

# Three Phase Rectifier Bridge Module

**V<sub>RRM</sub>** 1200 to 2200V  
**I<sub>D</sub>** 300 Amp

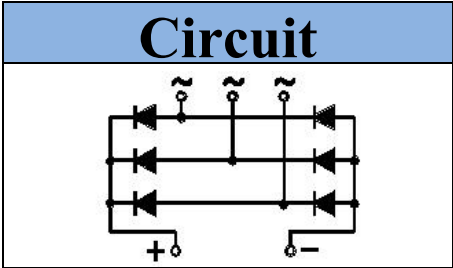


## Features

- Very low forward voltage drop
- High surge current capability

## Applications

- Inverter for AC or DC motor control
- Current stabilized power supply
- Switching power supply



## Module Type

Type	V <sub>RRM</sub>	V <sub>RSM</sub>
MDS300-12	1200V	1300V
MDS300-16	1600V	1700V
MDS300-18	1800V	1900V
MDS300-20	2000V	2100V
MDS300-22	2200V	2300V

## Maximum Ratings

Symbol	Item	Conditions	Values	Unit
I <sub>D</sub>	Output Current	Three Phase, Full Wave T <sub>c</sub> = 100°C	300	A
I <sub>FSM</sub>	Surge Forward Current	T <sub>j</sub> = 25°C, t = 50Hz(10ms), V <sub>R</sub> = 0V	4800	A
I <sup>2</sup> t	Circuit Fusing Consideration	t = 10ms T <sub>j</sub> = 25°C	115200	A²s
V <sub>ISO</sub>	Isolation Breakdown Voltage	AC 50Hz/60Hz; R.M.S; 1min	2500	V
T <sub>j</sub>	Operating Junction Temperature		-40 to +150	°C
T <sub>stg</sub>	Storage Temperature		-40 to +125	°C
M <sub>t</sub>	Mounting Torque	To Terminals(M6)	5±15%	N·m
		To Terminals(M8)	7±15%	
M <sub>s</sub>		To Heatsink(M6)	5±15%	
Weight	Module (Approximately)		580	g

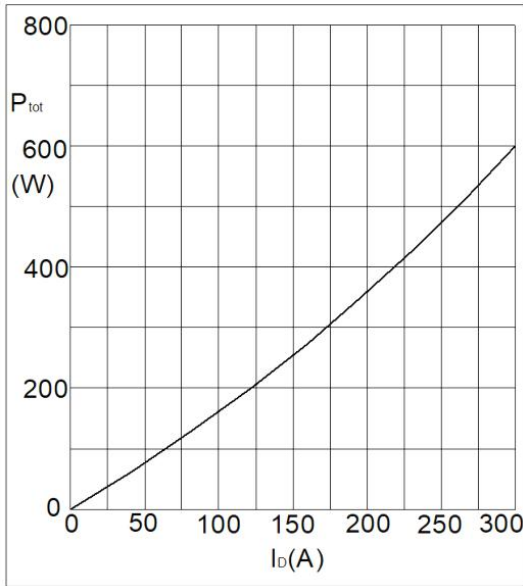
## Thermal Characteristics

Symbol	Item	Conditions	Values	Unit
R <sub>th(j-c)</sub>	Thermal Impedance, Max	Junction to Case(Per Module)	0.08	°C/W
		Junction to Case(Per Diode)	0.48	°C/W
R <sub>th(c-s)</sub>	Thermal Impedance, Max	Case to Heat Sink	0.02	°C/W

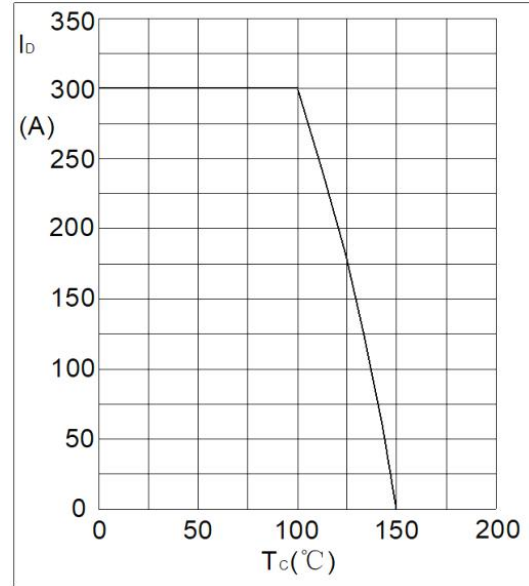
## Electrical Characteristics

Symbol	Item	Conditions	Values			Unit
			Min.	Typ.	Max.	
V <sub>FM</sub>	Forward Voltage Drop, Max	T <sub>j</sub> = 25°C I <sub>F</sub> = 300A	—	—	1.30	V
I <sub>RRM</sub>	Repetitive Peak Reverse Current, Max	T <sub>j</sub> = 25°C V <sub>R</sub> = V <sub>RRM</sub>	—	—	0.1	mA
		T <sub>j</sub> = 150°C V <sub>R</sub> = V <sub>RRM</sub>	—	—	10	
V <sub>T0</sub>	Threshold Voltage, for power loss calculation only	T <sub>j</sub> = 125°C	0.70			V
r <sub>T</sub>	Slope Resistance, for power loss calculation only	T <sub>j</sub> = 125°C	1.0			mΩ

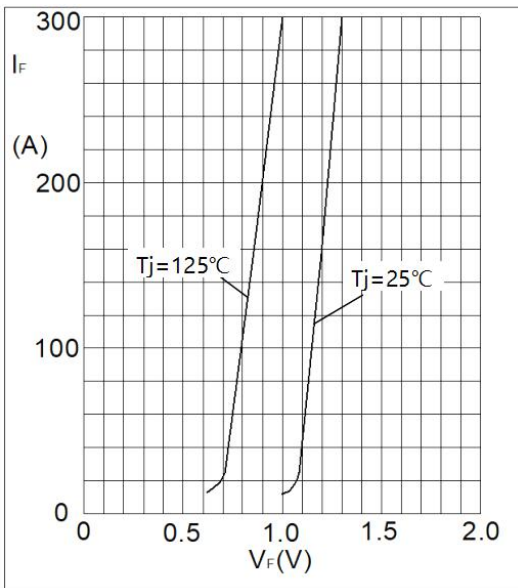
## Performance Curves



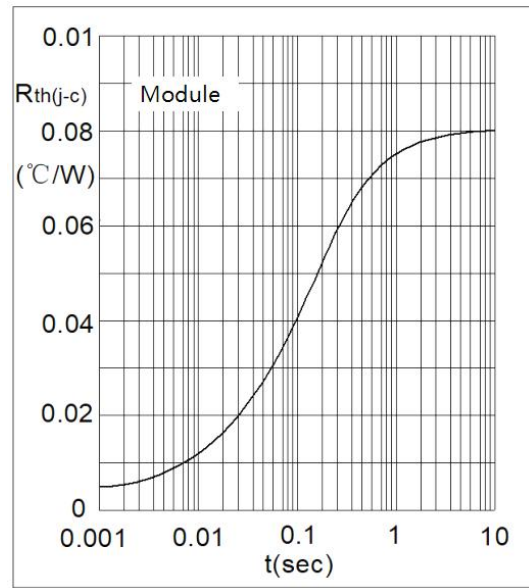
**Fig1. Power Dissipation**



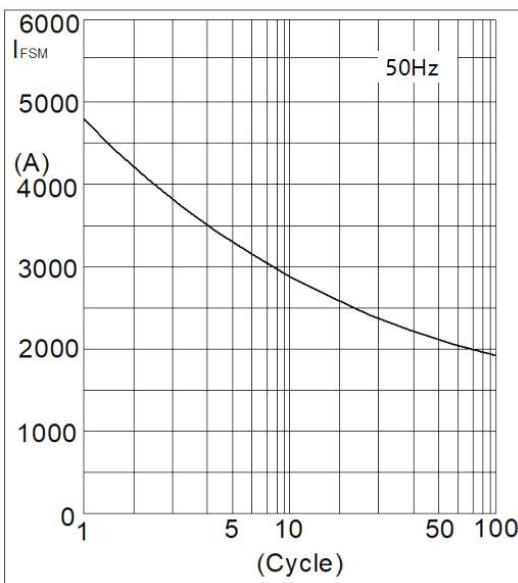
**Fig2. Forward Current Derating Curve**



**Fig3. Forward Characteristics**



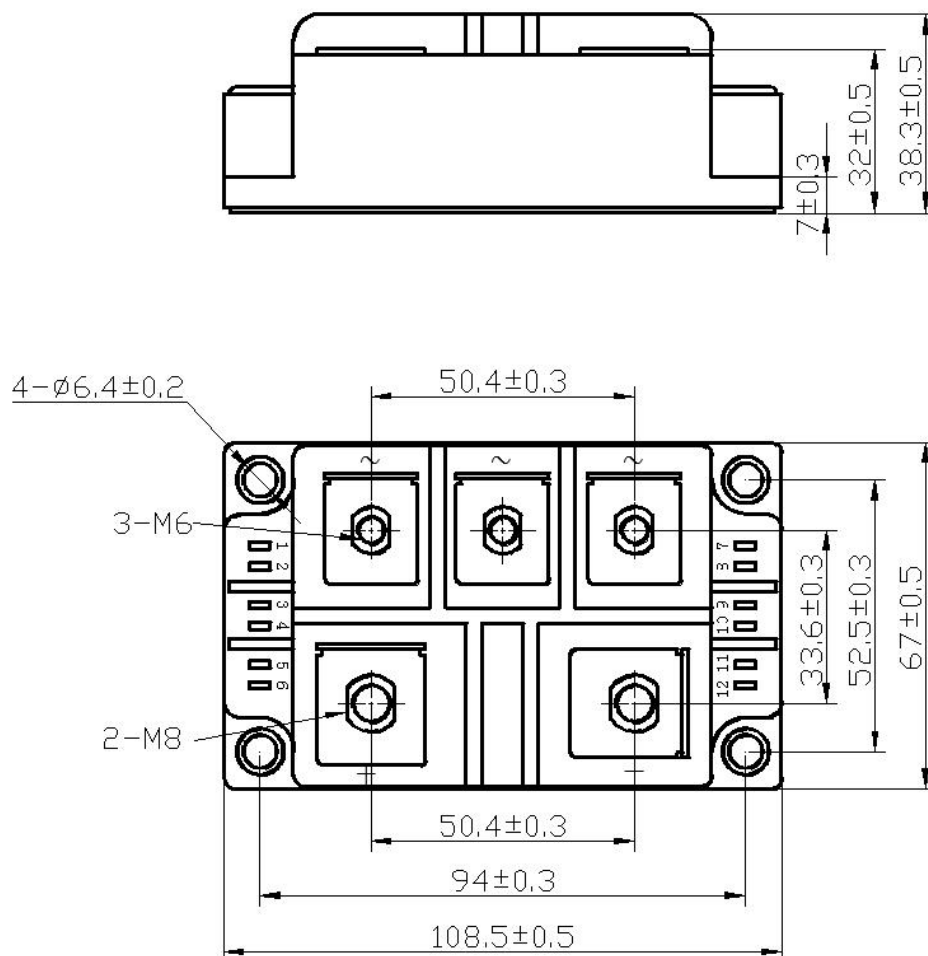
**Fig4. Transient Thermal impedance**



**Fig5. Max Non-Repetitive Forward Surge Current**

Package Outline Information

**CASE: M25**



**Dimensions in mm**

**\*IMPORTANT INFORMATION AND WARNINGS**

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