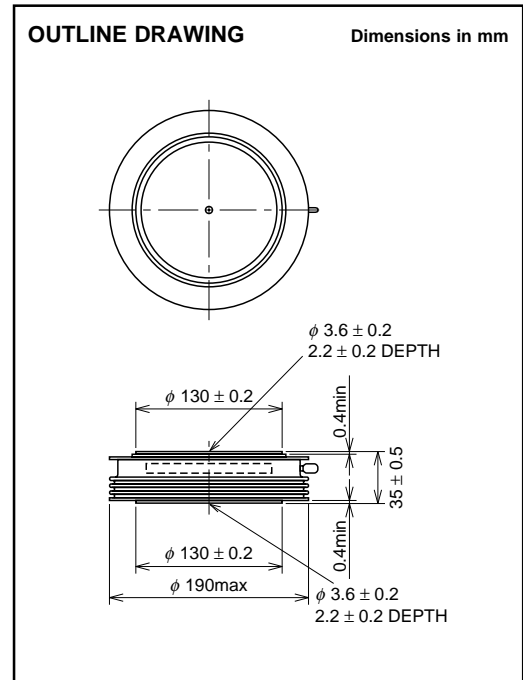


# MITSUBISHI SOFT RECOVERY DIODE FD3000AU-120DA

HIGH POWER, HIGH FREQUENCY  
PRESS PACK TYPE



## APPLICATION

- High-power inverters
- Fly-hwheel diode for GCT Thyristor
- Power supplies as high frequency rectifiers

## MAXIMUM RATINGS

Symbol	Parameter	Conditions	Voltage class	Unit
VRRM	Repetitive peak reverse voltage	—	6000	V
VRSM	Non-repetitive peak reverse voltage	—	6000	V
VR(DC)	DC reverse voltage	—	4800	V
V(LTDS)	Long term DC stability voltage	$\lambda = 100\text{Fit}$	3200	V

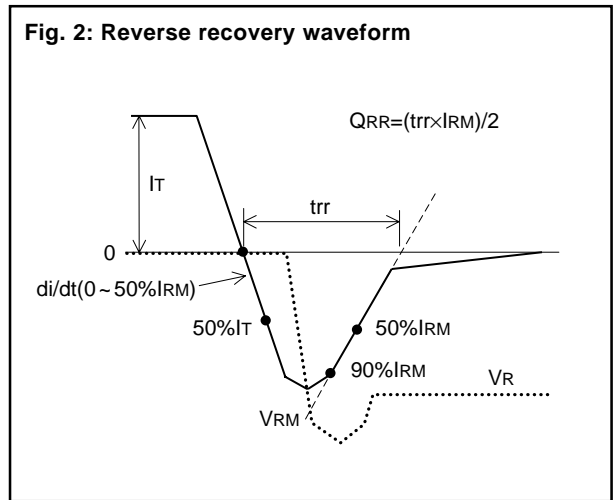
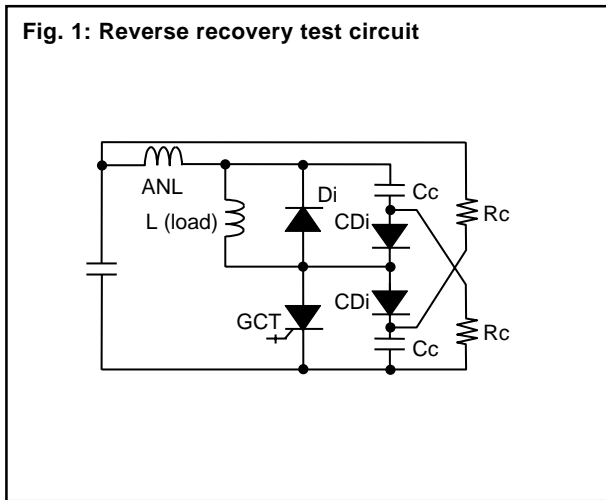
Symbol	Parameter	Conditions	Ratings	Unit
IF(RMS)	RMS forward current	Applied for all condition angles	4700	A
IF(AV)	Average forward current	$f = 60\text{Hz}$ , sine wave $\theta = 180^\circ$ , $T_f = 58^\circ\text{C}$	3000	A
IFSM	Surge forward current	One half cycle at 60Hz, $T_j = 125^\circ\text{C}$ start	40	kA
$I^2t$	Current-squared, time integration		$6.7 \times 10^6$	$\text{A}^2\text{s}$
di/dt	Critical rate of rise of reverse recovery current	$I_{FM} = 3000\text{A}$ , $V_R = 3000\text{V}$ , $T_j = 25/125^\circ\text{C}$ $C_c = 6\mu\text{F}$ , $L_C = 0.3\mu\text{H}$ (See Fig. 1, 2)	1000	$\text{A}/\mu\text{s}$
$T_j$	Junction temperature		-40 ~ 125	$^\circ\text{C}$
$T_{stg}$	Storage temperature		-40 ~ 150	$^\circ\text{C}$
—	Mounting force required	(Recommended value 108kN)	98 ~ 118	kN
—	Weight	Typical value 4600g	—	g

# FD3000AU-120DA

HIGH POWER, HIGH FREQUENCY  
PRESS PACK TYPE

## ELECTRICAL CHARACTERISTICS

Symbol	Parameter	Test conditions	Limits			Unit
			Min.	Typ.	Max.	
V <sub>FM</sub>	Forward voltage	I <sub>FM</sub> = 6300A, T <sub>j</sub> = 125°C	—	—	4.5	V
I <sub>RRM</sub>	Repetitive peak reverse current	V <sub>RM</sub> = 6000V, T <sub>j</sub> = 125°C	—	—	300	mA
Q <sub>RR</sub>	Reverse recovery charge	I <sub>FM</sub> = 2800A, di/dt = 500A/μs, V <sub>R</sub> = 3000V	—	—	9500	μC
E <sub>rec</sub>	Reverse recovery energy	C <sub>c</sub> = 6μF, L <sub>c</sub> = 0.3μH, T <sub>j</sub> = 125°C (See Fig. 1, 2)	—	—	22	J/P
R <sub>th(j-f)</sub>	Thermal resistance	Junction to Fin	—	—	0.004	K/W

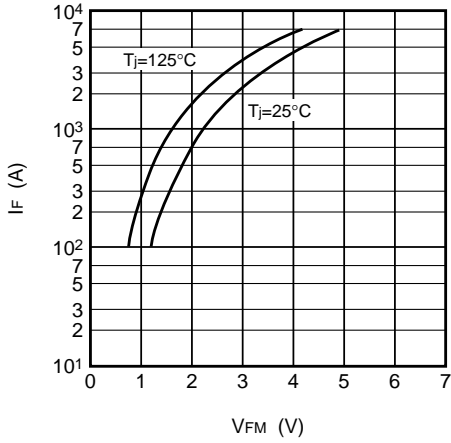


# FD3000AU-120DA

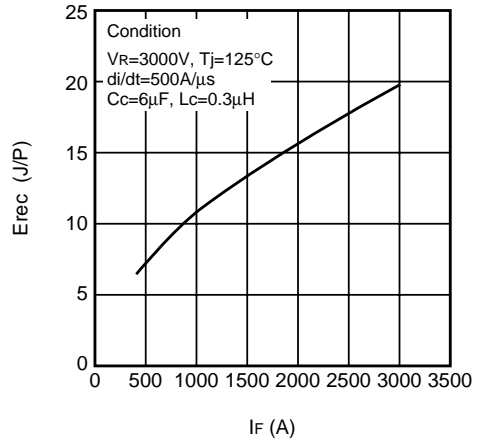
HIGH POWER, HIGH FREQUENCY  
PRESS PACK TYPE

## PERFORMANCE CURVES

**ON STATE CHARACTERISTICS (TYP.)**



**Erec VS If (TYP.)**



**MAXIMUM THERMAL IMPEDANCE CHARACTERISTIC (JUNCTION TO FIN)**

