

# FD1500BV-90DA

HIGH POWER, HIGH FREQUENCY,  
PRESS PACK TYPE

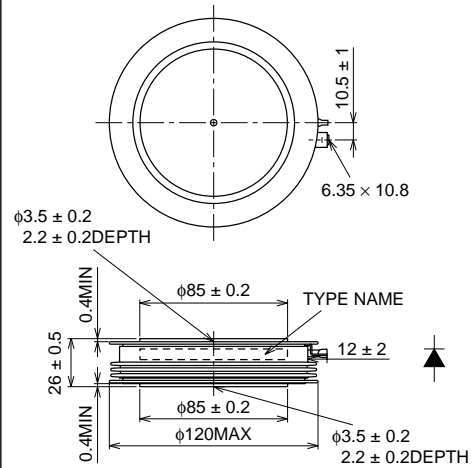
**FD1500BV-90DA**



- $I_{F(AV)}$  Average forward current ..... 1500A
- $V_{RRM}$  Repetitive peak reverse voltage ..... 4500V
- $Q_{RR}$  Reverse recovery charge ..... 3600 $\mu$ C
- Press pack type

**OUTLINE DRAWING**

Dimensions in mm



## APPLICATION

Free wheel diode for GCT Thyristor  
High-power inverters  
Power supplies as high frequency rectifiers

## MAXIMUM RATINGS

Symbol	Parameter	Voltage class	Unit
$V_{RRM}$	Repetitive peak reverse voltage	4500	V
$V_{RSM}$	Non-repetitive peak reverse voltage	4500	V
$V_{R(DC)}$	DC reverse voltage	3600	V
$V_{LTDS}$	Long term DC stability voltage at 100FIT	3000	V

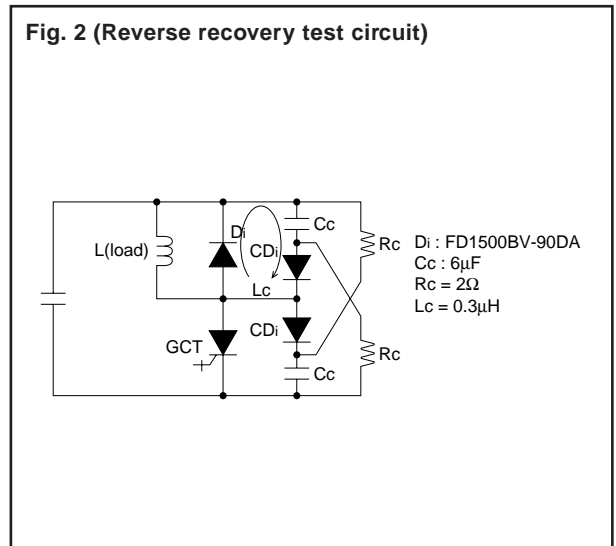
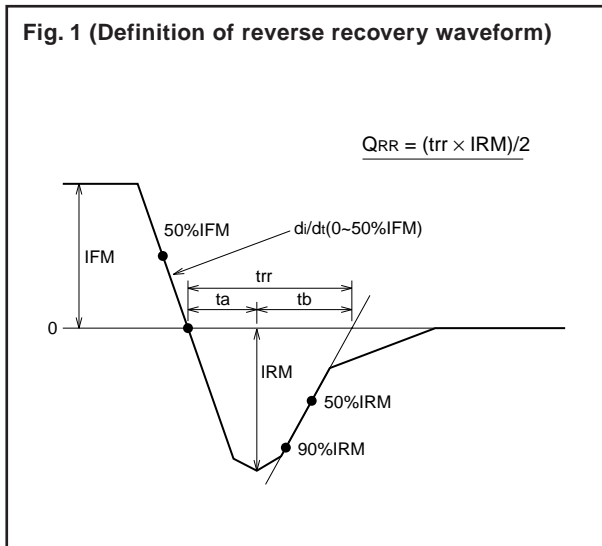
Symbol	Parameter	Conditions	Ratings	Unit
$I_{F(RMS)}$	RMS forward current	Applied for all conduction angles	2350	A
$I_{F(AV)}$	Average forward current	$f = 60\text{Hz}$ , sine wave $\theta = 180^\circ$ , $T_f = 65^\circ\text{C}$	1500	A
$I_{FSM}$	Surge forward current	One half cycle at 60Hz, $T_j = 125^\circ\text{C}$	30	kA
$I^2t$	Current-squared, time integration		$3.7 \times 10^6$	$\text{A}^2\text{s}$
$di/dt$	Critical rate of rise of reverse recovery current	$I_{FM} = 1500\text{A}$ , $V_R \leq 2250\text{V}$ , $T_j = 125^\circ\text{C}$ , With clamp circuit (Refer to Fig. 1 and Fig. 2)	2000	$\text{A}/\mu\text{s}$
$T_j$	Junction temperature		-20 ~ 125	$^\circ\text{C}$
$T_{stg}$	Storage temperature		-40 ~ 150	$^\circ\text{C}$
—	Mounting force required	(Recommended value 47kN)	39 ~ 55	kN
—	Weight	Typical 1220g	—	g

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## ELECTRICAL CHARACTERISTICS

Symbol	Parameter	Test conditions	Limits			Unit
			Min.	Typ.	Max.	
I <sub>RRM</sub>	Repetitive peak reverse current	V <sub>RM</sub> = 4500V, T <sub>j</sub> = 125°C	—	—	150	mA
V <sub>FM</sub>	Forward voltage	I <sub>FM</sub> = 3400A, T <sub>j</sub> = 125°C	—	—	3.5	V
Q <sub>RR</sub>	Reverse recovery charge	I <sub>FM</sub> = 1500A, di/dt = 1000A/μs, V <sub>R</sub> = 2250V,	—	—	3600	μC
E <sub>rec</sub>	Reverse recovery loss	T <sub>j</sub> = 125°C	—	8.0	—	J/P
t <sub>b</sub> /t <sub>a</sub>	Soft recovery rate	With clamp circuit (Refer to Fig. 1 and Fig. 2)	—	2	—	—
R <sub>th(j-f)</sub>	Thermal resistance	Junction to fin	—	—	0.11	°C/W



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## PERFORMANCE CURVES

