Technical Data
Data Sheet N2205, Rev.E

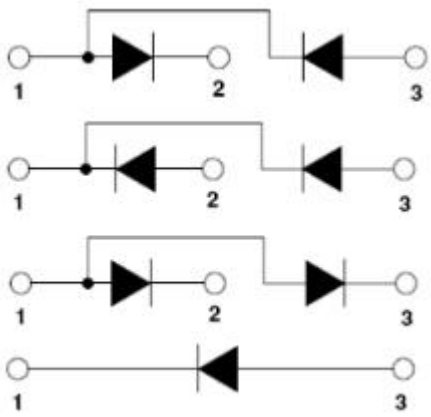
SM090KD800G1 SM090KC800G1 SM090KJ800G1 SM090KE800G1
Power Modules Standard Diodes

T1

Features

- Heat transfer through aluminum oxide DBC Ceramic isolated metal baseplate
- Industrial standard package
- Thick copper baseplate
- Plastic shell meets UL 94 V-0 flammability rating
- UL approved file E517293
- This is a Pb − Free Device
- Baseplate: Nickel plated; Terminals: Nickel plated
- T1 Package compatible with JEDEC TO-240AA package
- All SMC parts are traceable to the wafer lot
- Additional testing can be offered upon request

Circuit Diagram



Applications

- Power Supplies
- AC&DC Motor Drivers
- Bridge Circuits
- Welders
- Battery Supplier

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	-	800	V
Maximum average forward current at case temperature	$I_{F(AV)}$	180°conduction, half sine wave T_C =112℃	100	A
Maximum RMS forward current	$I_{F(RMS)}$	DC at 90 °C case temperature	157	A
Surge forward current	I_{FSM}	t=10mS T_J =45℃	2000	A
Maximum I^2t for fusing	I^2t	t=10mS T_J =45℃	20	kA^2s
Low level value of threshold voltage	r_{f1}	(16.7 % x π x $I_{F(AV)}$ < I < π x $I_{F(AV)}$), T_J = T_J maximum	2.4	mΩ
High level value of threshold voltage	r_{f2}	(I > π x $I_{F(AV)}$), T_J = T_J maximum	2.05	

Technical Data
Data Sheet N2205, Rev.E

RoHS Pb

Electrical Characteristics@T_J=25°C unless otherwise specified

Characteristics	Symbol	Condition	Typ.	Max.	Units
Forward Voltage Drop(per leg)*	V_{F1}	@ 100A, Pulse, T_J = 25 °C	0.95	1.15	V
Reverse Current(per leg)*	I_{R1}	@ V_R = rated V_R T_J = 25 °C	0.42	20	uA
	I_{R2}	@ V_R = rated V_R T_J = 150°C	0.22	5	mA
Insulation Voltage	V_{isol}	Ac. 50H_Z; R.M.S; 1min	-	3000	V
		Ac. 50H_Z; R.M.S; 1sec	-	3500	V

* 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	-	-40~+150		°C
Storage Temperature	T_{stg}	-	-40~+150		°C
Maximum internal thermal resistance, junction to case per leg	$R_{th(J-C)}$	DC operation	0.22		℃/W
Typical thermal resistance, case to heatsink per module	$R_{th(C-S)}$	-	0.1		℃/W
Mounting Torque ±15%	T_M	-	Mounting Torque(M6)	5	Nm
			Terminal Torque(M5)	4	
Module(Approximately)	Weight		100		g

Ratings and Characteristics Curves

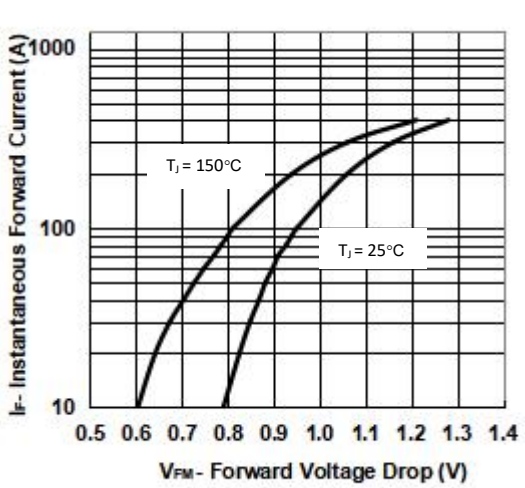


Fig. 1 - Typical Forward Characteristics

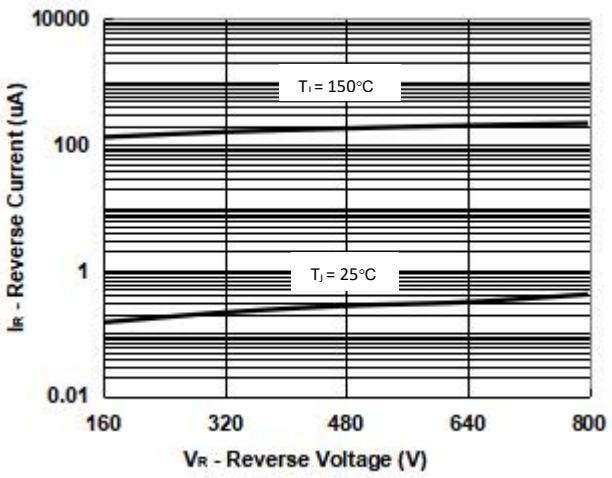


Fig. 2 - Typical Reverse Characteristics

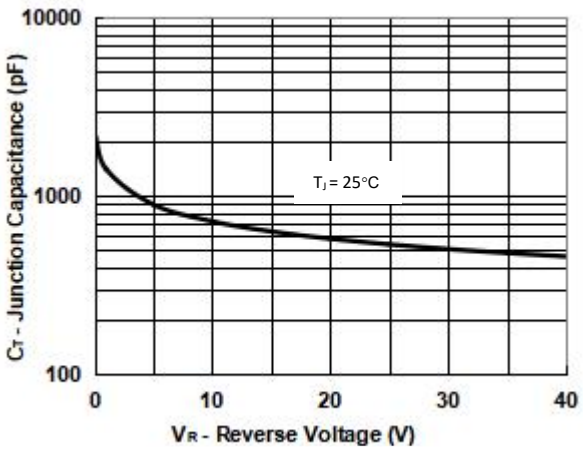


Fig. 3 - Typical Junction Capacitance

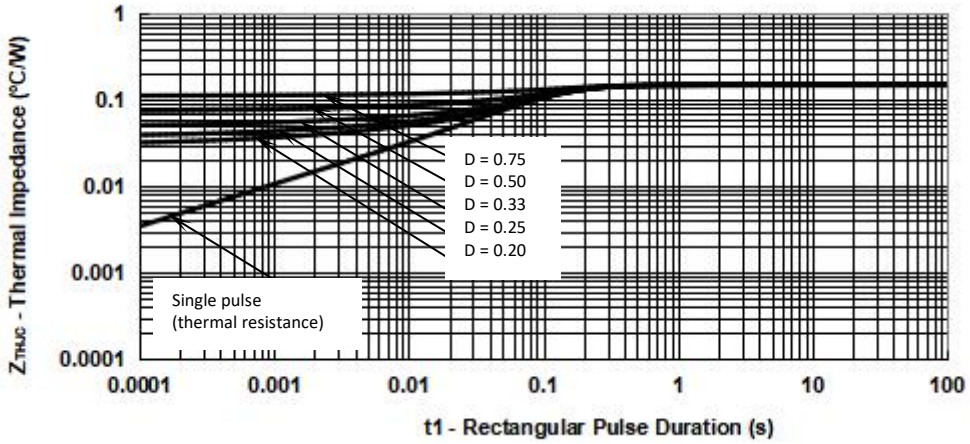
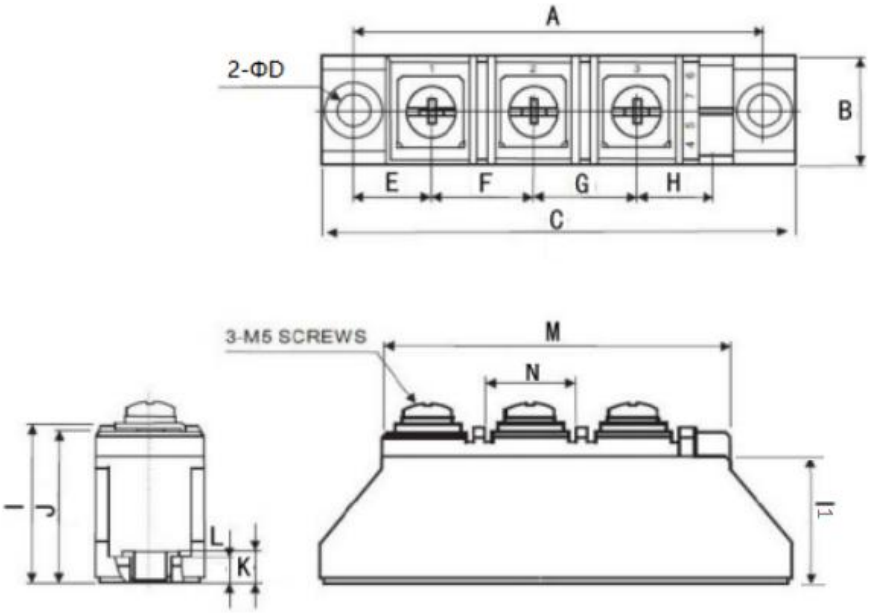


Fig. 4 Typical Thermal Impedance Z_{thJC} Characteristics (Per Leg)

SM090KD800G1
SM090KC800G1
SM090KJ800G1
SM090KE800G1

Technical Data
Data Sheet N2205, Rev.E

Mechanical Dimensions T1 (Millimeters)



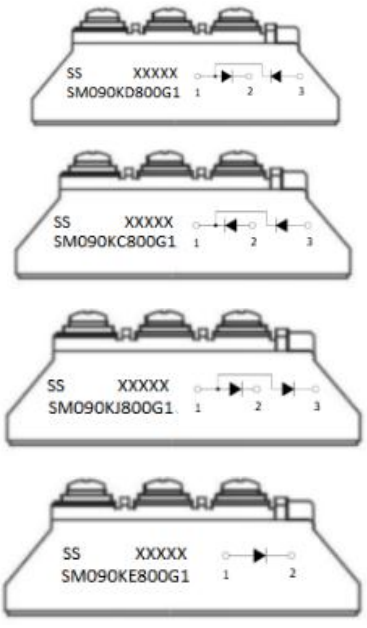
SYMBOL	Millimeters	
	Min.	Max.
A	79.5	80.5
B	20.8	21.2
C	91.35	92.75
ΦD	6.1	6.5
E	14.5	15.5
F	19.5	20.5
G	19.5	20.5
H	14.5	15.5
I	30.5	31.5
I1	24	25
J	29	30
K	5.7	6.3
L	4.7	5.3
M	67.5	68.5
N	17.5	18.5

Ordering Information

Device	Package	Shipping
SM090KD800G1 SM090KC800G1 SM090KJ800G1 SM090KE800G1	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

SM090KD800G1 = Part name
SM090KC800G1 = Part name
SM090KJ800G1 = Part name
SM090KE800G1 = Part name
SS = SS
YY = Year
WW = Week
L = Lot Number

Technical Data
Data Sheet N2205, Rev.E

RoHS

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