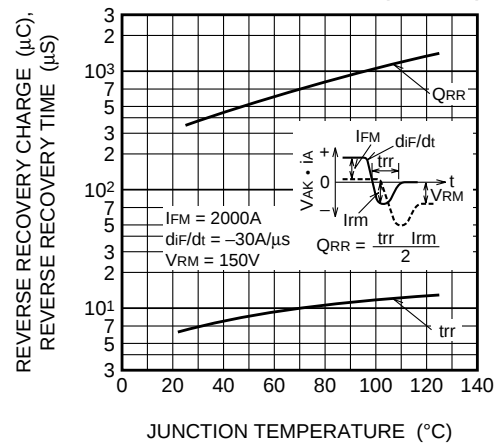
MAXIMUM POWER DISSIPATION CHARACTERISTICS



ALLOWABLE FIN TEMPERATURE VS. AVERAGE FORWARD CURRENT



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



FD2000DU-120

HIGH POWER, HIGH FREQUENCY,
PRESS PACK TYPE

