

**PRELIMINARY**  
 Notice: This is not a final specification.  
 Some parametric limits are subject to change.

# MITSUBISHI SOFT RECOVERY DIODE

## FD1500AU-120DA

HIGH POWER, HIGH FREQUENCY  
 PRESS PACK TYPE

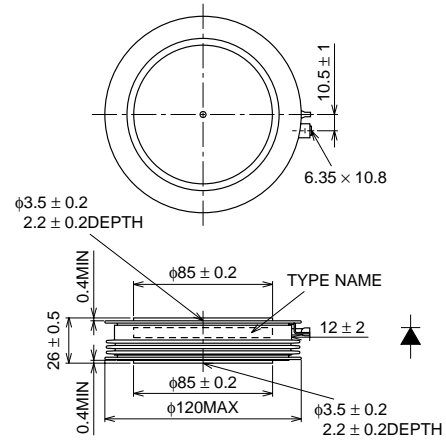
**FD1500AU-120DA**



- VRRM Repetitive peak reverse voltage ..... 6000V
- IT(AV) Average on-state current ..... 1200A

**OUTLINE DRAWING**

Dimensions in mm



### 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	1900	A
IF(AV)	Average forward current	$f = 60\text{Hz}$ , sinewave $\theta = 180^\circ$ , $T_f = 74^\circ\text{C}$	1200	A
IFSM	Surge forward current	One half cycle at 60Hz, $T_j = 125^\circ\text{C}$ start	26	kA
I <sup>2</sup> t	Current-squared, time integration		$2.8 \times 10^6$	A <sup>2</sup> s
di/dt	Critical rate of rise of reverse recovery current	IFM = 1500A, VR = 3000V, $T_j = 25/125^\circ\text{C}$ Cc = 6 $\mu\text{F}$ , Lc = 0.3 $\mu\text{H}$ (See Fig. 1, 2)	1000	A/ $\mu\text{s}$
Tj	Operation junction temperature		-40 ~ 125	°C
Tstg	Storage temperature		-40 ~ 150	°C
—	Mounting force required	(Recommended value 47kN)	39 ~ 55	kN
—	Weight	Typical value 1450g	—	g

### ELECTRICAL CHARACTERISTICS

Symbol	Parameter	Test conditions	Limits			Unit
			Min.	Typ.	Max.	
VFM	Forward voltage	IFM = 3400A, $T_j = 125^\circ\text{C}$	—	—	5	V
IRRM	Repetitive peak reverse current	VRM = 6000V, $T_j = 125^\circ\text{C}$	—	—	150	mA
QRR	Reverse recovery charge	IFM = 1500A, di/dt = 1000A/ $\mu\text{s}$ , VR = 3000V, $T_j = 125^\circ\text{C}$	—	—	5400	$\mu\text{C}$
Erec	Reverse recovery energy	Cc = 6 $\mu\text{F}$ , Lc = 0.3 $\mu\text{H}$ (See Fig. 1, 2)	—	—	9.4	J/P
Rth(j-f)	Thermal resistance	Junction to Fin	—	—	0.0071	K/W

Jul. 2002



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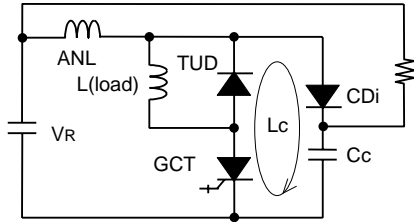


Fig. 1 Reverse recovery test circuit

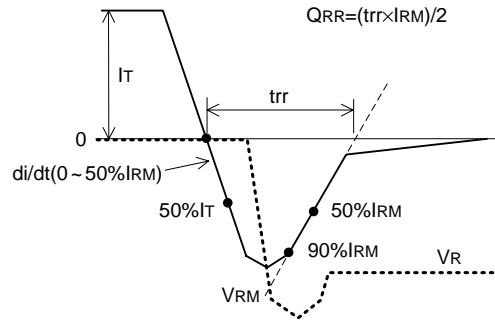


Fig. 2 Reverse recovery waveform

PERFORMANCE CURVES

