

503CNQ080/503CNQ100 SCHOTTKY RECTIFIER

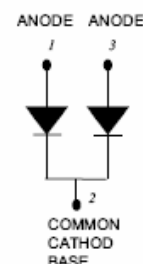
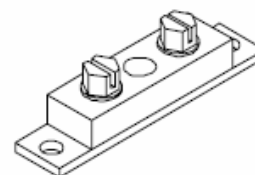
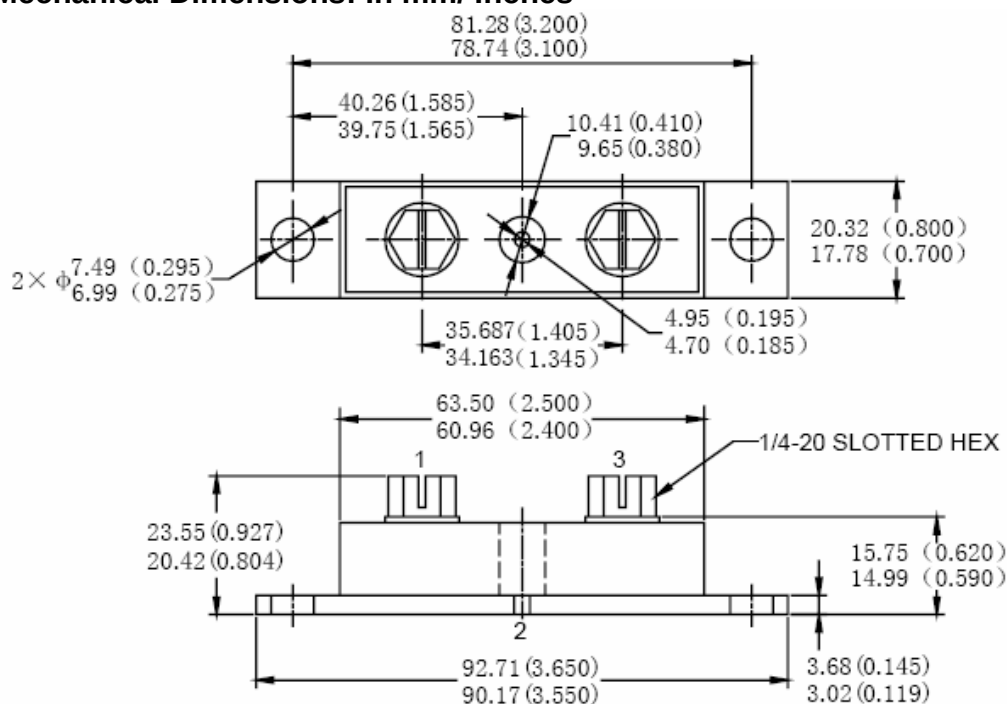
Applications:

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

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
- This is a Pb – Free Device
- All SMC parts are traceable to the wafer lot
- Additional testing can be offered upon request

Mechanical Dimensions: In mm/ Inches



PRM4 (Non-Isolated)

MARKING, MOLDING RESIN

Marking for 503CNQ080/100, 1st row SS YYWWL, 2nd row 503CNQ080/100

Where YY is the manufacture year

WW is the manufacture week code

L is the wafer's Lot Number

Molding resin

Epoxy resin UL:94V-0

Maximum Ratings:

Characteristics	Symbol	Condition	Max.		Units
Peak Inverse Voltage	V_{RWM}	-	80	503CNQ080	V
			100	503CNQ100	
Max. Average Forward Current	$I_{F(AV)}$	50% duty cycle @ $T_C = 122^\circ\text{C}$, rectangular wave form	250	per leg	A
			500	per device	
Max. Peak One Cycle Non-Repetitive Surge Current (per leg)	I_{FSM}	8.3 ms, half Sine pulse	5000		A

Electrical Characteristics:

Characteristics	Symbol	Condition	Max.	Units
Max. Forward Voltage Drop (per leg) *	V_{F1}	@ 250A, Pulse, $T_J = 25^\circ\text{C}$	0.90	V
	V_{F2}	@ 250A, Pulse, $T_J = 175^\circ\text{C}$	0.72	V
Max. Reverse Current (per leg) *	I_{R1}	@ $V_R = \text{rated } V_R$, $T_J = 25^\circ\text{C}$	8	mA
	I_{R2}	@ $V_R = \text{rated } V_R$, $T_J = 125^\circ\text{C}$	200	mA
Max. Junction Capacitance (per leg)	C_T	@ $V_R = 5\text{V}$, $T_C = 25^\circ\text{C}$ $f_{SIG} = 1\text{MHz}$	7200	pF
Typical Series Inductance (per leg)	L_S	Measured lead to lead 5 mm from package body	5.0	nH
Max. 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
Max. Junction Temperature	T _J	-	-55 to +175		°C
Max. Storage Temperature	T _{stg}	-	-55 to +175		°C
Maximum Thermal Resistance Junction to Case (per leg)	R _{θJC}	DC operation	0.24		°C/W
Maximum Thermal Resistance Junction to Case (per package)	R _{θJC}	DC operation	0.12		°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	24(min) 35(max)	Kg-cm
			Terminal Torque	35(min) 46(max)	
Approximate Weight	wt	-	78		g
Case Style	PRM4 Non-Isolated				

Figure 1
Typical Forward Characteristics – Per Leg

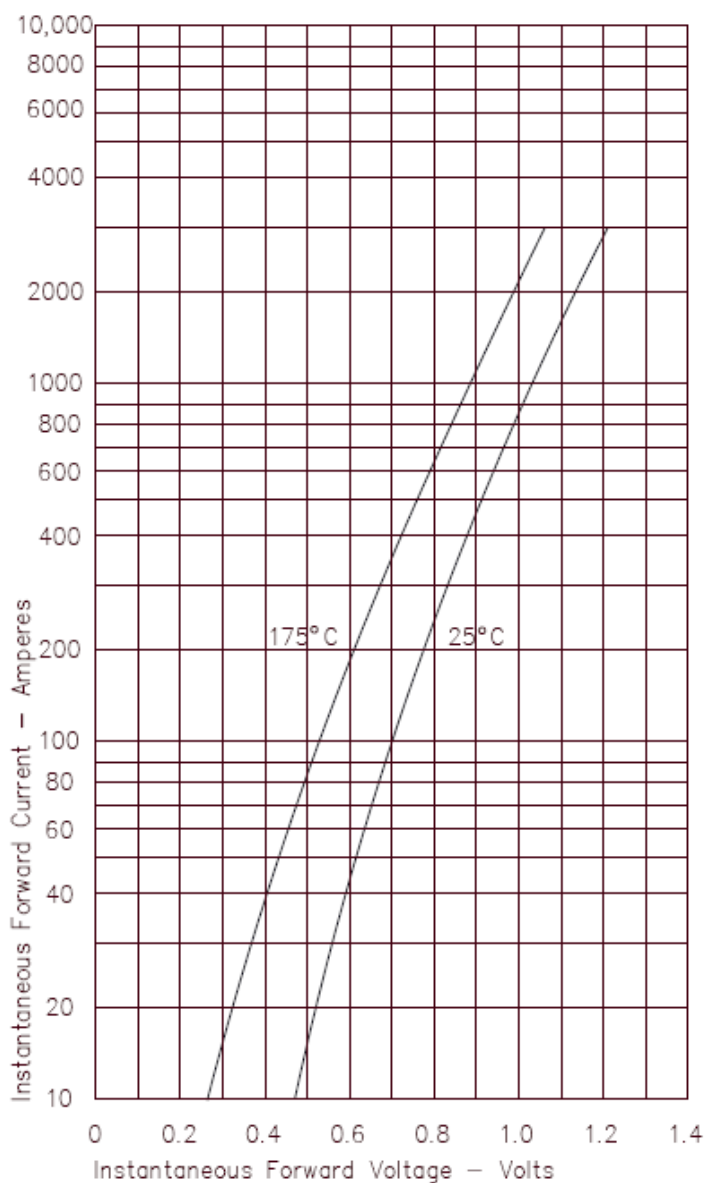


Figure 2
Typical Reverse Characteristics – Per Leg

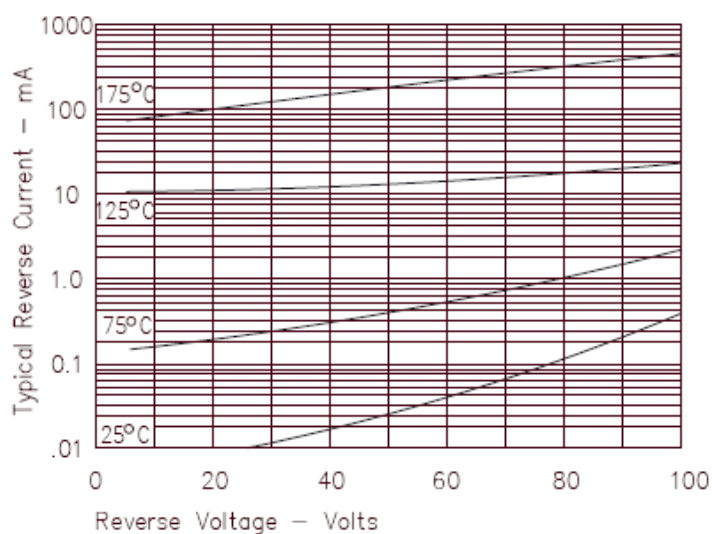
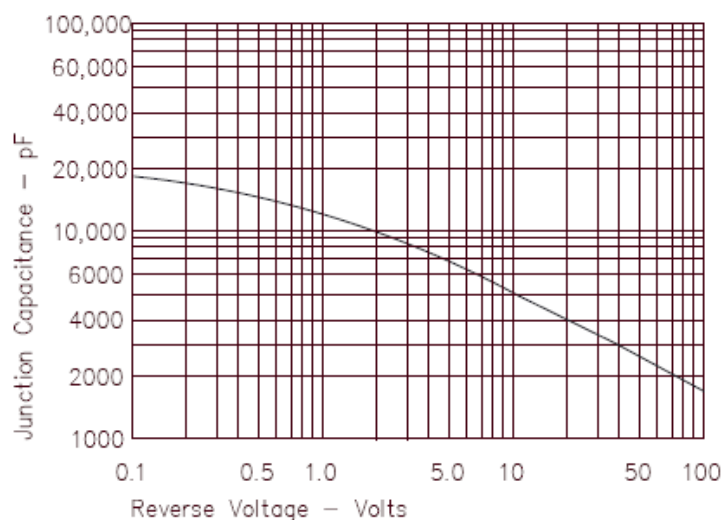


Figure 3
Typical Junction Capacitance – Per Leg



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