

Technical Data
Data Sheet N1445, Rev. -

Green Products

503CNQ080/503CNQ100 SCHOTTKY RECTIFIER

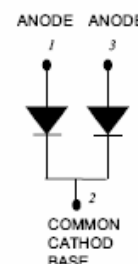
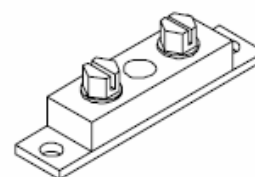
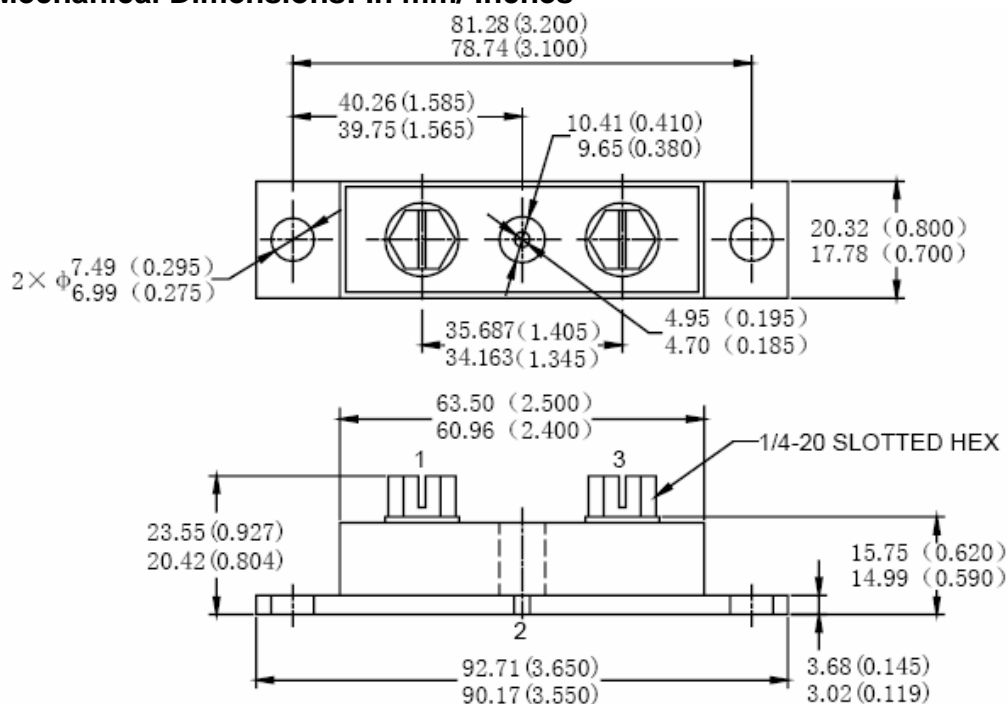
Applications:

- 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

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Maximum Ratings:

Characteristics	Symbol	Condition	Max.	Units
Peak Inverse Voltage	V_{RWM}	-	80	V
			100	
Max. Average Forward Current	$I_{F(AV)}$	50% duty cycle @ $T_C=122^{\circ}C$, rectangular wave form	250	A
			500	
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, $T_J = 25^{\circ}C$	0.90	V
	V_{F2}	@ 250A, Pulse, $T_J = 175^{\circ}C$	0.72	V
Max. Reverse Current (per leg) *	I_{R1}	@ $V_R = \text{rated } V_R$, $T_J = 25^{\circ}C$	8	mA
	I_{R2}	@ $V_R = \text{rated } V_R$, $T_J = 125^{\circ}C$	200	mA
Max. Junction Capacitance (per leg)	C_T	@ $V_R = 5V$, $T_C = 25^{\circ}C$ $f_{SIG} = 1MHz$	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	$^{\circ}C$
Max. Storage Temperature	T_{stg}	-	-55 to +175	$^{\circ}C$
Maximum Thermal Resistance Junction to Case (per leg)	$R_{\theta JC}$	DC operation	0.24	$^{\circ}C/W$
Maximum Thermal Resistance Junction to Case (per package)	$R_{\theta JC}$	DC operation	0.12	$^{\circ}C/W$
Typical Thermal Resistance, case to Heat Sink	$R_{\theta cs}$	Mounting surface, smooth and greased	0.08	$^{\circ}C/W$
Mounting Torque	T_M	-	Mounting Torque	Kg-cm
			Terminal Torque	
Approximate Weight	wt	-	78	g
Case Style	PRM4 Non-Isolated			

Figure 1
Typical Forward Characteristics – Per Leg

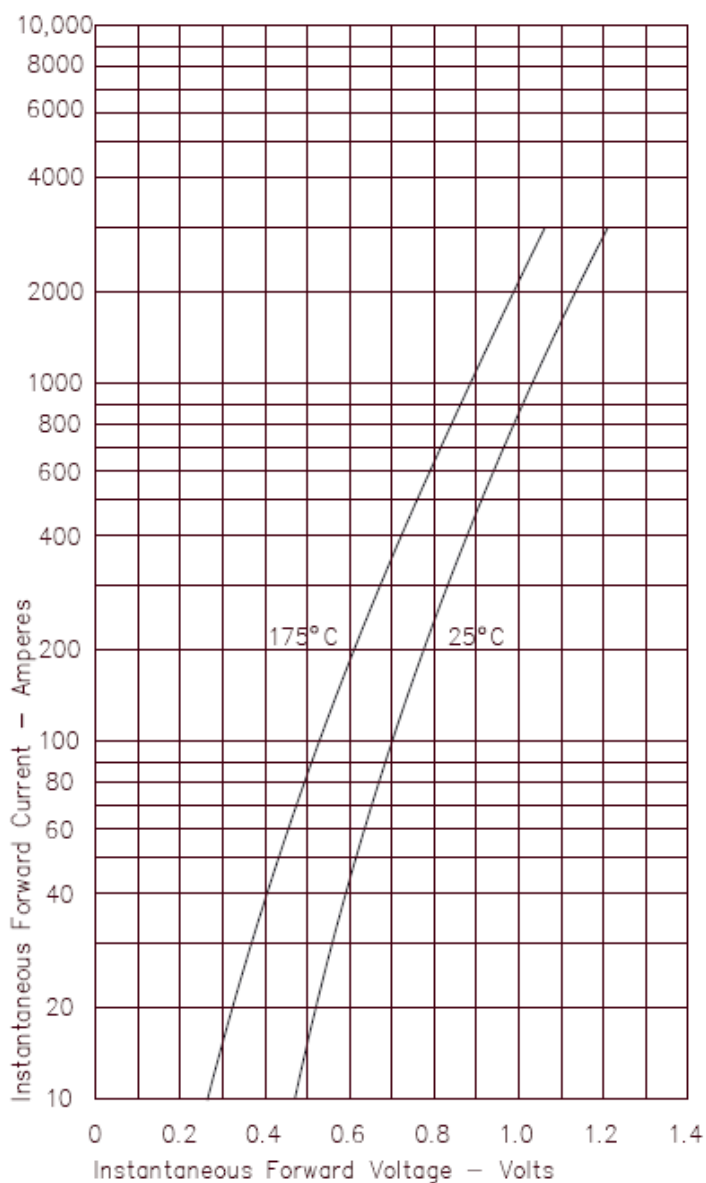


Figure 2
Typical Reverse Characteristics – Per Leg

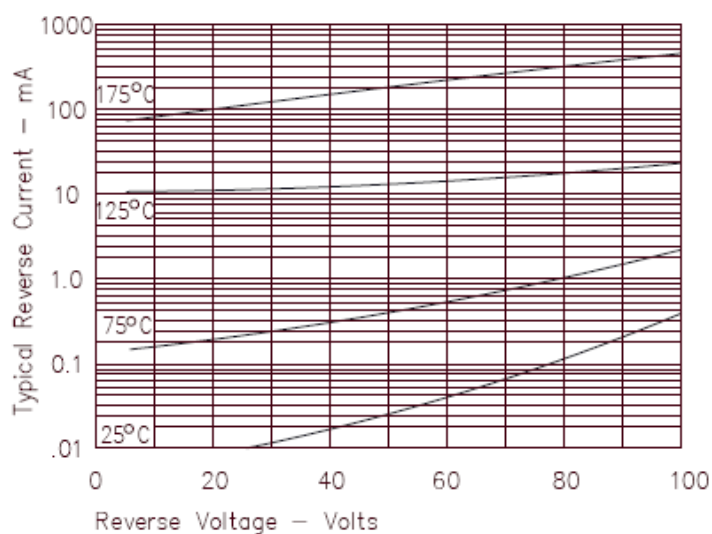
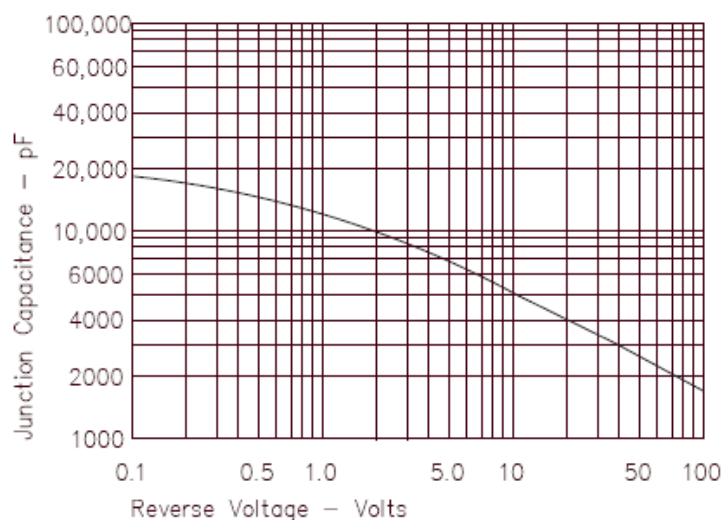


Figure 3
Typical Junction Capacitance – Per Leg



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