

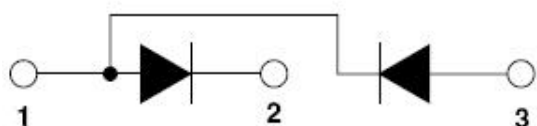
SM400T200D1 SCHOTTKY RECTIFIER



Features

- 175°C T_J operation
- Center tap module
- High purity, high temperature epoxy encapsulation for enhanced mechanical strength and moisture resistance
- Low forward voltage drop
- High frequency operation
- Guard ring for enhanced ruggedness and long term reliability
- Baseplate: Nickel plated; Terminals: Nickel plated
- UL approved file E517293
- This is a Pb – Free Device
- All SMC parts are traceable to the wafer lot
- Additional testing can be offered upon request

Circuit Diagram



Applications

- High current switching power supply
- Plating power supply
- Free-Wheeling diodes
- Reverse battery protection
- Converters
- UPS System
- Welding

Maximum Ratings@T_J=25°C unless otherwise specified

Characteristics	Symbol	Condition	Max.	Units
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V _{RRM} V _{RWM} V _R	-	200	V
Average Rectified Forward Current	I _{F(AV)}	50% duty cycle @T _C = 101°C, rectangular wave form	200(Per Leg) 400(Per Device)	A
Peak One Cycle Non-Repetitive Surge Current (Per Leg)	I _{FSM}	8.3 ms, half Sine pulse	2840	A
Non-repetitive avalanche energy	E _{AS}	T _J = 25 °C, I _{AS} = 1.8 A, L = 10 mH	15	mJ
Repetitive avalanche current	I _{AR}	Current decaying linearly to zero in 1 μs Frequency limited by T _J maximum V _A = 1.5 x V _R typical	1	A

Electrical Characteristics@T_J=25°C unless otherwise specified

Characteristics	Symbol	Condition	Typ.	Max.	Units
Forward Voltage Drop(Per Leg)*	V _{F1}	@ 200A, Pulse, T _J = 25 °C @ 400A, Pulse, T _J = 25 °C	0.90 1.02	0.99 1.15	V
	V _{F2}	@ 200A, Pulse, T _J = 125 °C @ 400A, Pulse, T _J = 125 °C	0.78 0.93	0.82 0.97	V
Reverse Current(Per Leg)*	I _{R1}	@V _R = rated V _R , T _J = 25 °C	0.02	6	mA
	I _{R2}	@V _R = rated V _R , T _J = 125 °C	6	85	mA
Junction Capacitance(Per leg)	C _T	@V _R = 5V, T _C = 25 °C f _{SIG} = 1MHz	2870	5200	pF
Insulation Voltage	Visol	Ac. 50HZ; R.M.S; 1min	-	3000	V
		Ac. 50HZ; R.M.S; 1sec	-	3500	
Maximum voltage rate of change	dV/dt	Rated V _R	-	10000	V/μs

* Pulse width < 300 μs, duty cycle < 2%

Thermal-Mechanical Specifications@T_J=25°C unless otherwise specified

Characteristics	Symbol	Condition	Specification		Units
Junction Temperature	T _J	-	-55 to +175		°C
Storage Temperature	T _{stg}	-	-55 to +175		°C
Maximum internal thermal resistance, junction to case per leg	R _{th(J-C)}	DC operation	0.32		°C/W
Typical thermal resistance, case to heatsink per module	R _{th(C-S)}	-	0.1		°C/W
Mounting Torque ± 15%	T _M	-	Mounting Torque(M6)	5	Nm
			Terminal Torque(M5)	4	
Module(Approximately)	Weight	-	100		g

Ratings and Characteristics Curves

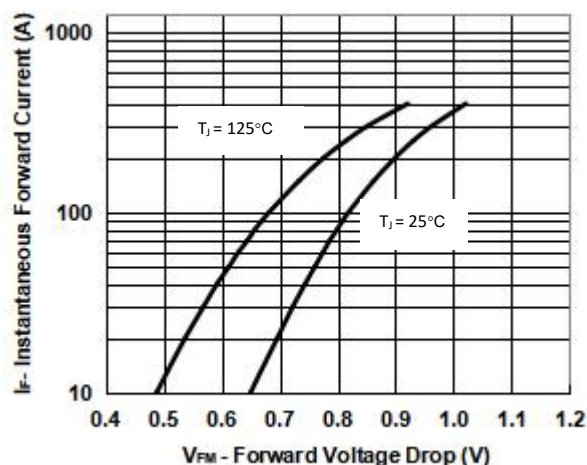


Fig. 1 - Typical Forward Characteristics

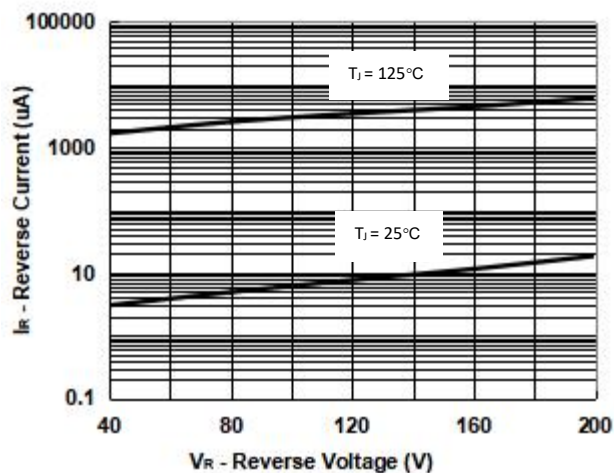


Fig. 2 - Typical Reverse Characteristics

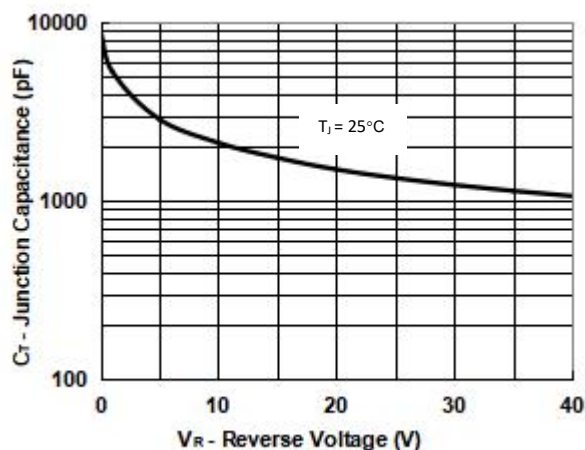


Fig. 3 - Typical Junction Capacitance

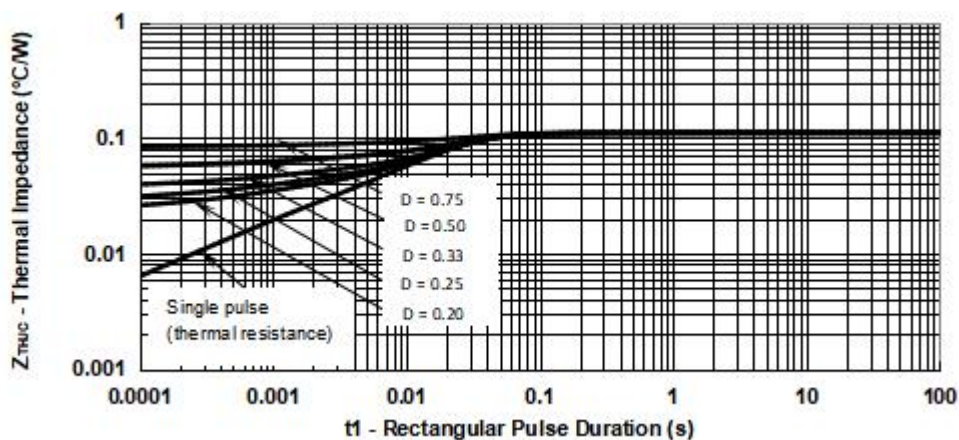


Fig. 4 Typical Thermal Impedance Z_{thJC} Characteristics (Per Leg)

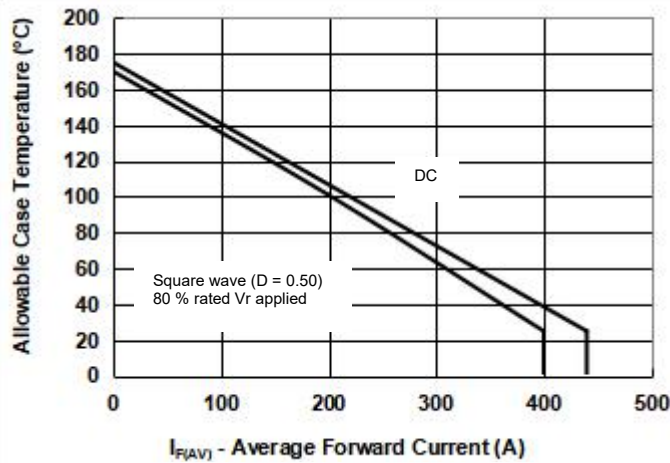


Fig. 5 - Maximum Allowable Case Temperature vs. Average Forward Current (Per Leg)

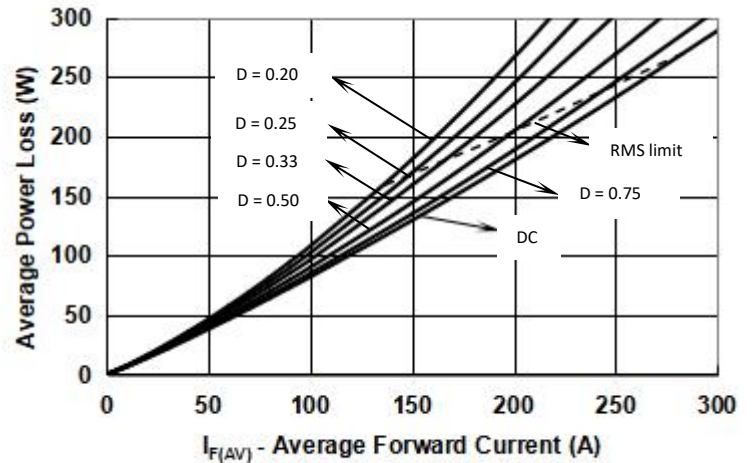


Fig. 6 - Forward Power Loss Characteristics (Per Leg)

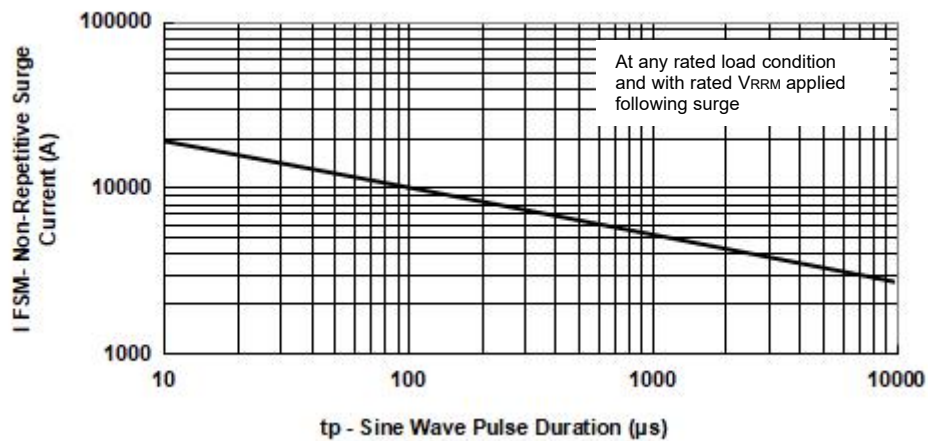
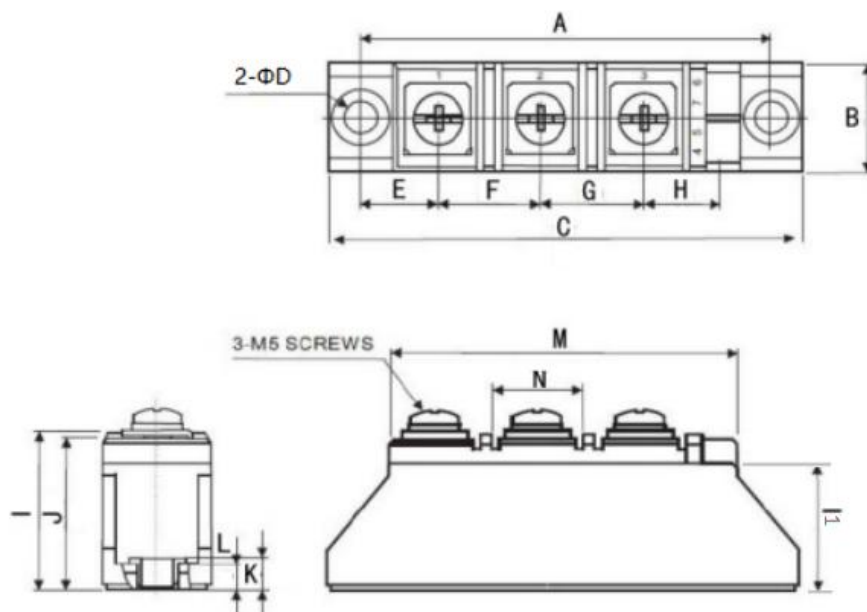


Fig. 7 - Maximum Non-Repetitive Surge Current

Note

- (1) Formula used: $T_C = T_J - (P_d + P_{dREV}) \times R_{thJC}$;
 P_d = forward power loss = $I_{F(AV)} \times V_{FM}$ at $(I_{F(AV)}/D)$ (see fig. 6);
 P_{dREV} = inverse power loss = $V_{R1} \times I_R (1 - D)$; I_R at $V_{R1} = 80\%$ rated V_R

Mechanical Dimensions T1 (Millimeters)



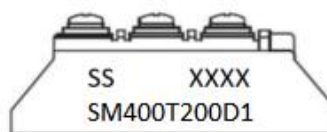
SYMBOL	Millimeters	
	Min.	Max.
A	79.5	80.5
B	20.8	21.2
C	91.35	92.75
ΦD	6.1	6.5
E	14.5	15.5
F	19.5	20.5
G	19.5	20.5
H	14.5	15.5
I	30.5	31.5
I1	24	25
J	29	30
K	5.7	6.3
L	4.7	5.3
M	67.5	68.5
N	17.5	18.5

Ordering Information

Device	Package	Shipping
SM400T200D1	T1	14pcs/ box

For information on tape and reel specifications, including part orientation and tape sizes, please refer to our tape and reel packaging specification.

Marking Diagram



Where XXXX is YYWW

SM400T200D1 = Part name
SS = SS
YY = Year
WW = Week

Cautions: Molding resin
Epoxy resin UL:94V-0

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