


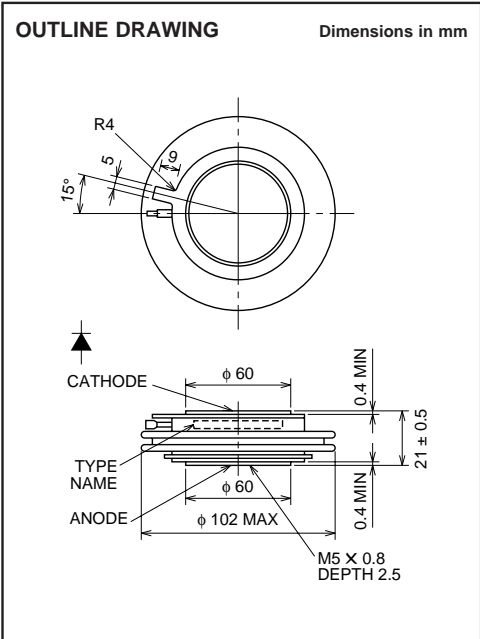
FD1000FV-90

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 μ C
- Press pack type



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_t^2	Current-squared, time integration	One cycle at 60Hz	1.7×10^6	A^2s
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	μC
$R_{th(j-f)}$	Thermal resistance	Junction to fin	—	—	0.017	$^\circ\text{C}/\text{W}$

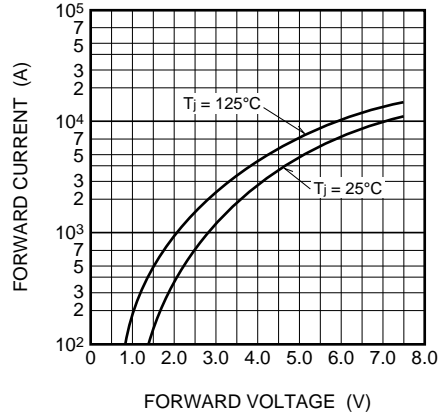


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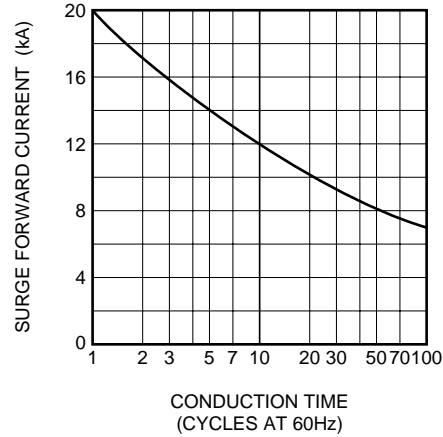
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PERFORMANCE CURVES

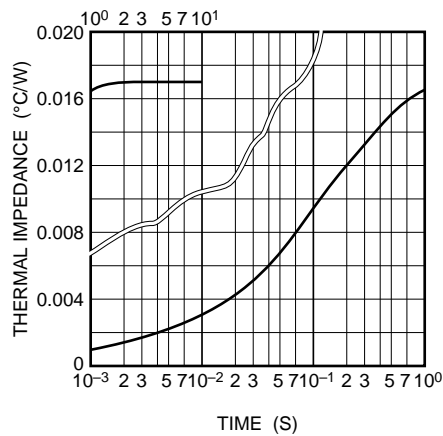
MAXIMUM FORWARD CHARACTERISTICS



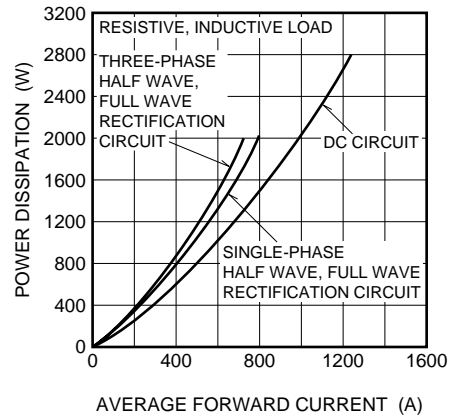
RATED SURGE FORWARD CURRENT



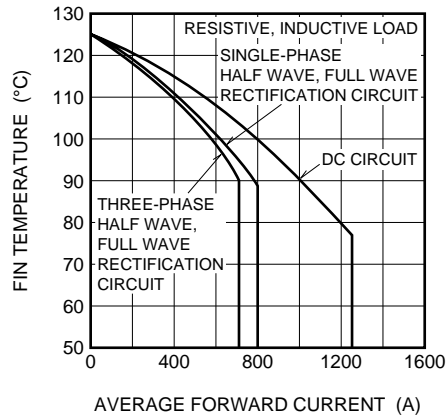
MAXIMUM THERMAL IMPEDANCE CHARACTERISTIC (JUNCTION TO FIN)



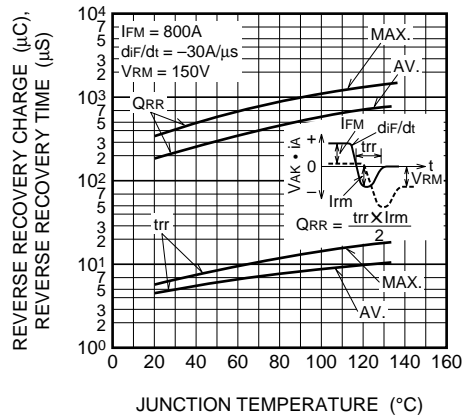
MAXIMUM POWER DISSIPATION CHARACTERISTICS



ALLOWABLE FIN TEMPERATURE VS. AVERAGE FORWARD CURRENT



REVERSE RECOVERY CHARGE, REVERSE RECOVERY TIME VS. JUNCTION TEMPERATURE



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