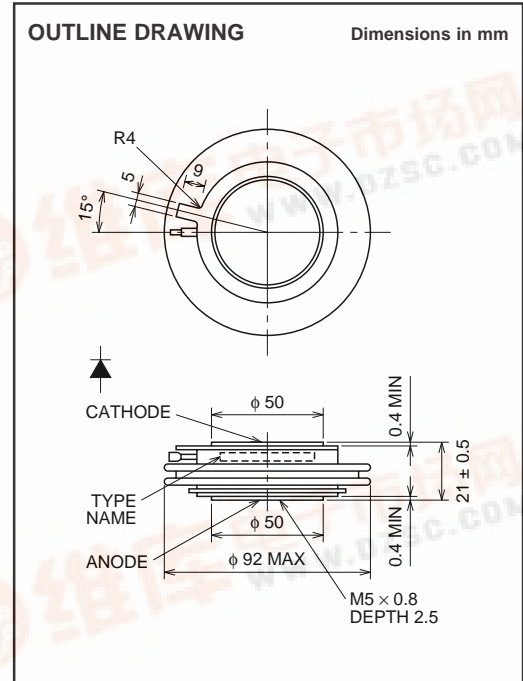


MITSUBISHI HIGH-FREQUENCY RECTIFIER DIODES

# FD1000FH-56

HIGH POWER, HIGH FREQUENCY,  
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
		50	56	
$V_{RRM}$	Repetitive peak reverse voltage	2500	2800	V
$V_{RSM}$	Non-repetitive peak reverse voltage	2800	3100	V
$V_{R(DC)}$	DC reverse voltage	2000	2240	V

Symbol	Parameter	Conditions	Ratings	Unit
$I_{F(RMS)}$	RMS forward current		1570	A
$I_{F(AV)}$	Average forward current	$f = 60\text{Hz}$ , sine wave $\theta = 180^\circ$ , $T_r = 79^\circ\text{C}$	1000	A
$I_{FSM}$	Surge forward current	One half cycle at 60Hz, non-repetitive	25	kA
$I^2t$	Current-squared, time integration	One cycle at 60Hz	$2.6 \times 10^5$	$\text{A}^2\text{s}$
$T_j$	Junction temperature		$-40 \sim +125$	$^\circ\text{C}$
$T_{stg}$	Storage temperature		$-40 \sim +150$	$^\circ\text{C}$
—	Mounting force required	Recommended value 29.4	26.5 ~ 35.3	kN
—	Weight	Standard value		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	—	—	80	mA
$V_{FM}$	Forward voltage	$T_j = 125^\circ\text{C}$ , $I_{FM} = 2500\text{A}$ , Instantaneous measurement	—	—	1.9	V
$Q_{RR}$	Reverse recovery charge	$I_{FM} = 1000\text{A}$ , $diF/dt = -30\text{A}/\mu\text{s}$ , $V_R = 150\text{V}$ , $T_j = 125^\circ\text{C}$	—	—	1000	$\mu\text{C}$
$R_{th(j-f)}$	Thermal resistance	Junction to fin	—	—	0.025	$^\circ\text{C}/\text{W}$

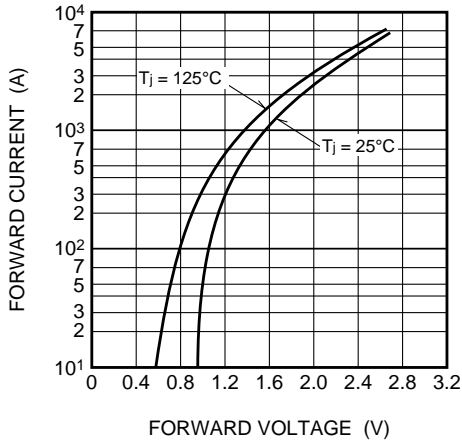


**FD1000FH-56**

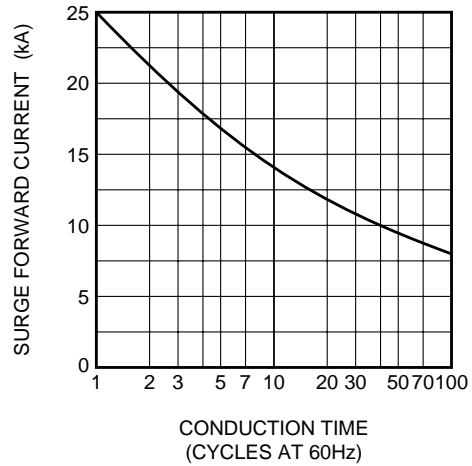
**HIGH POWER, HIGH FREQUENCY,  
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**PERFORMANCE CURVES**

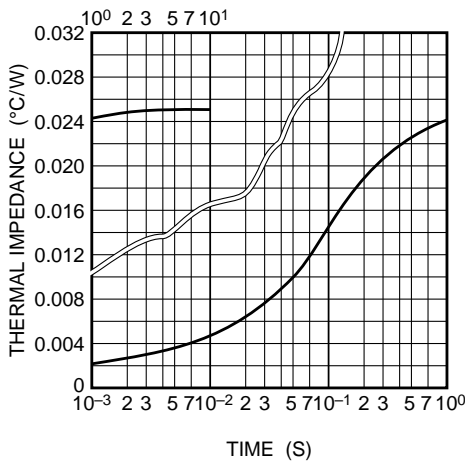
**MAXIMUM FORWARD CHARACTERISTICS**



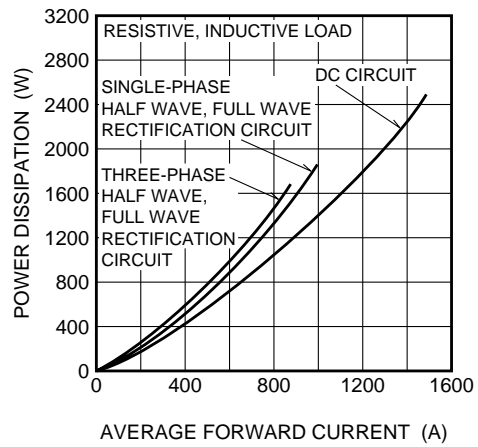
**RATED SURGE FORWARD CURRENT**



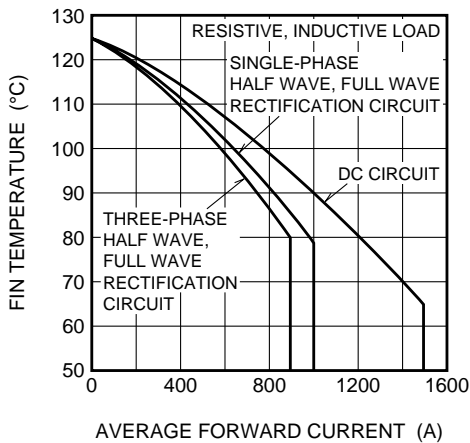
**MAXIMUM THERMAL IMPEDANCE CHARACTERISTIC (JUNCTION TO FIN)**



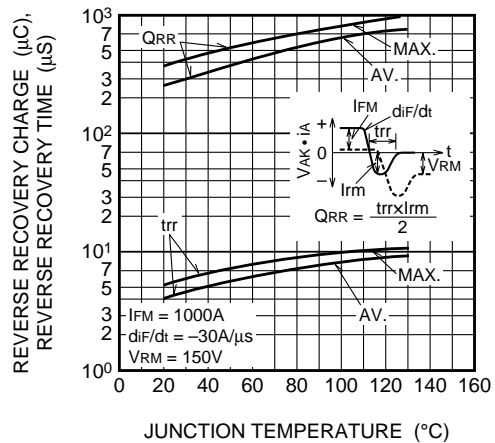
**MAXIMUM POWER DISSIPATION CHARACTERISTICS**



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



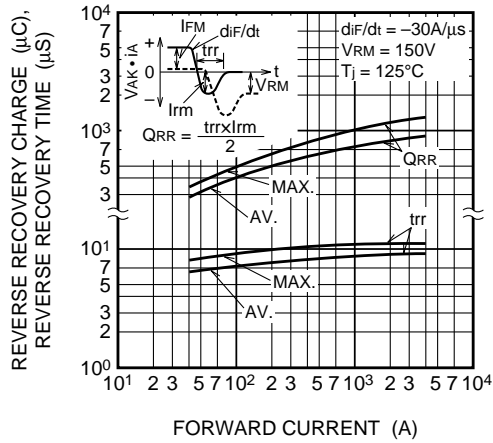
**REVERSE RECOVERY CHARGE, REVERSE RECOVERY TIME VS. JUNCTION TEMPERATURE**



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**REVERSE RECOVERY CHARGE,  
REVERSE RECOVERY TIME VS.  
FORWARD CURRENT**



**REVERSE RECOVERY CHARGE,  
REVERSE RECOVERY TIME VS. RATE  
OF DECREASE OF REVERSE CURRENT**

