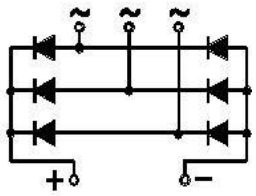
Three Phase Rectifier Bridge Module

V_{RRM}	1200 to 2200V
I_D	500 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_{RRM}	V_{RSM}
HR32MDS500N12	1200V	1300V
HR32MDS500N16	1600V	1700V
HR32MDS500N18	1800V	1900V
HR32MDS500N20	2000V	2100V
HR32MDS500N22	2200V	2300V

Maximum Ratings

Symbol	Item	Conditions	Values	Unit
ID	Output Current	Three Phase, Full Wave T_c = 100℃	500	A
IFSM	Surge Forward Current	T_j = 25℃, t = 50Hz(10ms), V_R = 0V	7500	A
I^2t	Circuit Fusing Consideration	t = 10ms T_j =25℃	281250	A^2s
VISO	Isolation Breakdown Voltage	AC 50Hz/60Hz; R.M.S; 1min	2500	V
Tj	Operating Junction temperature		-40 to +150	℃
Tstg	Storage Temperature		-40 to +125	℃
Mt	Mounting Torque	To Terminals(M8)	7±15%	N·m
		To Terminals(M10)	12±15%	
Ms		To Heatsink(M6)	5±15%	
Weight	Module (Approximately)		1100	g

Thermal Characteristics

Symbol	Item	Conditions	Values	Unit
Rth(j-c)	Thermal Impedance, Max	Junction to Case(Per Module)	0.05	℃/W
		Junction to Case(Per Diode)	0.30	℃/W
Rth(c-s)	Thermal Impedance, Max	Case to Heat Sink	0.015	℃/W

Electrical Characteristics

Symbol	Item	Conditions	Values			Unit
			Min.	Typ.	Max.	
V_{FM}	Forward Voltage Drop, Max	T_j = 25℃ I_F = 500A	—	—	1.30	V
I_{RRM}	Repetitive Peak Reverse Current, Max	T_j = 25℃ $V_R = V_{RRM}$	—	—	0.1	mA
		T_j = 150℃ $V_R = V_{RRM}$	—	—	10	
V_{T0}	Threshold Voltage, for power loss calculation only	T_j = 125℃	0.70			V
r_T	Slope Resistance, for power loss calculation only	T_j = 125℃	0.60			mΩ

Characteristics Diagrams

Fig1. Power Dissipation Curve

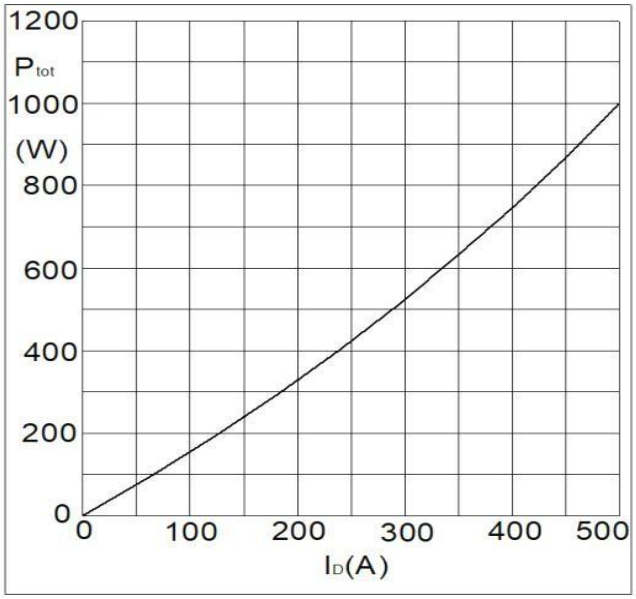


Fig2. Forward Current Derating

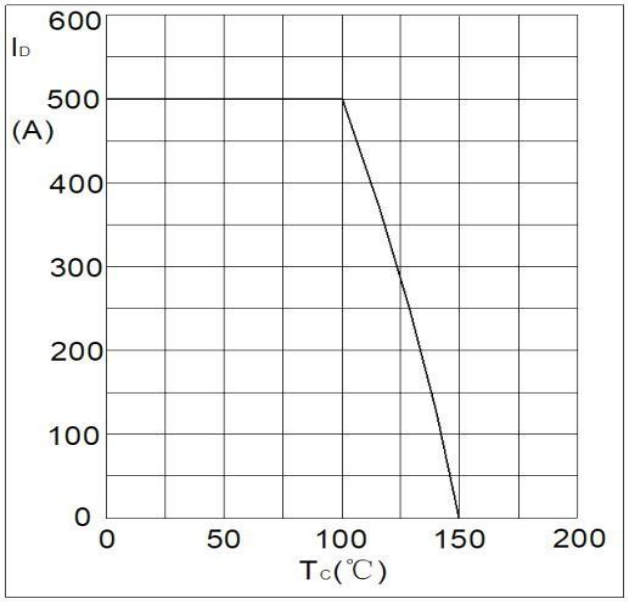


Fig3. Forward Characteristics

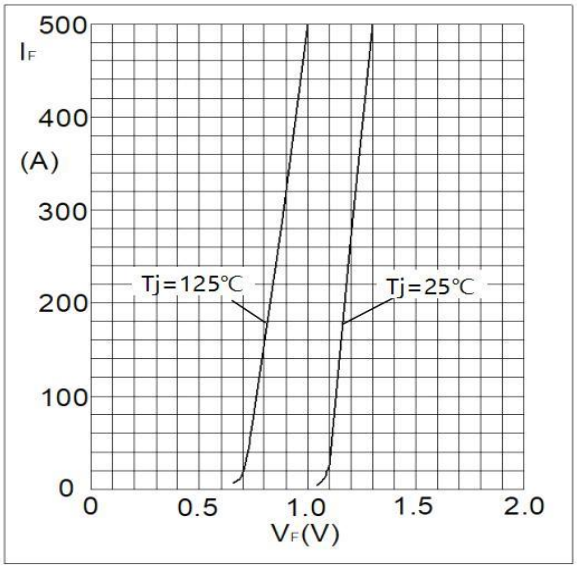


Fig4. Transient Thermal impedance

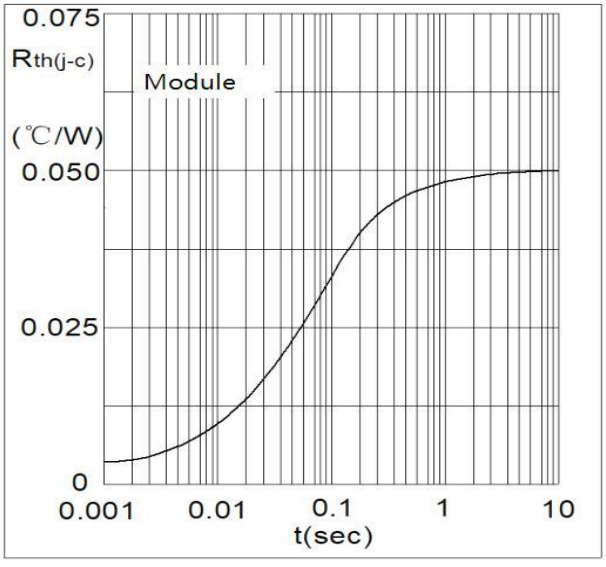
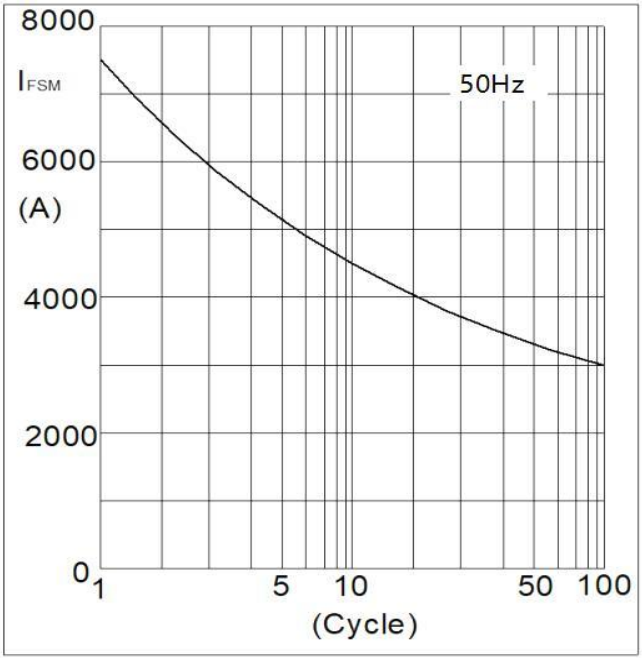
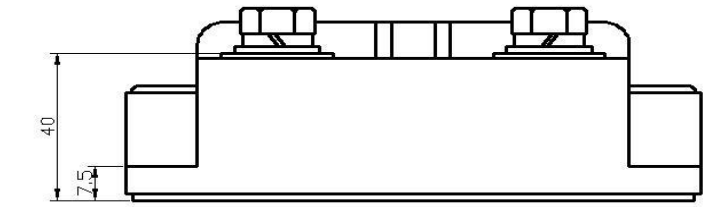


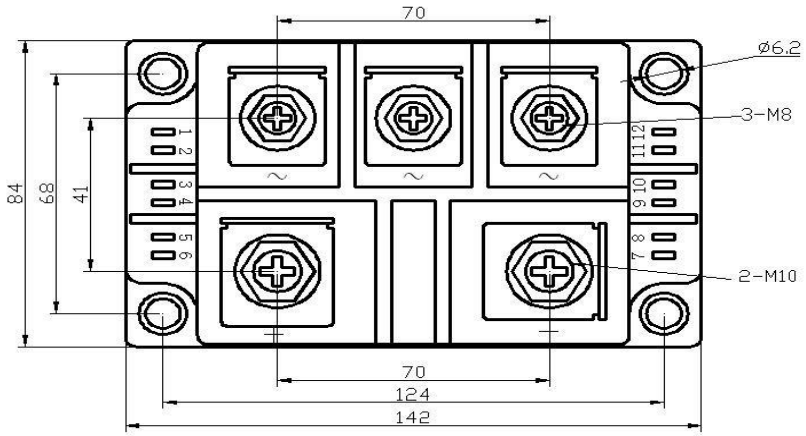
Fig5. Max Non-Repetitive Forward Surge Current



Package Outlines

CASE: M34





Dimensions in mm

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2）Implement redundancy, fire-prevention measures, and malfunction prevention protocols;

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4）Designers must ensure Hypersemi products operate strictly within specified parameters defined in the latest product specifications.