

MITSUBISHI HIGH-FREQUENCY RECTIFIER DIODES

FD1000FV-90

HIGH POWER, HIGH FREQUENCY,
PRESS PACK TYPE

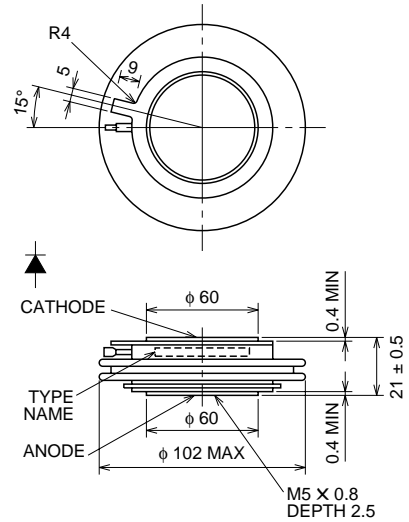
FD1000FV-90



- IF(AV) Average forward current 800A
- VRRM Repetitive peak reverse voltage 3500 ~ 4500V
- QRR Reverse recovery charge 1500μC
- Press pack type

OUTLINE DRAWING

Dimensions in mm



APPLICATION

High-power inverters, Fly-wheel diodes in DC choppers, Power supplies as high frequency rectifiers.

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MAXIMUM RATINGS

Symbol	Parameter	Voltage class			Unit
		70	80	90	
VRRM	Repetitive peak reverse voltage	3500	4000	4500	V
VRSM	Non-repetitive peak reverse voltage	3500	4000	4500	V
VR(DC)	DC reverse voltage	2800	3200	3600	V

Symbol	Parameter	Conditions	Ratings	Unit
IF(RMS)	RMS forward current		1250	A
IF(AV)	Average forward current	f = 60Hz, sine wave θ = 180°, T _f = 88°C	800	A
IFSM	Surge forward current	One half cycle at 60Hz, non-repetitive	20	kA
I ² t	Current-squared, time integration	One cycle at 60Hz	1.7 × 10 ⁶	A ² s
T _j	Junction temperature		-40 ~ +125	°C
T _{stg}	Storage temperature		-40 ~ +150	°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	
IRRM	Repetitive peak reverse current	T _j = 125°C, VRRM Applied	—	—	150	mA
VFM	Forward voltage	T _j = 125°C, IFM = 2500A, Instantaneous measurement	—	—	3.0	V
QRR	Reverse recovery charge	IFM = 800A, diF/dt = -30A/μs, VR = 150V, T _j = 125°C	—	—	1500	μC
R _{th(j-f)}	Thermal resistance	Junction to fin	—	—	0.017	°C/W

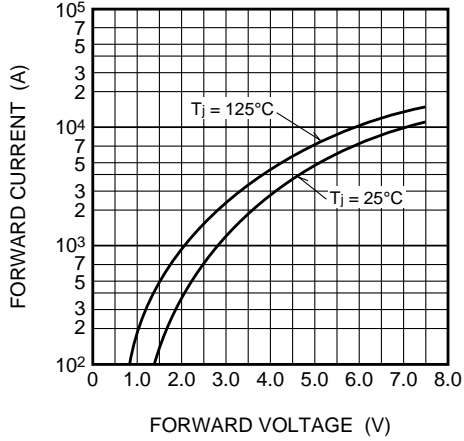
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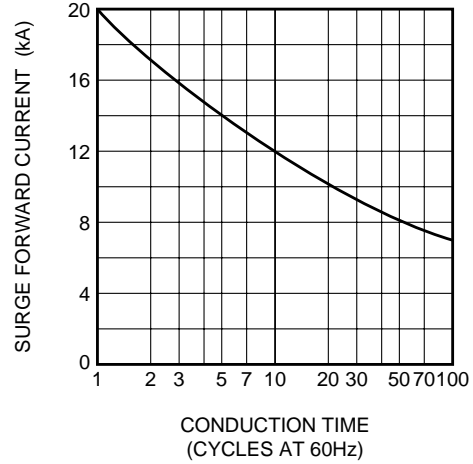
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PERFORMANCE CURVES

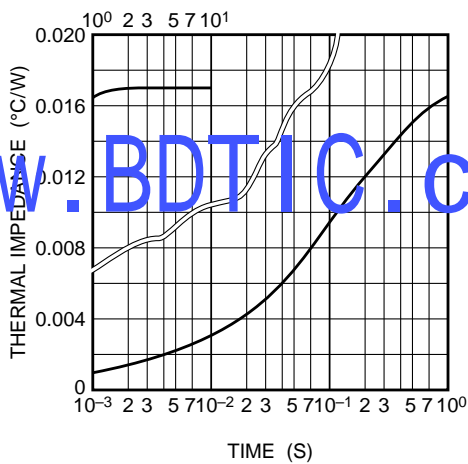
MAXIMUM FORWARD CHARACTERISTICS



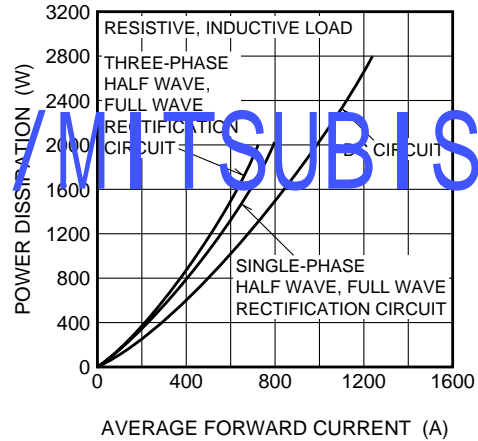
RATED SURGE FORWARD CURRENT



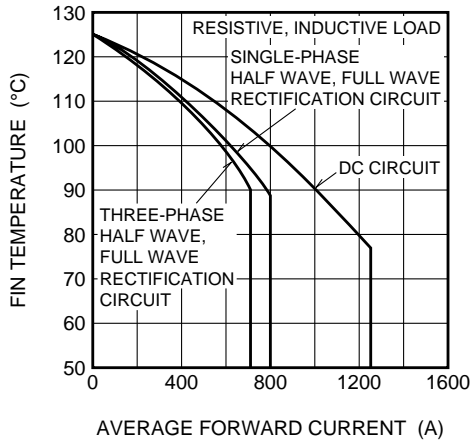
MAXIMUM THERMAL IMPEDANCE CHARACTERISTIC (JUNCTION TO FIN)



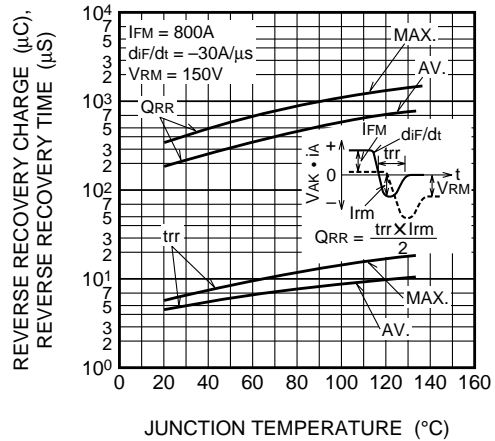
MAXIMUM POWER DISSIPATION CHARACTERISTICS



ALLOWABLE FIN TEMPERATURE VS. AVERAGE FORWARD CURRENT



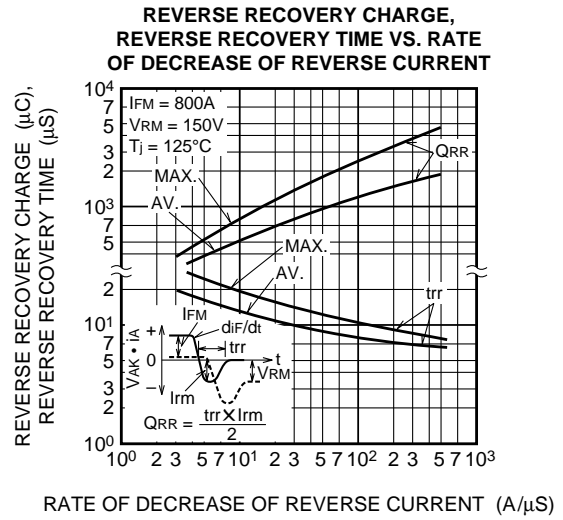
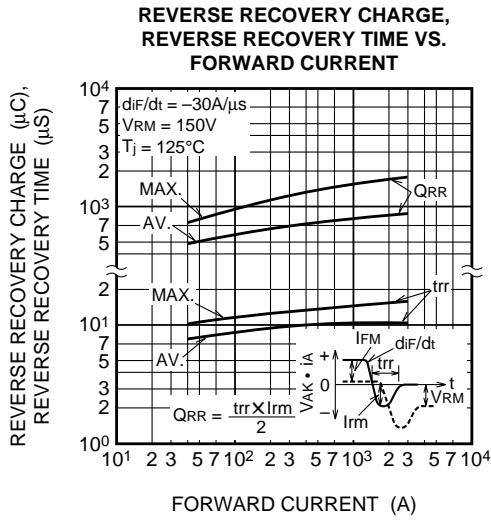
REVERSE RECOVERY CHARGE, REVERSE RECOVERY TIME VS. JUNCTION TEMPERATURE



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