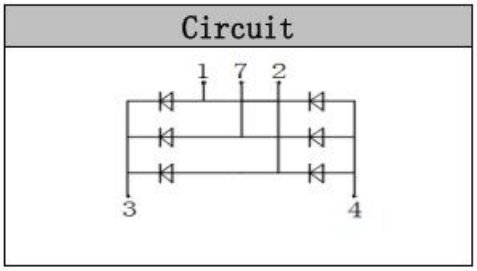


Circuit



Glass Passivated Three Phase Rectifier Bridge

V_{RRM} 800 to 2000V
ID 50 A

Applications

- Three phase rectifiers for power supplies
- Rectifiers for DC motor field supplies
- Battery charger rectifiers
- Input rectifiers for variable frequency drives

Features

- Three phase bridge rectifier
- Blocking voltage:800 to 2000V
- Heat transfer through aluminum oxide DBC ceramic isolated metal baseplate
- Glass passivated chip

Module Type

TYPE	V_{RRM}	V_{RSM}
MD50S08M1	800V	900V
MD50S12M1	1200V	1300V
MD50S16M1	1600V	1700V
MD50S18M1	1800V	1900V
MD50S20M1	2000V	2100V

Maximum Ratings

Symbol	Conditions	Values	Units
I_D	Three phase, full wave Tc=100℃	50	A
I_{FSM}	t=10ms T_J=25℃	650	A
I^2t	t=10ms T_J=25℃	2100	A^2s
V_{ISO}	AC 50Hz/60Hz; R.M.S; 1min	3000	V
T_J		-40 to +150	℃
Tstg		-40 to +125	℃
Ms	To Heatsink(M5)	3±15%	N·m
Weight		80	g

Thermal Characteristics

Symbol	Conditions	Values	Units
Rth(j-c)	Junction to Case(Per Diode)	1.0	℃/W
Rth(c-s)	Case to Heat Sink	0.2	℃/W

Electrical Characteristics

Symbol	Conditions	Values			Units
		Min.	Typ.	Max.	
V_{FM}	T_J=25℃ I_F =150A	—	1.5	1.8	V
I_{RD}	T_J=150℃ V_R=V_{RRM}	—	—	5	mA
r_F	T_J=125℃		4.5		mΩ
VF0			0.8		V

Performance Curves

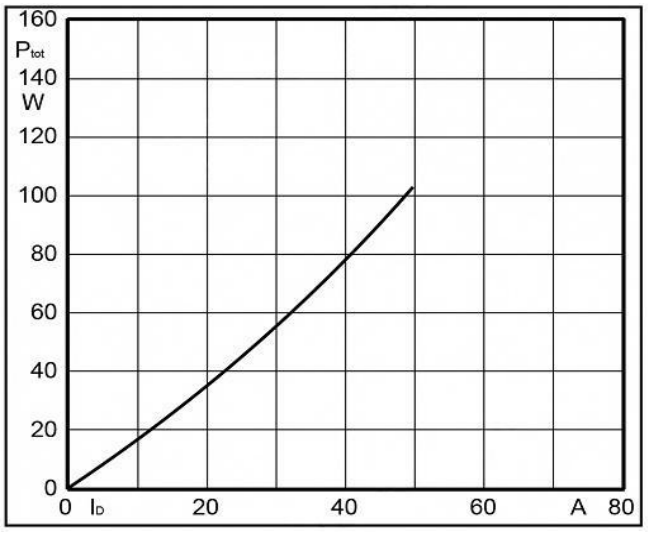


Fig1. Power dissipation

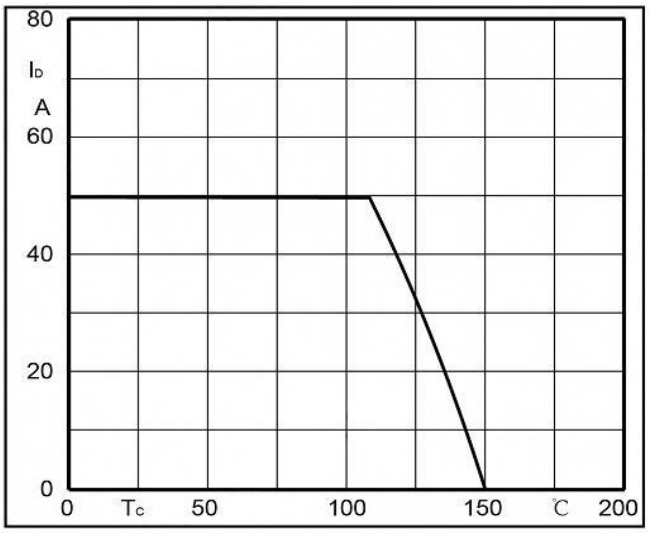


Fig2.Forward Current Derating Curve

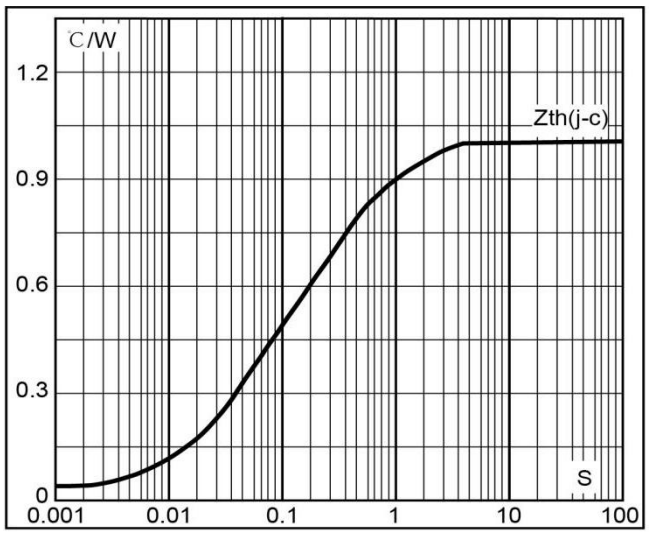


Fig3. Transient thermal impedance

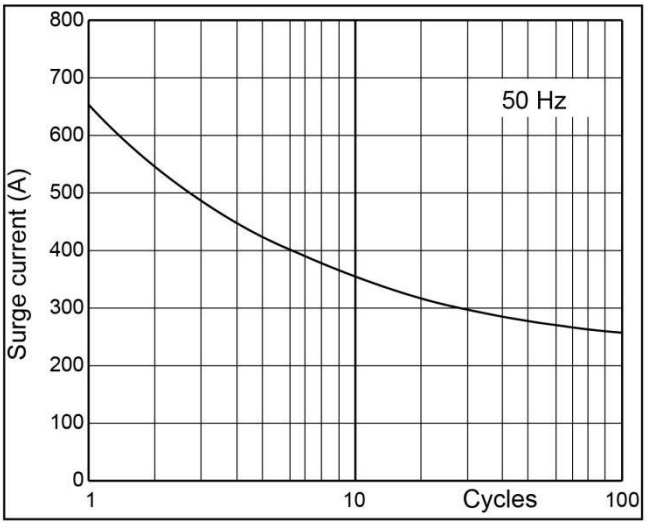


Fig4. Max Non-Repetitive Forward Surge Current

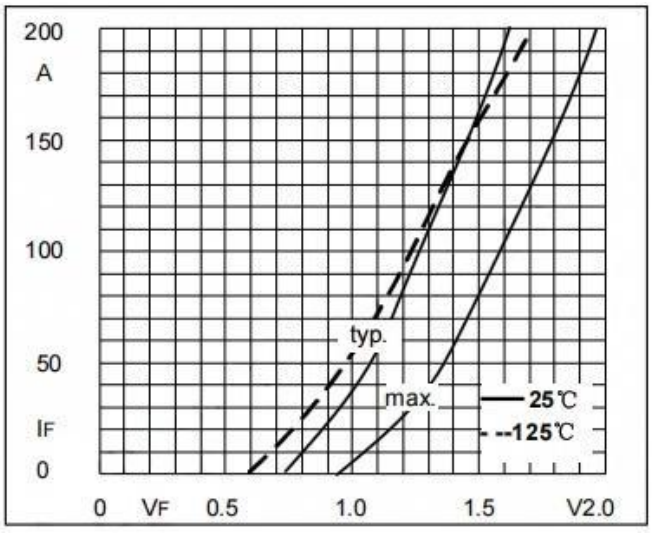
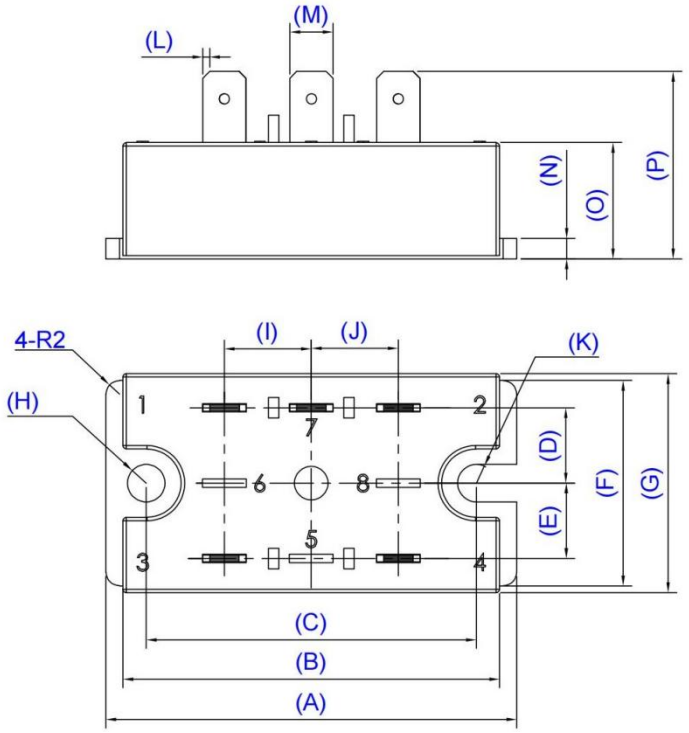


Fig5. Forward Characteristics

Package Outline Information

CASE: M1



DIM	Min (mm)	Max (mm)	Note
A	59.5	60.5	
B	54.5	55.5	
C	48.0	48.4	
D	10.8	11.2	
E	10.8	11.2	
F	29.5	30.5	
G	31.5	32.5	
H	2.25	3.25	Ø
I	12.5	12.9	
J	12.5	12.9	
K	2.45	3.05	
L	0.9	1.1	
M	6.2	6.4	
N	2.9	3.1	
O	16.7	17.3	
P	26.88	27.68	

Packing Standard

Item	Length: A(mm)	Width: B(mm)	Height: C (mm)	Quantity (PCS)
Inner Box	276	258	40	15
Outer Carton	300	280	240	90

Notice

All products, product specifications and data are subject to change without notice to improve reliability, function or design or otherwise. Information contained herein is intended to provide a product description only. No license, express or implied, to any intellectual property rights is granted by this document. Except as provided in STARSEA's terms and conditions of sale for such products, STARSEA assumes no liability whatsoever, and disclaims any express or implied warranty, relating to sale and/or use of STARSEA products including liability or warranties relating to fitness for a particular purpose, merchantability, or infringement of any patent, copyright, or other intellectual property right.