

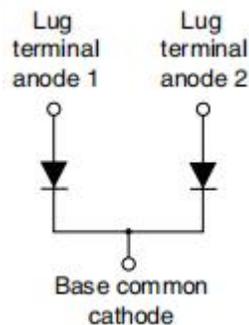
503CNQ080 503CNQ100 SCHOTTKY RECTIFIER



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
- Base plate: Nickel plated; Terminals: Nickel plated
- The terminal hardware is supplied with the module.
- The mounting hardware is not supplied. Recommended is the use of ¼-20 or M6 screws with spring washer.
- 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 (limiting values, at 25 °C unless otherwise specified)

Characteristics	Symbol	Condition	Max.		Units
			503CNQ080	503CNQ100	
Peak Repetitive Reverse Voltage	V _{RRM}	-	80	503CNQ080	V
Working Peak Reverse Voltage	V _{RWM}		100	503CNQ100	
DC Blocking Voltage	V _R				
Average Rectified Forward Current	I _{F(AV)}	50% duty cycle @T _c = 122°C, rectangular wave form	250(Per Leg)		A
			500(Per Device)		
Peak One Cycle Non-Repetitive Surge Current (Per Leg)	I _{FSM}	8.3 ms, half Sine pulse	5000		A

Electrical Characteristics:

Characteristics	Symbol	Condition	Typ.	Max.	Units
Forward Voltage Drop(Per Leg)*	V _{F1}	@ 250A, Pulse, T _J = 25 °C	0.83	0.90	V
	V _{F2}	@ 250A, Pulse, T _J = 125 °C	0.72	0.75	V
Reverse Current(Per Leg)*	I _{R1}	@V _R = rated V _R , T _J = 25 °C	0.003	8	mA
	I _{R2}	@V _R = rated V _R , T _J = 125 °C	1.2	200	mA
Junction Capacitance(Per leg)	C _T	@V _R = 5V, T _C = 25 °C f _{SIG} = 1MHz	5350	7200	pF
Voltage Rate of Change	dv/dt	-	-	10,000	V/μs

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

Thermal-Mechanical Specifications:

Characteristics	Symbol	Condition	Specification	Units	
Junction Temperature	T _J	-	-55 to +175	°C	
Storage Temperature	T _{stg}	-	-55 to +175	°C	
Typical Thermal Resistance Junction to Case(Per leg)	R _{θJC}	DC operation	0.40	°C/W	
Typical Thermal Resistance Junction to Case(Per package)	R _{θJC}	DC operation	0.20	°C/W	
Typical Thermal Resistance, case to Heat Sink	R _{θcs}	Mounting surface, smooth and greased	0.08	°C/W	
Mounting Torque	T _M	-	Mounting Torque	3.84(min) 4.80(max)	Nm
			Terminal Torque	2.35(min) 3.43(max)	
Approximate Weight	wt	-	91	g	
Case Style	PRM4 Non-Isolated				

Ratings and Characteristics Curves

Figure 1
Typical Forward Characteristics

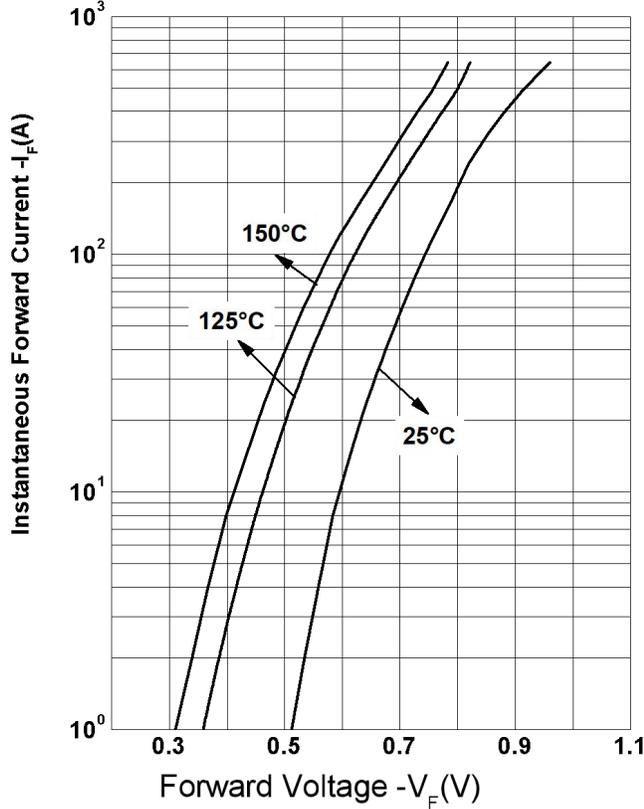


Figure 2
Typical Reverse Characteristics

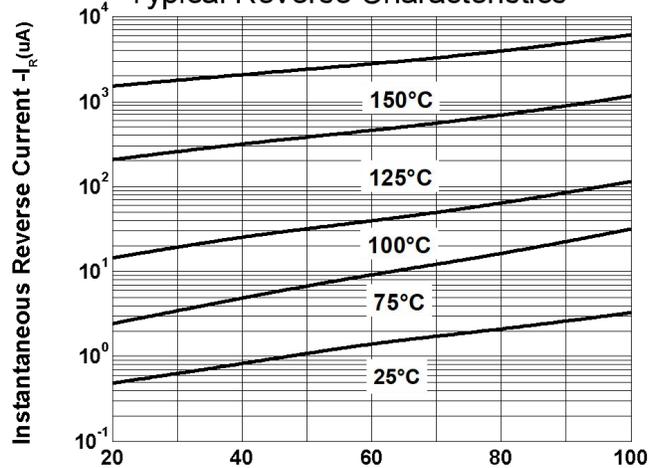
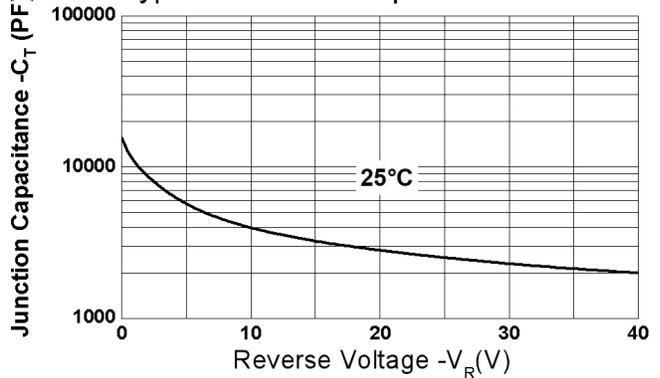
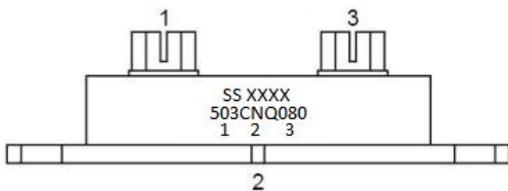


Figure 3
Typical Junction Capacitance



Marking Diagram



Where XXXX is YYWW

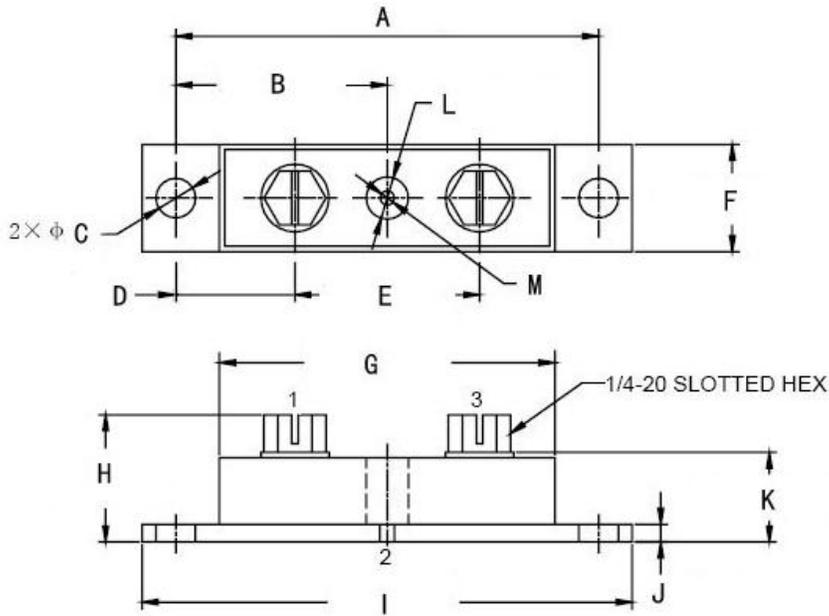
503CNQ080 = Part name
SS = SS
YY = Year
WW = Week

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

Ordering Information

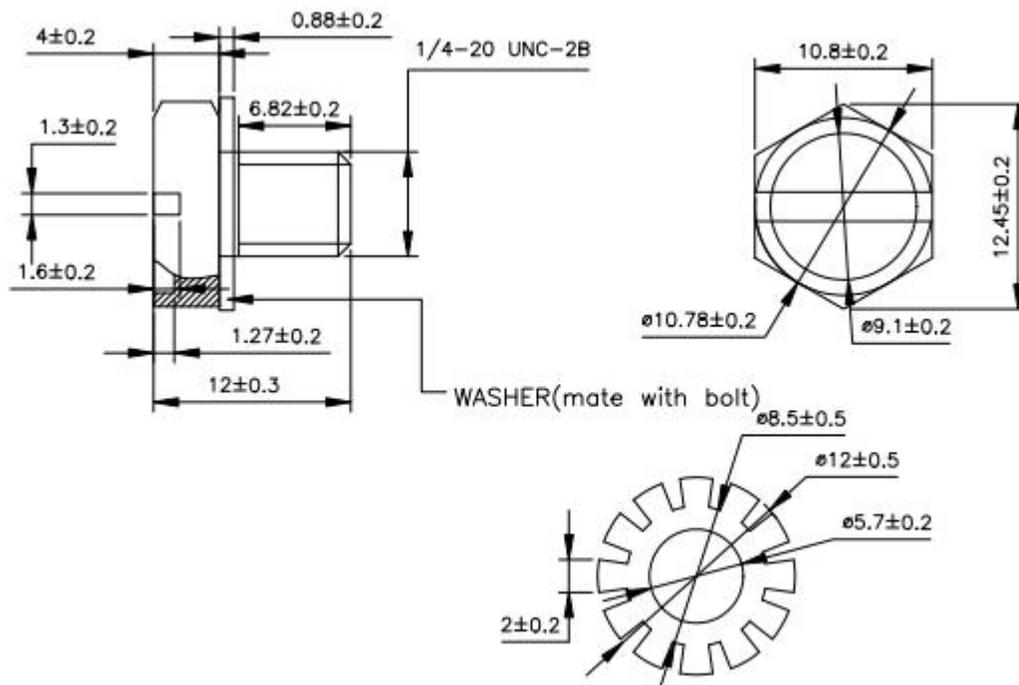
Device	Package	Shipping
503CNQ SERIES	PRM4(Non- Isolated) (Pb-Free)	9 pcs/box

Mechanical Dimensions PRM4 Non-Isolated(Millimeters/Inches)



SYMBOL	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	78.74	81.28	3.100	3.200
B	37.47	42.55	1.475	1.675
C	6.89	7.69	0.271	0.303
D	19.51	24.59	0.768	0.968
E	33.02	38.10	1.300	1.500
F	17.78	20.32	0.700	0.800
G	60.96	64.77	2.400	2.550
H	17.26	23.25	0.680	0.915
I	90.17	92.71	3.550	3.650
J	3.02	3.68	0.119	0.145
K	14.30	16.15	0.563	0.636
L	9.27	10.79	0.365	0.425
M	4.37	5.28	0.172	0.208

1/4-20 screws (Millimeters)



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