

Technical Data  
Data Sheet N1188, Rev. A

Green Products

## 201CNQ035/201CNQ040/201CNQ045/201CNQ050 SCHOTTKY RECTIFIER

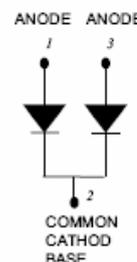
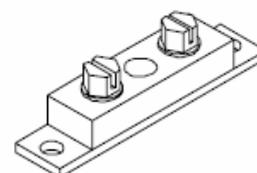
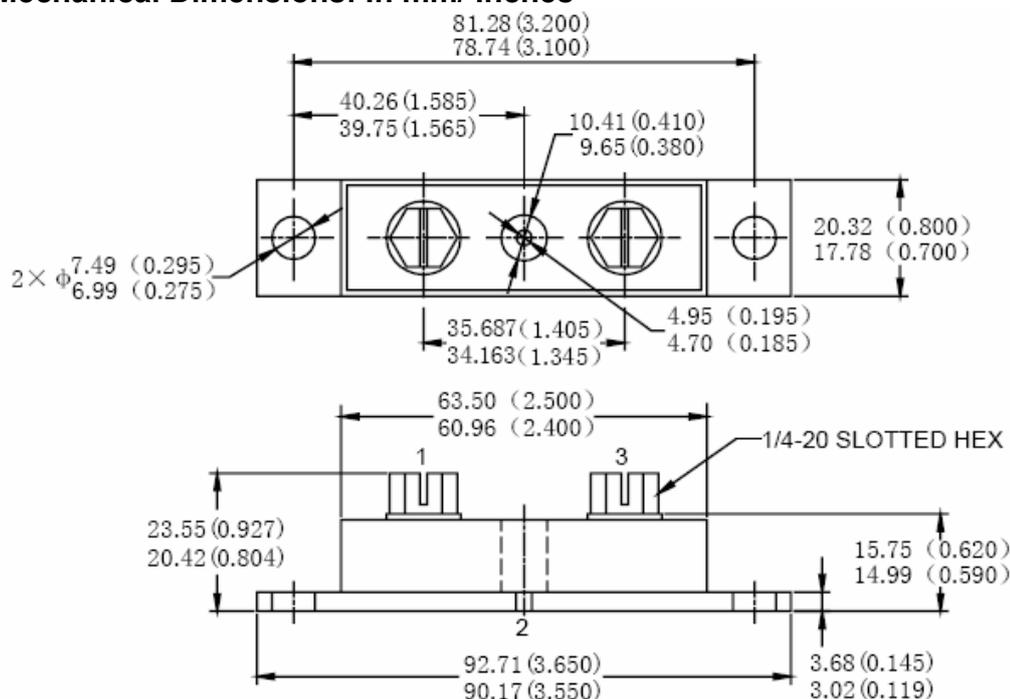
**Applications:**

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

**Features:**

- 175 °C T<sub>J</sub> 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 201CNQ035/040/045/050, 1<sup>st</sup> row SS YYWWL, 2<sup>nd</sup> row 201CNQ035/040/045/050  
 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:**
**Green Products**

Characteristics	Symbol	Condition	Max.		Units
Peak Inverse Voltage	$V_{RWM}$	-	35	201CNQ035	V
			40	201CNQ040	
			45	201CNQ045	
			50	201CNQ050	
Max. Average Forward	$I_{F(AV)}$	50% duty cycle @ $T_C=121^\circ\text{C}$ , rectangular wave form	100	per leg	A
200	per device				
Max. Peak One Cycle Non-Repetitive Surge Current (per leg)	$I_{FSM}$	8.3 ms, half Sine pulse	3840		A
Non-Repetitive Avalanche Energy(per leg)	$E_{AS}$	$T_J=25^\circ\text{C}, I_{AS}=20\text{A}, L=0.67\text{mH}$	135		mJ
Repetitive Avalanche Current(per leg)	$I_{AR}$	Current decaying linearly to zero in 1 $\mu\text{sec}$ Frequency limited by $T_J$ max. $V_A=1.5 \times V_R$ typical	20		A

**Electrical Characteristics:**

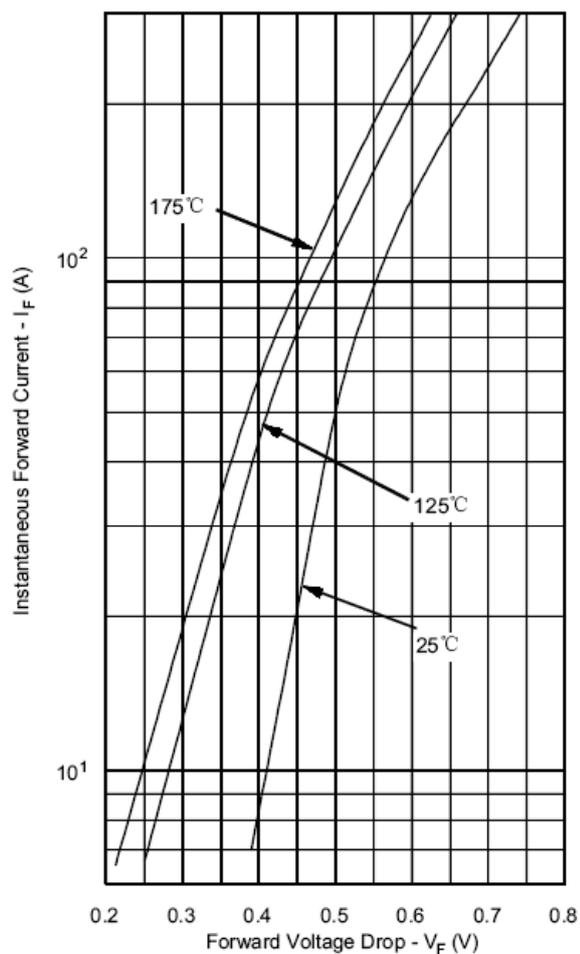
Characteristics	Symbol	Condition	Max.	Units
Max. Forward Voltage Drop (per leg) *	$V_{F1}$	@ 100A, Pulse, $T_J = 25^\circ\text{C}$	0.67	V
		@ 200A, Pulse, $T_J = 25^\circ\text{C}$	0.81	
Max. Reverse Current (per leg) *	$V_{F2}$	@ 100A, Pulse, $T_J = 125^\circ\text{C}$	0.58	V
		@ 200A, Pulse, $T_J = 125^\circ\text{C}$	0.71	
Max. Reverse Current (per leg) *	$I_{R1}$	@ $V_R = \text{rated } V_R$ $T_J = 25^\circ\text{C}$	10	mA
		@ $V_R = \text{rated } V_R$ $T_J = 125^\circ\text{C}$	90	
Max. Junction Capacitance (per leg)	$C_T$	@ $V_R = 5\text{V}, T_C = 25^\circ\text{C}$ $f_{SIG} = 1\text{MHz}$	5200	pF
Typical Series Inductance (per leg)	$L_S$	Measured lead to lead 5 mm from package body	7.0	nH
Max. Voltage Rate of Change	$dv/dt$	-	10,000	V/ $\mu\text{s}$

\* Pulse Width < 300 $\mu\text{s}$ , Duty Cycle <2%

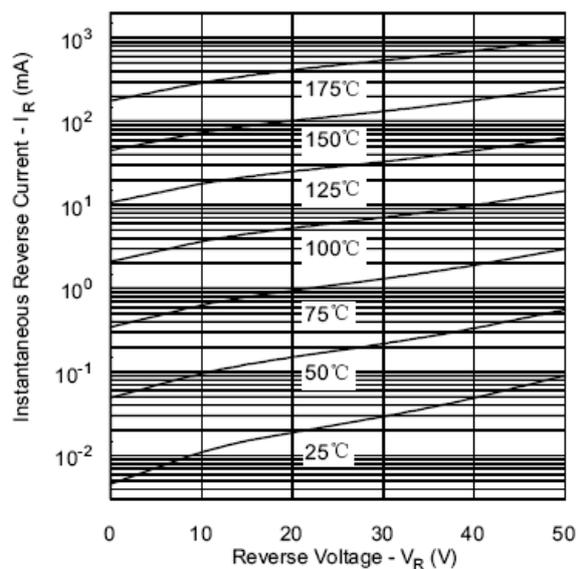
**Thermal-Mechanical Specifications:**

Characteristics	Symbol	Condition	Specification	Units	
Max. Junction Temperature	$T_J$	-	-55 to +175	$^\circ\text{C}$	
Max. Storage Temperature	$T_{stg}$	-	-55 to +175	$^\circ\text{C}$	
Maximum Thermal Resistance Junction to Case (per leg)	$R_{\theta JC}$	DC operation	0.50	$^\circ\text{C/W}$	
Maximum Thermal Resistance Junction to Case (per package)	$R_{\theta JC}$	DC operation	0.25	$^\circ\text{C/W}$	
Typical Thermal Resistance, case to Heat Sink	$R_{\theta cs}$	Mounting surface, smooth and greased	0.10	$^\circ\text{C/W}$	
Mounting Torque	$T_M$	-	Mounting Torque	24(min) 35(max)	Kg-cm
			Terminal Torque	35(min) 46(max)	
Approximate Weight	wt	-	79	g	
Case Style	PRM4 Non-Isolated				

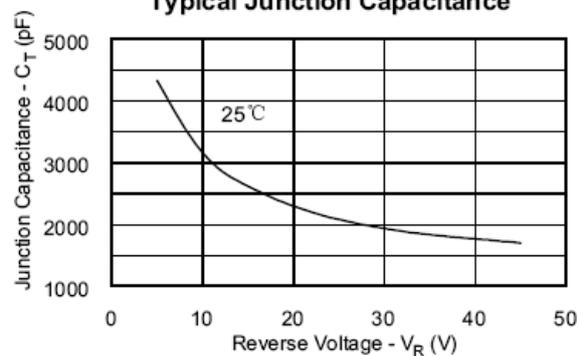
**Typical Forward Characteristics**



**Typical Reverse Characteristics**



**Typical Junction Capacitance**



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