STARSEA

MD120C(A/K)-D1N

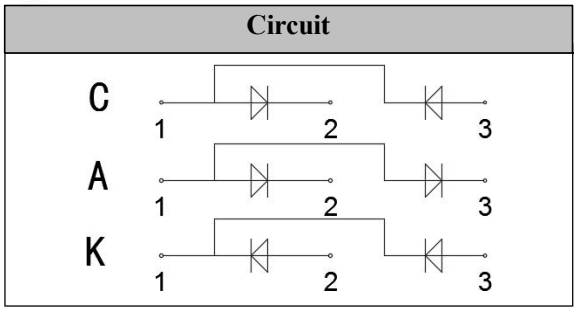
RoHS COMPLIANT



Glass Passivated Rectifier Diode Modules

VRRM 800 to 2000V
IFAV 120 A

Circuit



Applications

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

Features

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

Module Type

TYPE			VRRM	VRSM
MD120C08D1N	MD120A08D1N	MD120K08D1N	800V	900V
MD120C12D1N	MD120A12D1N	MD120K12D1N	1200V	1300V
MD120C16D1N	MD120A16D1N	MD120K16D1N	1600V	1700V
MD120C18D1N	MD120A18D1N	MD120K18D1N	1800V	1900V
MD120C20D1N	MD120A20D1N	MD120K20D1N	2000V	2100V

Maximum Ratings

Symbol	Conditions	Values	Units
I_{FAV}	Single phase ,half wave 180°conduction Tc=106℃	120	A
I_{FSM}	t=10ms T_J =25℃	4000	A
I^2t	t=10ms T_J=25℃	80000	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(M5)	3±15%	N·m
Ms	To Heatsink(M6)	5±15%	N·m
Weight		110	g

Thermal Characteristics

Symbol	Conditions	Values	Units
Rth(j-c)	Junction to Case(Per Diode)	0.25	℃/W
Rth(c-s)	Case to Heat Sink	0.1	℃/W

Electrical Characteristics

Symbol	Conditions	Values			Units
		Min.	Typ.	Max.	
V_{FM}	T_J=25℃ I_F =300A	—	1.20	1.35	V
I_{RD}	T_J=150℃ V_R=V_{RRM}	—	—	5	mA
r_F	T_J=125℃		1.4		mΩ
VF0			0.8		V

Performance Curves

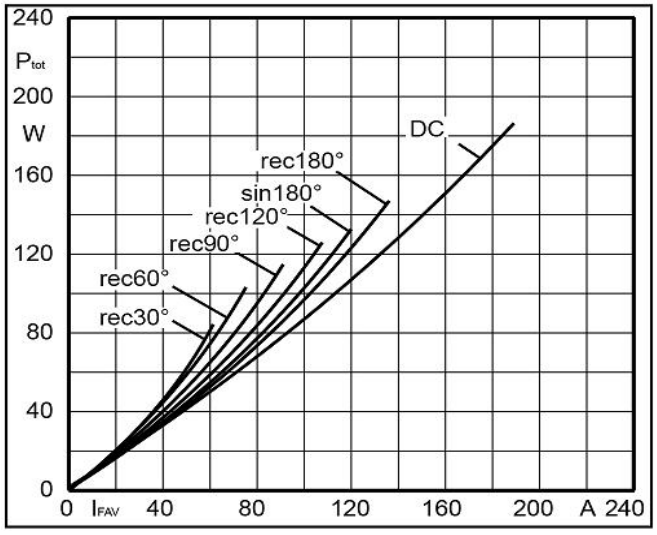


Fig1. Power dissipation

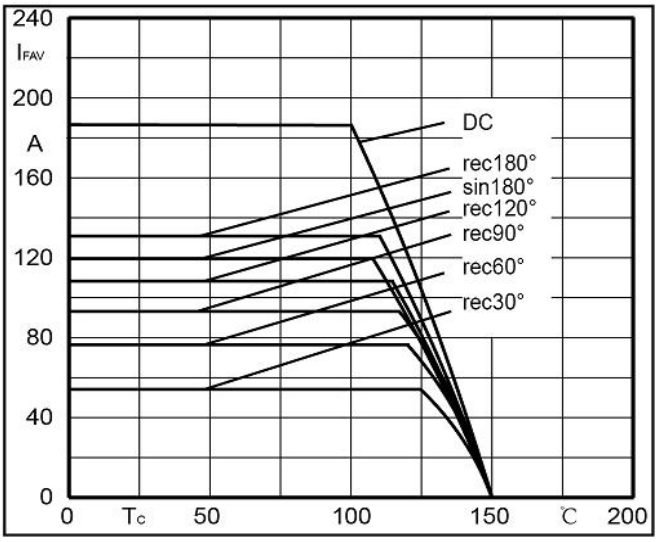


Fig2.Forward Current Derating Curve

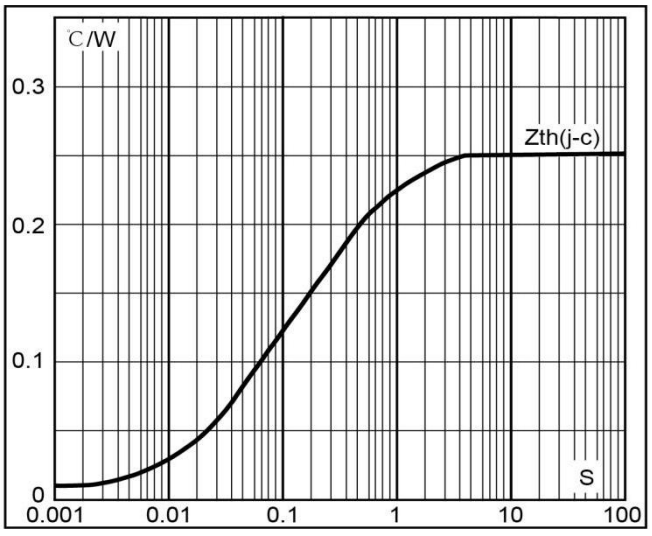


Fig3. Transient thermal impedance

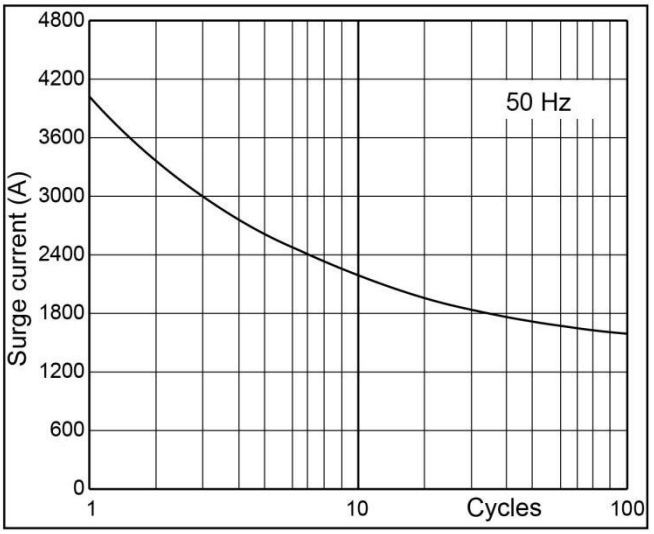


Fig4. Max Non-Repetitive Forward Surge Current

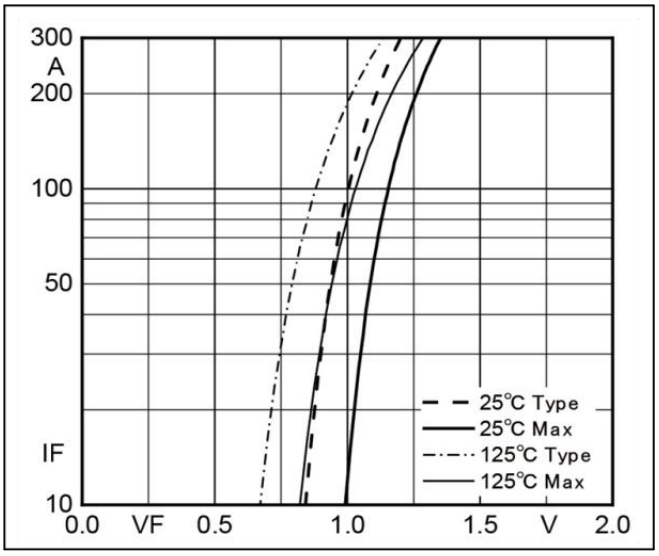
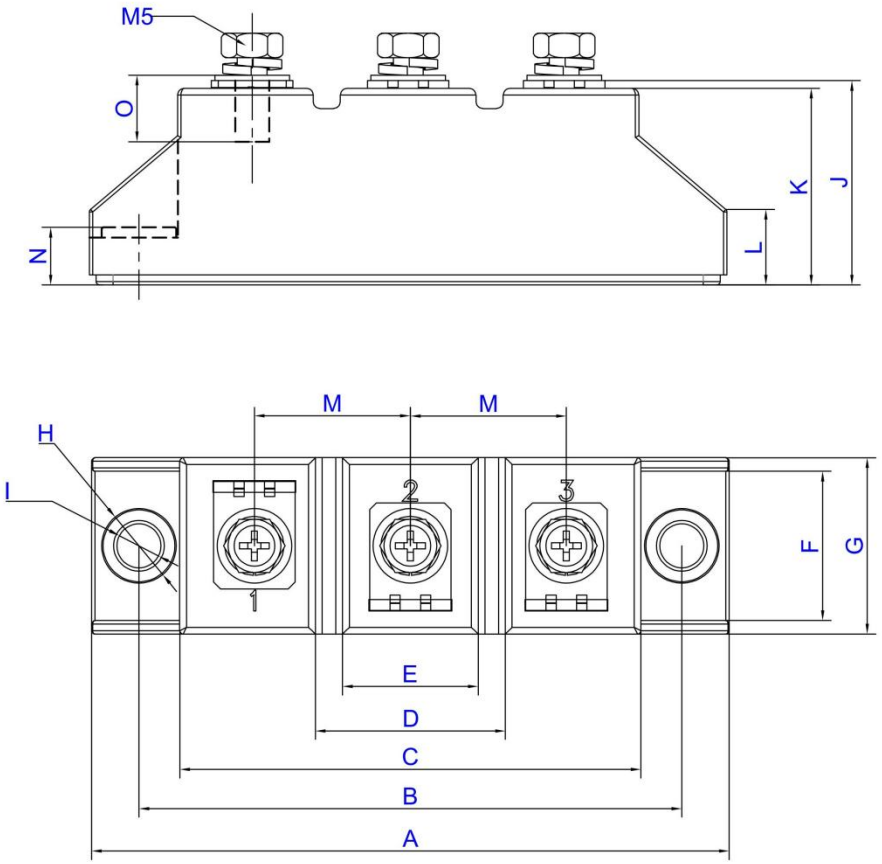


Fig5. Forward Characteristics

Package Outline Information

CASE: D1N



DIM	Min (mm)	Max (mm)	Note
A	93.5	94.5	
B	79.8	80.2	
C	67.5	68.5	
D	27.5	28.5	
E	19.5	20.5	
F	21.5	22.5	
G	25.5	26.5	
H	10.5	11.5	Ø
I	6.0	7.0	Ø
J	29.5	30.5	
K	28.5	29.5	
L	10.7	11.7	
M	22.5	23.5	
N	8.0	9.0	
O	9.0	10.0	

Packing Standard

Item	Length: A(mm)	Width: B(mm)	Height: C (mm)	Quantity (PCS)
Inner Box	276	258	43	10
Outer Carton	545	295	240	100

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