

Glass Passivated Three Phase Rectifier Bridge

VRRM 800 to 2000V
IFAV 160 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	VRRM	VRSM
MD160S08M3	800V	900V
MD160S12M3	1200V	1300V
MD160S16M3	1600V	1700V
MD160S18M3	1800V	1900V
MD160S20M3	2000V	2100V

Maximum Ratings

Symbol	Conditions	Values	Units
I_D	Three phase, full wave Tc=100℃	160	A
I_{FSM}	t=10ms T_J=25℃	2000	A
I^2t	t=10ms T_J=25℃	20000	A^2s
V_{ISO}	AC 50Hz/60Hz; R.M.S; 1min	3000	V
T_J		-40 to +150	℃
Tstg		-40 to +125	℃
Mt	To Terminals(M6)	5±15%	N·m
Ms	To Heatsink(M6)	5±15%	N·m
Weight		225	g

Thermal Characteristics

Symbol	Conditions	Values	Units
Rth(j-c)	Junction to Case(Per Diode)	0.5	℃/W
Rth(c-s)	Case to Heat Sink	0.05	℃/W

Electrical Characteristics

Symbol	Conditions	Values			Units
		Min.	Typ.	Max.	
V_{FM}	T_J=25℃ I_F =300A	—	1.4	1.7	V
I_{RD}	T_J=150℃ V_R=V_{RRM}	—	—	5	mA
r_F	T_J=125℃		2.4		mΩ
VF0			0.8		V

Performance Curves

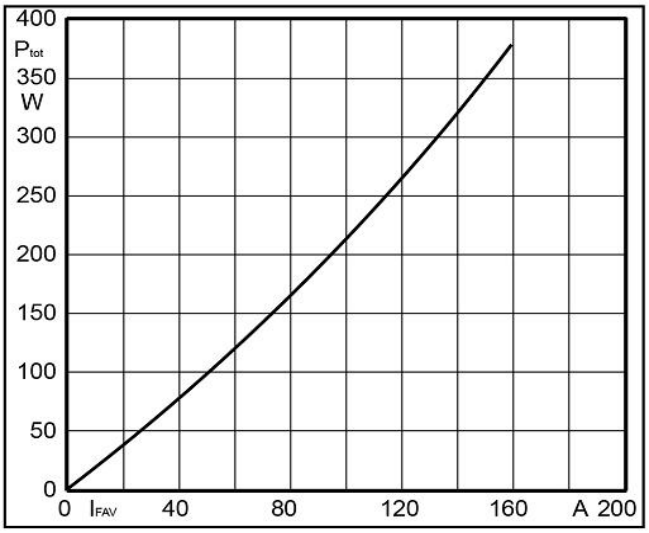


Fig1. Power dissipation

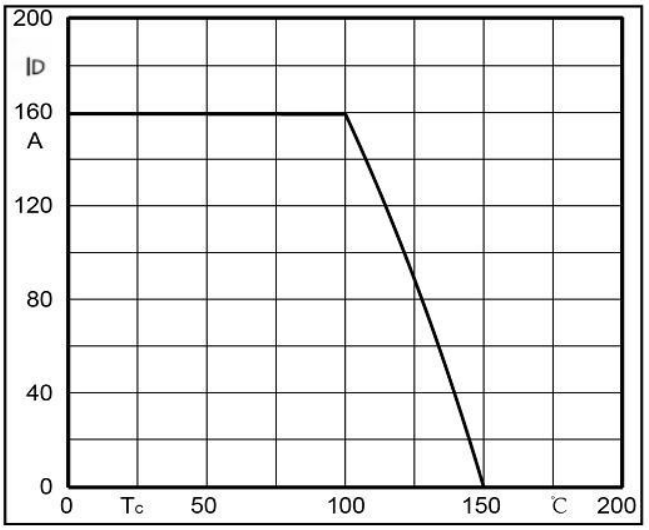


Fig2.Forward Current Derating Curve

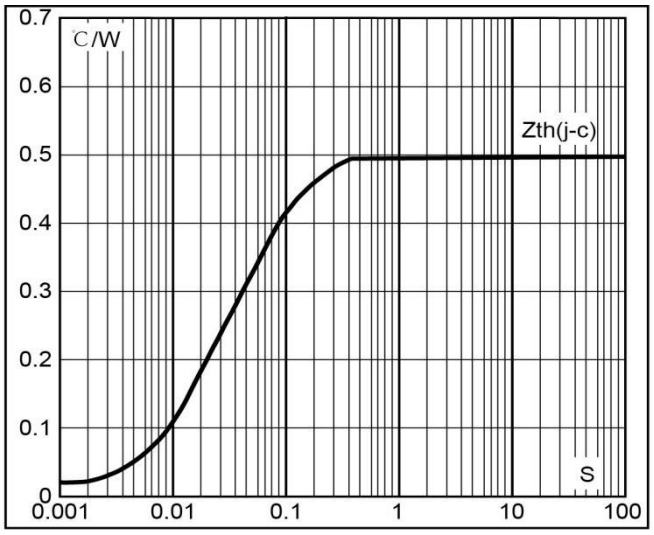


Fig3. Transient thermal impedance

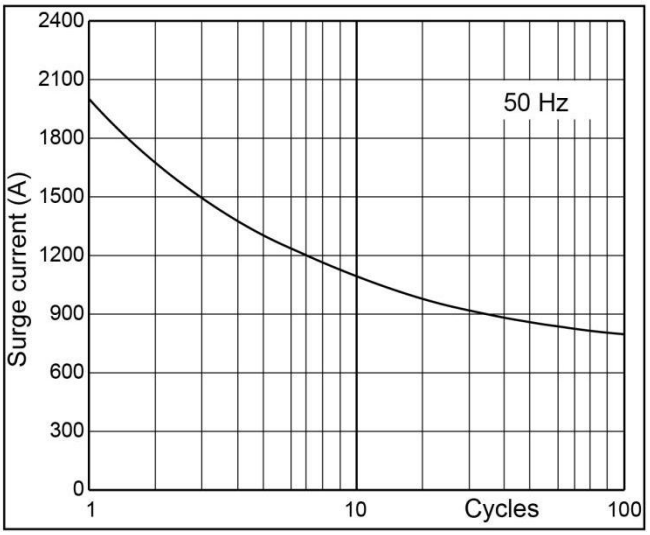


Fig4. Max Non-Repetitive Forward Surge Current

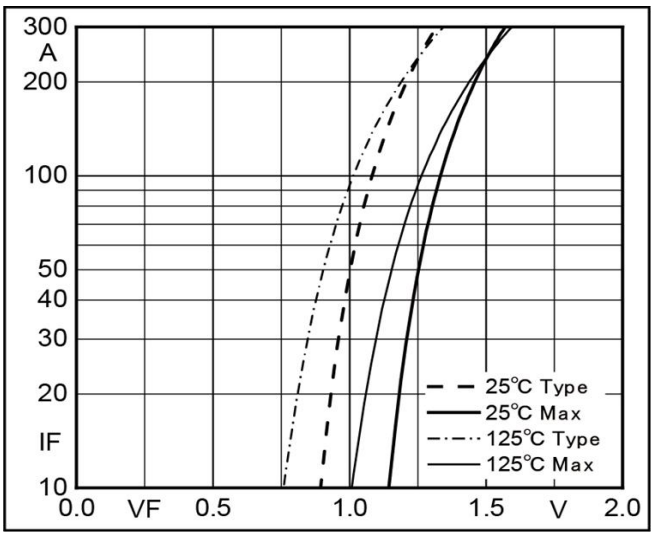
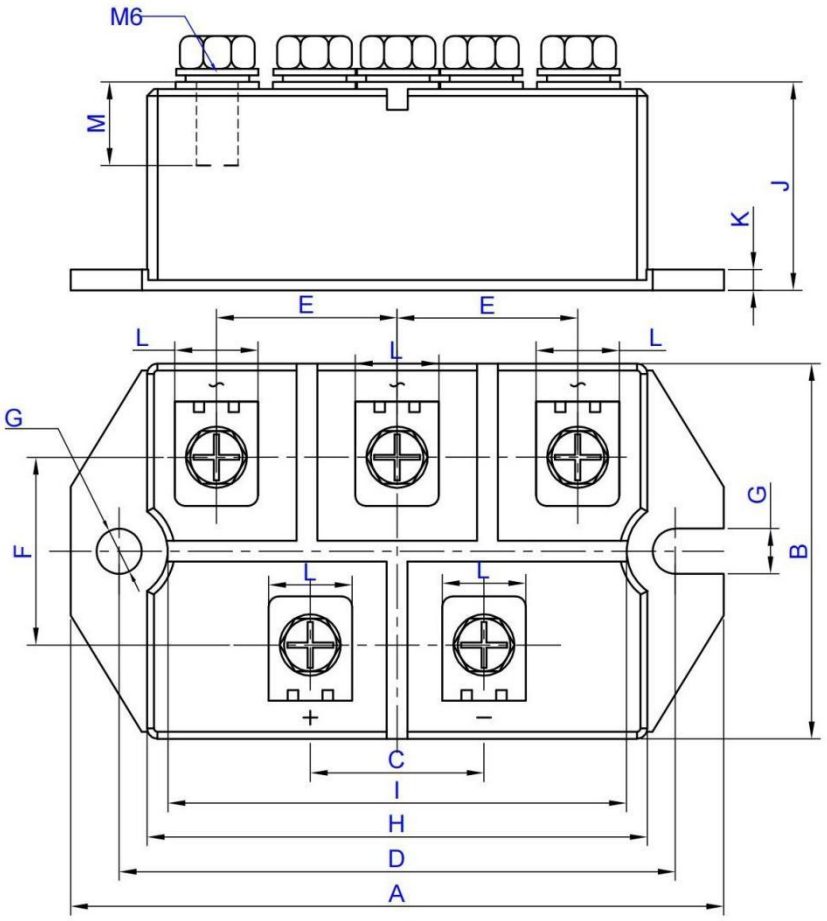


Fig5. Forward Characteristics

Package Outline Information

CASE: 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	29.6	30.8	
K	2.9	3.1	
L	11.9	12.1	
M	11.5	12.5	

Packing Standard

Item	Length: A(mm)	Width: B(mm)	Height: C (mm)	Quantity (PCS)
Inner Box	276	258	48	6
Outer Carton	545	295	240	60

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