

## Three Phase Rectifier Bridge Module

$V_{RRM}$  1200 to 2000V  
 $I_D$  100 Amp

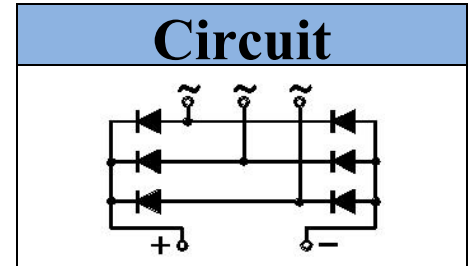


### Features

- Aluminum oxide DBC
- Glass passivated chip

### Applications

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



### Module Type

Type	$V_{RRM}$	$V_{RSM}$
MDS100J-12	1200V	1300V
MDS100J-16	1600V	1700V
MDS100J-18	1800V	1900V
MDS100J-20	2000V	2100V

### Maximum Ratings

Symbol	Item	Conditions	Values	Unit
$I_D$	Output Current	Three Phase, Full Wave $T_c = 108^\circ\text{C}$	100	A
$I_{FSM}$	Surge Forward Current	$T_j = 25^\circ\text{C}$ , $t = 50\text{Hz}(10\text{ms})$ , $V_R = 0\text{V}$	1000	A
$I^2t$	Circuit Fusing Consideration	$t = 10\text{ms}$ $T_j = 25^\circ\text{C}$	5000	$\text{A}^2\text{s}$
$V_{ISO}$	Isolation Breakdown Voltage	AC 50Hz/60Hz; R.M.S; 1min	3000	V
$T_j$	Operating Junction Temperature		-40 to +150	$^\circ\text{C}$
$T_{stg}$	Storage Temperature		-40 to +125	$^\circ\text{C}$
$M_t$	Mounting Torque	To Terminals(M5)	$3 \pm 15\%$	N·m
$M_s$		To Heatsink(M5)	$3 \pm 15\%$	
Weight	Module (Approximately)		145	g

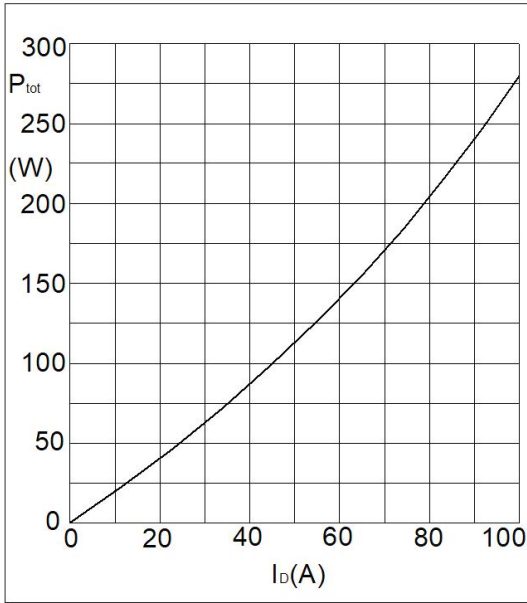
### Thermal Characteristics

Symbol	Item	Conditions	Values	Unit
$R_{th(j-c)}$	Thermal Impedance, Max	Junction to Case(Per Module)	0.15	$^\circ\text{C}/\text{W}$
		Junction to Case(Per Diode)	0.90	$^\circ\text{C}/\text{W}$
$R_{th(c-s)}$	Thermal Impedance, Max	Case to Heat Sink	0.05	$^\circ\text{C}/\text{W}$

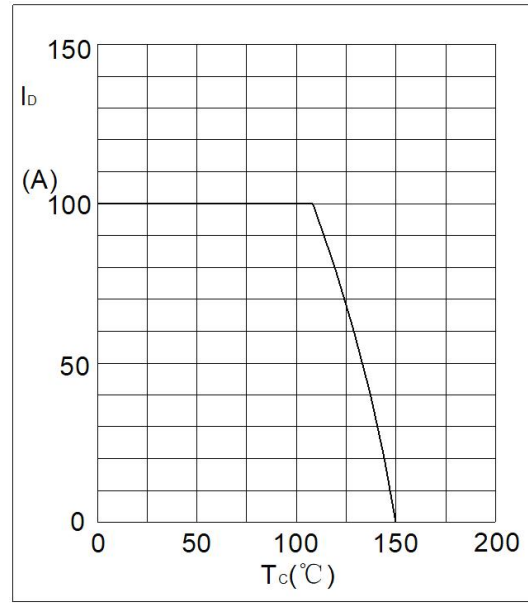
### Electrical Characteristics

Symbol	Item	Conditions	Values			Unit
			Min.	Typ.	Max.	
$V_{FM}$	Forward Voltage Drop, Max	$T_j = 25^\circ\text{C}$ $I_F = 100\text{A}$	—	—	1.45	V
$I_{RRM}$	Repetitive Peak Reverse Current, Max	$T_j = 25^\circ\text{C}$ $V_R = V_{RRM}$	—	—	0.1	mA
		$T_j = 150^\circ\text{C}$ $V_R = V_{RRM}$	—	—	5	
$V_{T0}$	Threshold Voltage, for power loss calculation only	$T_j = 125^\circ\text{C}$	0.85			V
$r_T$	Slope Resistance, for power loss calculation only	$T_j = 125^\circ\text{C}$	5.5			m $\Omega$

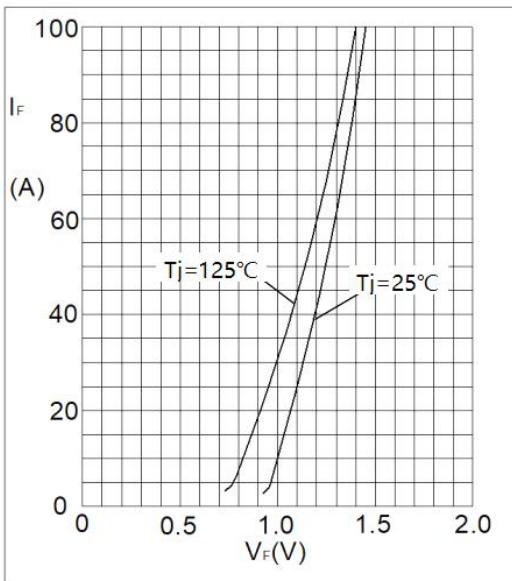
**Performance Curves**



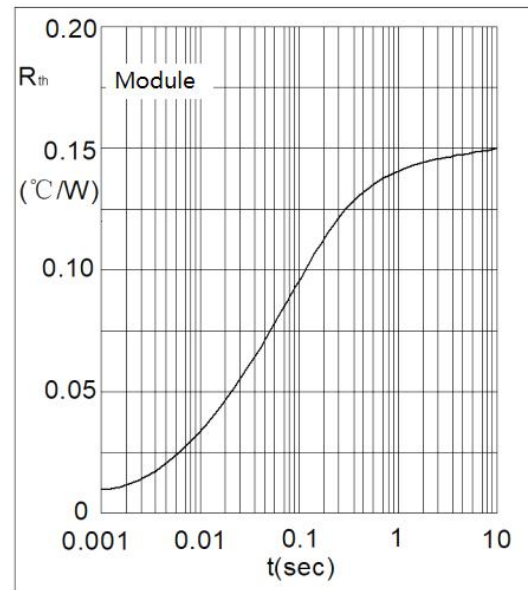
**Fig1. Power Dissipation**



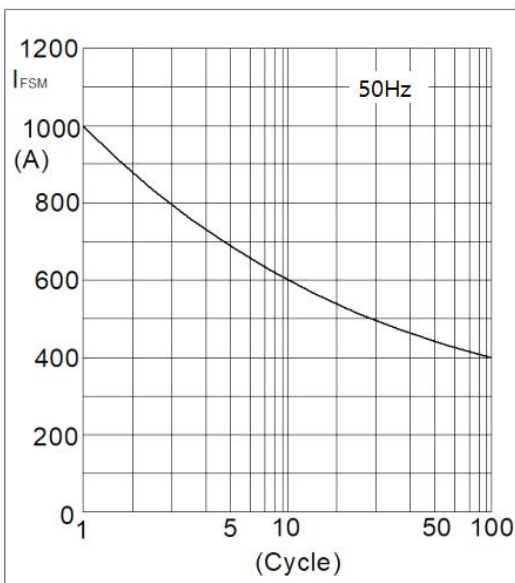
**Fig2. Forward Current Derating Curve**



**Fig3. Forward Characteristics**



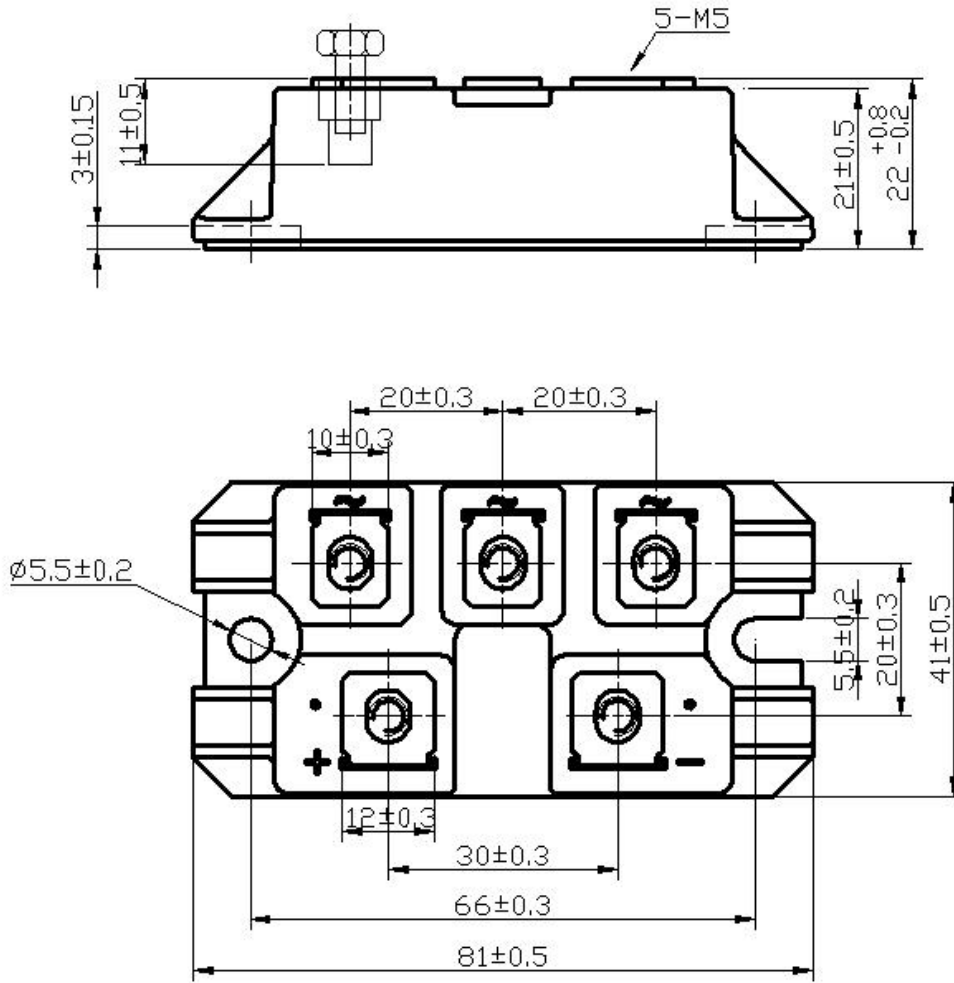
**Fig4. Transient Thermal impedance**



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

Package Outline Information

**CASE: M52J**



**Dimensions in mm**

**\*IMPORTANT INFORMATION AND WARNINGS**

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