MD280S-M3

RoHS COMPLIANT

Glass Passivated Three Phase Rectifier Bridge

V_{RRM} 800 to 1800V
I_D 280 A

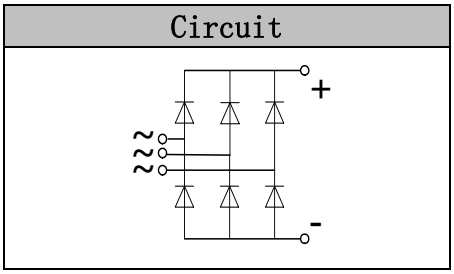
Applications

- 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 1800V
- Heat transfer through aluminum oxide DBC ceramic isolated metal baseplate
- Glass passivated chip

Circuit



Module Type

TYPE	V_{RRM}	V_{RSM}
MD280S08M3	800V	900V
MD280S12M3	1200V	1300V
MD280S16M3	1600V	1700V
MD280S18M3	1800V	1900V

Maximum Ratings

Symbol	Conditions	Values	Units
I_D	Three phase, full wave Tc=100℃	280	A
I_{FSM}	t=10mS Tvj =45℃	2550	A
i^2t	t=10mS Tvj =45℃	32500	A^2s
Visol	a.c.50HZ;r.m.s.;1min	3000	V
Tvj		-40 to +150	℃
Tstg		-40 to +125	℃
Mt	To terminals(M6)	5±15%	Nm
Ms	To heat sink(M6)	5±15%	Nm
Weight	Module (Approximately)	230	g

Thermal Characteristics

Symbol	Conditions	Values	Units
Rth(j-c)	Per diode	0.3	℃/W
Rth(c-s)	Module (Approximately)	0.02	℃/W

Electrical Characteristics

Symbol	Conditions	Values			Units
		Min.	Typ.	Max.	
V_{FM}	T=25℃ I_F =280A	—	1.3	1.6	V
I_{RD}	T_{vj}=25℃ V_{RD}=V_{RRM} T_{vj}=150℃ V_{RD}=V_{RRM}	—	—	0.5 6	mA mA

Performance Curves

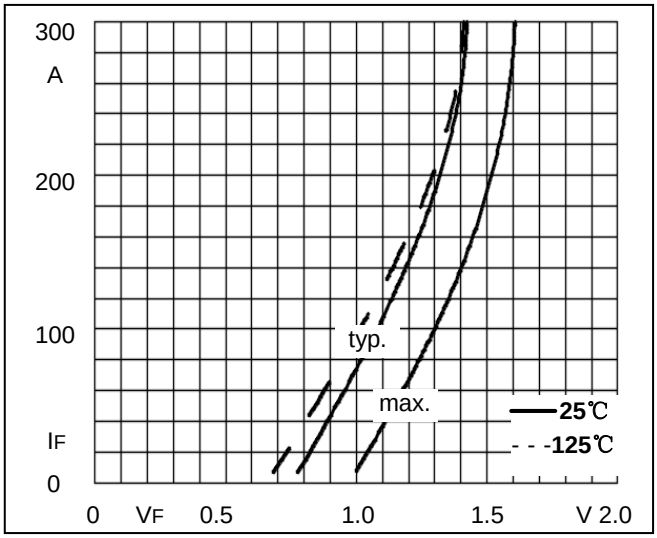


Fig1. Forward Characteristics

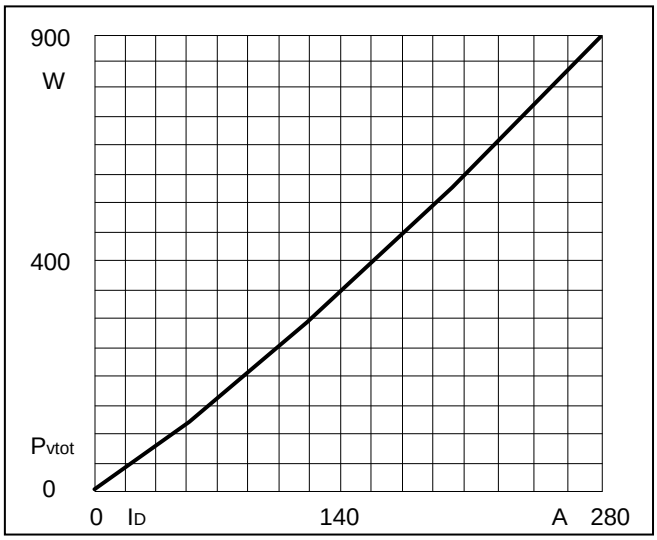


Fig2. Power dissipation

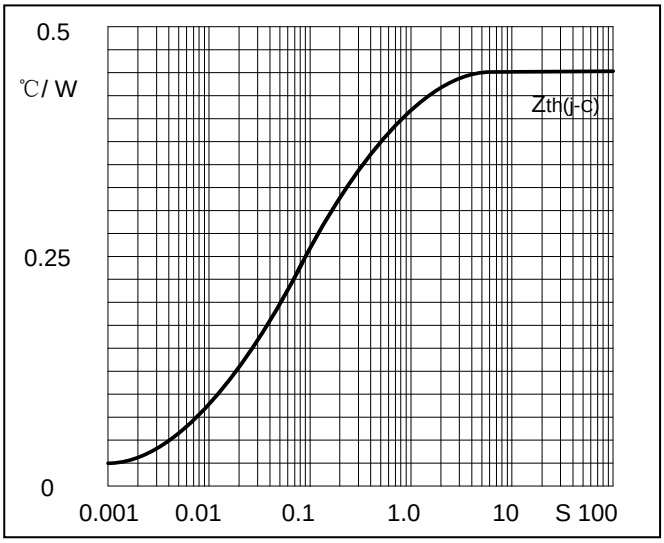


Fig3. Transient thermal impedance

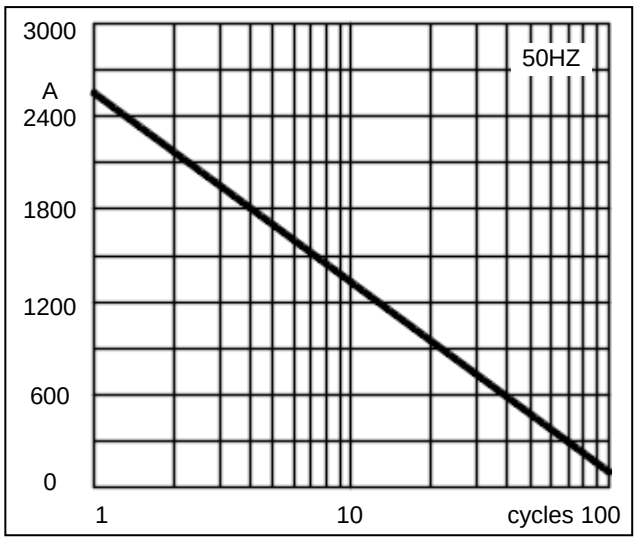


Fig4. Max Non-Repetitive Forward Surge Current

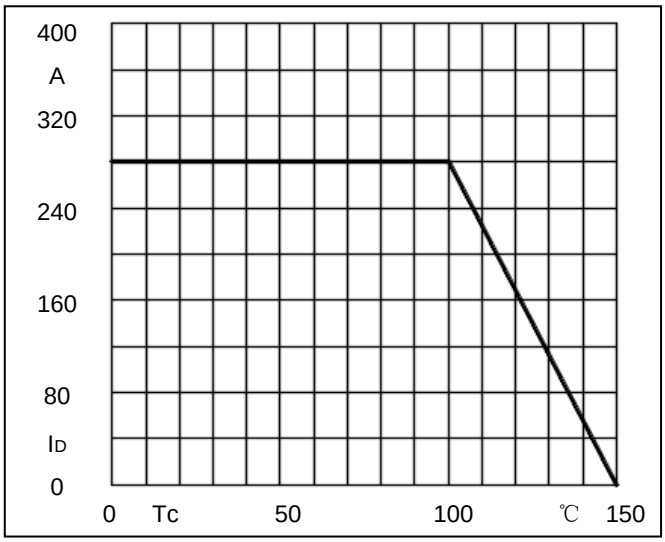
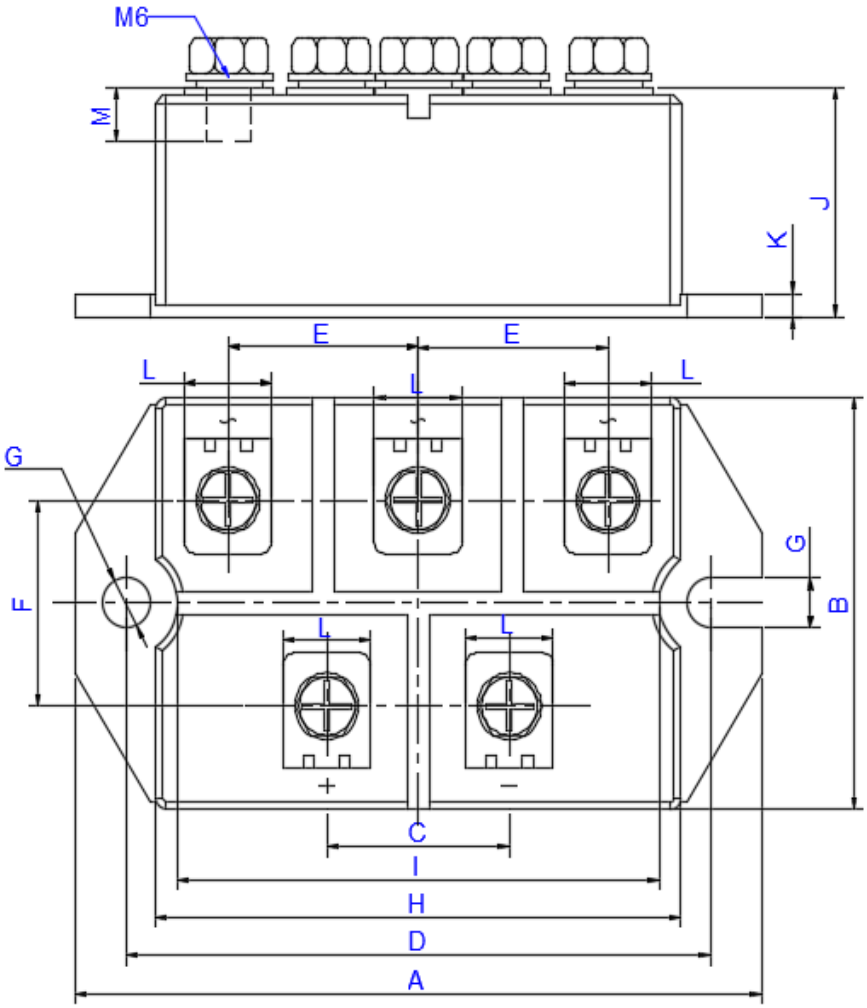


Fig5.Forward Current Derating Curve

Package Outline Information

CASE：M3



DIM	Min (mm)	Max (mm)	Note
A	93.5	94.5	
B	53.5	54.5	
C	24.5	25.5	
D	79.5	80.5	
E	25.5	26.5	
F	26.5	27.5	
G	6.2	6.8	Ø
H	71.5	72.5	
I	65.5	66.5	
J	29.5	30.5	
K	2.9	3.1	
L	11.9	12.1	
M	11.5	12.5	