



Glass Passivated Rectifier Diode Modules

VRRM 2000V
IFAV 120 A

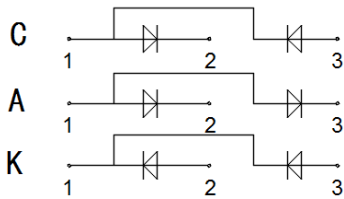
Applications

- Non-controllable rectifiers for AC/AC converters
- Line rectifiers for transistorized AC motor controllers
- Field supply for DC motors

Features

- Blocking voltage:2000V
- Heat transfer through aluminum oxide DBC ceramic isolated metal baseplate
- Glass passivated chip
- UL recognized applied for file no. E230084

Circuit



Module Type

TYPE			VRRM	VRSM
MD120C20D1	MD120A20D1	MD120K20D1	2000V	2100V

Maximum Ratings

Symbol	Conditions	Values	Units
IFAV	Single phase ,half wave 180° conduction Tc=106℃	120	A
IFSM	t=10mS Tvj =45℃	4000	A
i ² t	t=10mS Tvj =45℃	80000	A ² s
V _{isol}	a.c.50HZ;r.m.s.;1min	3000	V
T _{vj}		-40 to +150	℃
T _{stg}		-40 to +125	℃
Mt	To terminals(M5)	3 ± 15%	Nm
Ms	To heatsink(M6)	5 ± 15%	Nm
Weight	Module (Approximately)	100	g

Thermal Characteristics

Symbol	Conditions	Values	Units
R _{th(j-c)}	Per diode	0.26	℃/W
R _{th(j-c)}	Per Module	0.13	℃/W
R _{th(c-s)}	Per diode	0.2	℃/W
R _{th(c-s)}	Per Module	0.1	℃/W



Electrical Characteristics

Symbol	Conditions	Values			Units
		Min.	Typ.	Max.	
V_{FM}	$T=25^{\circ}C$ $I_F=300A$	—	1.20	1.35	V
V_{FO}	$T_J=25^{\circ}C$	—	0.87	—	V
	$T_J=150^{\circ}C$	—	0.69	—	V
r_F	$T_J=25^{\circ}C$	—	1.1	—	m Ω
	$T_J=150^{\circ}C$	—	1.55	—	m Ω
I_{RD}	$T_{vj}=150^{\circ}C$ $V_{RD}=V_{RRM}$	—	—	6	mA

Performance Curves

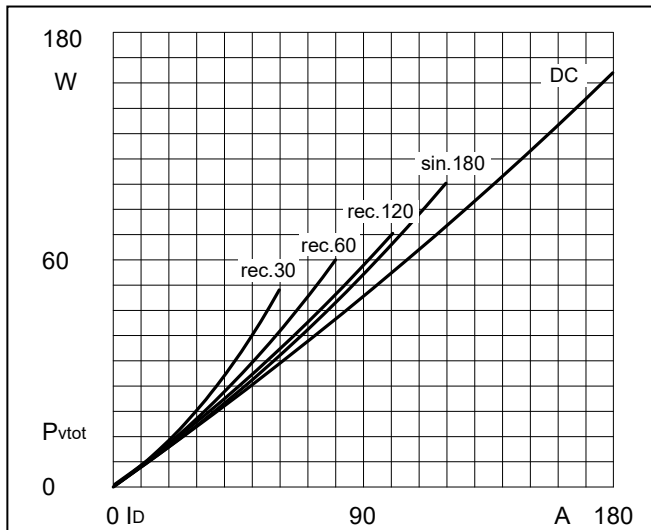


Fig1. Power dissipation

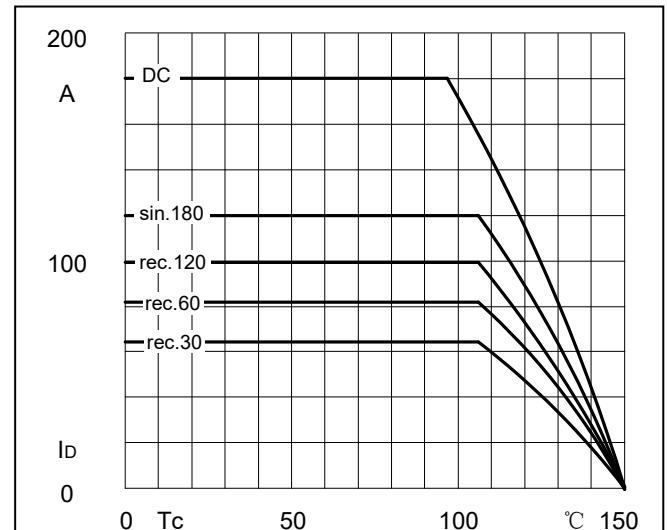


Fig2. Forward Current Derating Curve

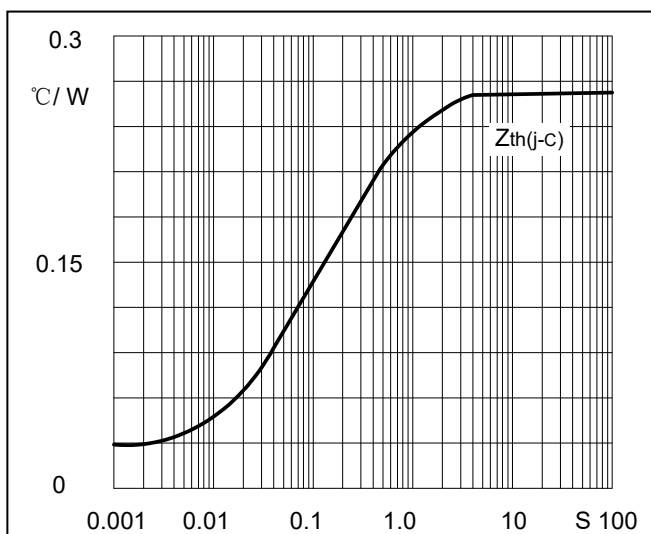


Fig3. Transient thermal impedance

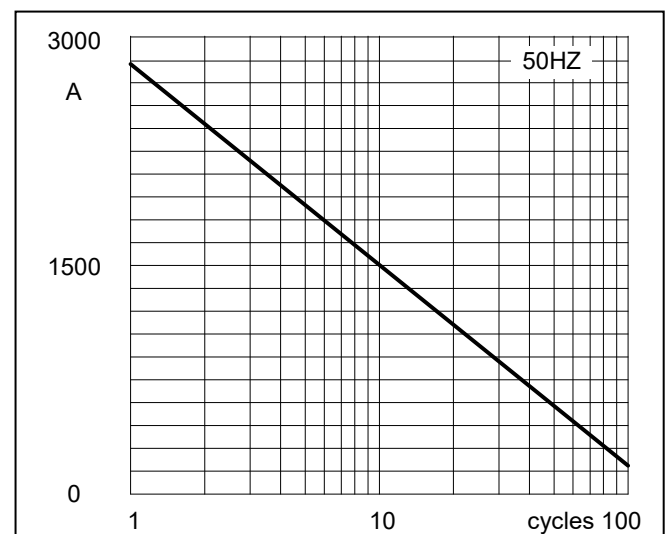


Fig4. Max Non-Repetitive Forward Surge Current

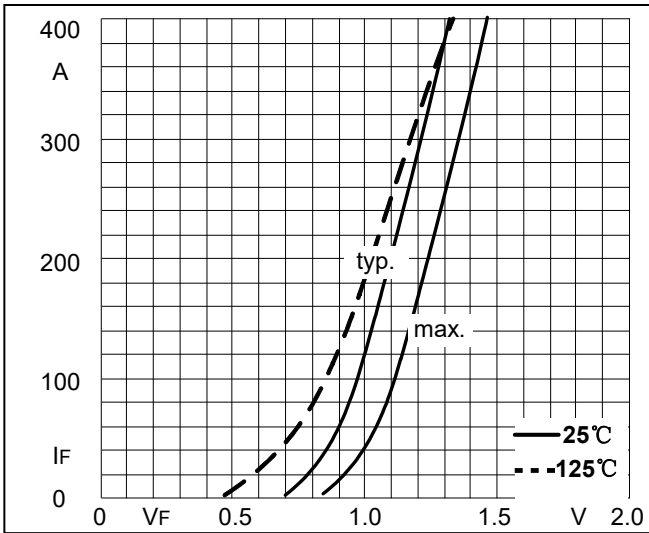
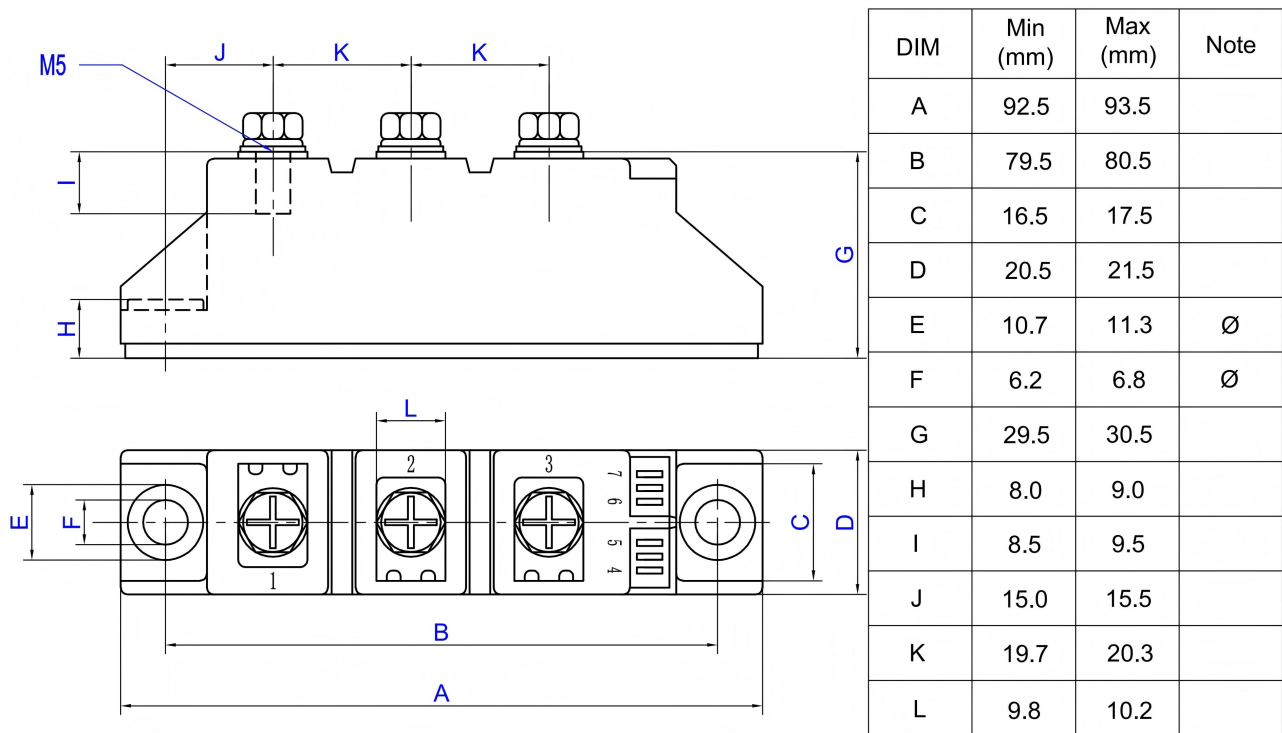


Fig5. Forward Characteristics

Package Outline Information

CASE: D1





Packing Standard

Item	Length: A (mm)	Width: B (mm)	Height: C (mm)	Quantity (PCS)
Inner Box	276	258	40	10
Outer Carton	545	295	240	120

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