

MITSUBISHI HIGH-FREQUENCY RECTIFIER DIODES

**FD1000FV-90**

HIGH POWER, HIGH FREQUENCY,  
PRESS PACK TYPE

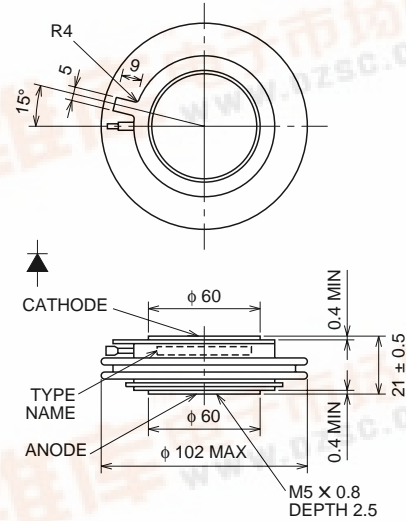
FD1000FV-90



- $I_{F(AV)}$  Average forward current ..... 800A
- $V_{RRM}$  Repetitive peak reverse voltage ..... 3500 ~ 4500V
- $Q_{RR}$  Reverse recovery charge ..... 1500 $\mu$ C
- Press pack type

OUTLINE DRAWING

Dimensions 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
		70	80	90	
$V_{RRM}$	Repetitive peak reverse voltage	3500	4000	4500	V
$V_{RSM}$	Non-repetitive peak reverse voltage	3500	4000	4500	V
$V_{R(DC)}$	DC reverse voltage	2800	3200	3600	V

Symbol	Parameter	Conditions	Ratings	Unit
$I_{F(RMS)}$	RMS forward current		1250	A
$I_{F(AV)}$	Average forward current	$f = 60\text{Hz}$ , sine wave $\theta = 180^\circ$ , $T_f = 88^\circ\text{C}$	800	A
$I_{FSM}$	Surge forward current	One half cycle at 60Hz, non-repetitive	20	kA
$I^2t$	Current-squared, time integration	One cycle at 60Hz	$1.7 \times 10^6$	$\text{A}^2\text{s}$
$T_j$	Junction temperature		-40 ~ +125	$^\circ\text{C}$
$T_{stg}$	Storage temperature		-40 ~ +150	$^\circ\text{C}$
—	Mounting force required	Recommended value 39.2	26.5 ~ 43.1	kN
—	Weight	Standard value	700	g

**ELECTRICAL CHARACTERISTICS**

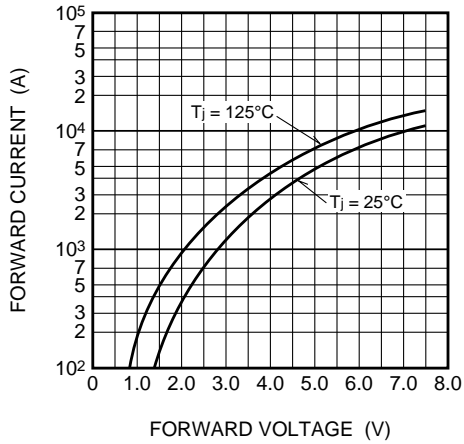
Symbol	Parameter	Test conditions	Limits			Unit
			Min	Typ	Max	
$I_{RRM}$	Repetitive peak reverse current	$T_j = 125^\circ\text{C}$ , $V_{RRM}$ Applied	—	—	150	mA
$V_{FM}$	Forward voltage	$T_j = 125^\circ\text{C}$ , $I_{FM} = 2500\text{A}$ , Instantaneous measurement	—	—	3.0	V
$Q_{RR}$	Reverse recovery charge	$I_{FM} = 800\text{A}$ , $di/dt = -30\text{A}/\mu\text{s}$ , $V_R = 150\text{V}$ , $T_j = 125^\circ\text{C}$	—	—	1500	$\mu\text{C}$
$R_{th(j-f)}$	Thermal resistance	Junction to fin	—	—	0.017	$^\circ\text{C}/\text{W}$

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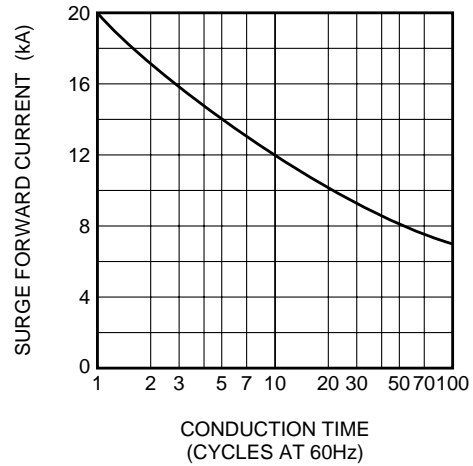
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**PERFORMANCE CURVES**

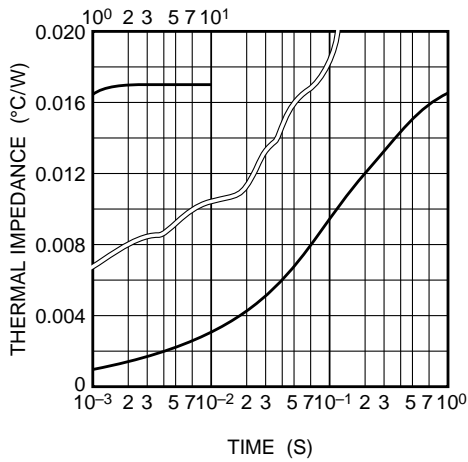
**MAXIMUM FORWARD CHARACTERISTICS**



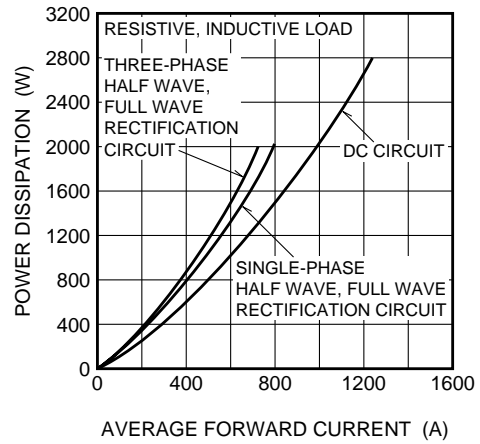
**RATED SURGE FORWARD CURRENT**



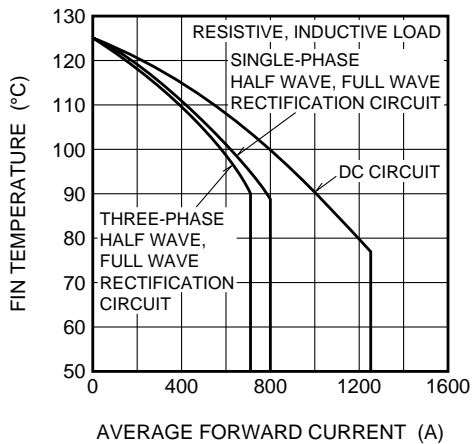
**MAXIMUM THERMAL IMPEDANCE CHARACTERISTIC (JUNCTION TO FIN)**



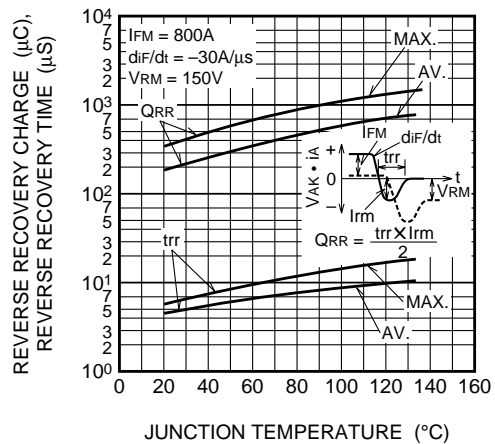
**MAXIMUM POWER DISSIPATION CHARACTERISTICS**



**ALLOWABLE FIN TEMPERATURE VS. AVERAGE FORWARD CURRENT**



**REVERSE RECOVERY CHARGE, REVERSE RECOVERY TIME VS. JUNCTION TEMPERATURE**



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