

Technical Data  
Data Sheet N0989, Rev. D

## 203CMQ080/100 SCHOTTKY RECTIFIER

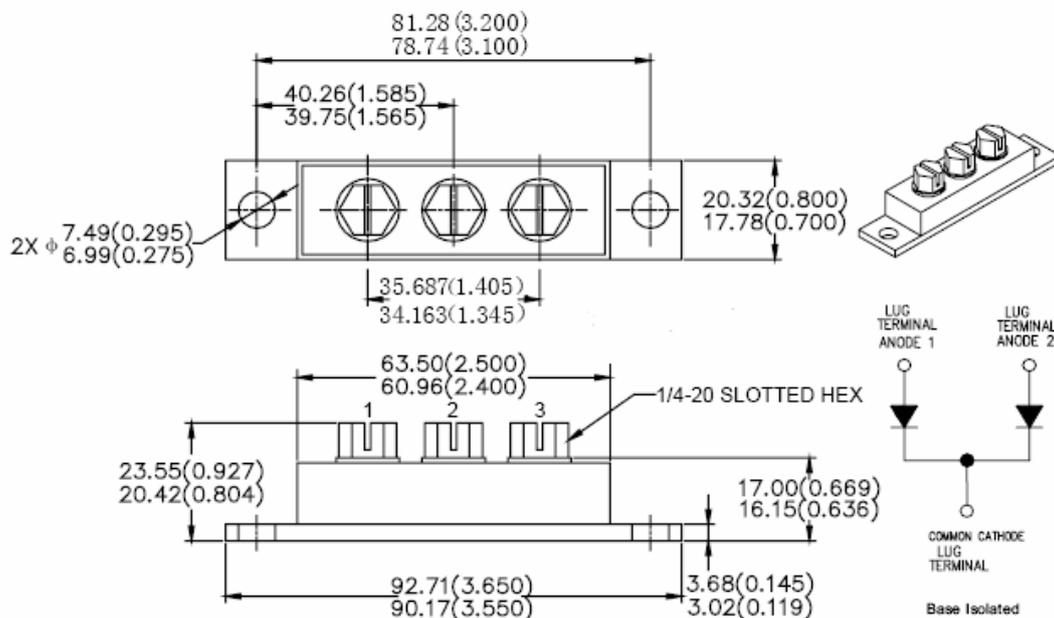
### Applications:

- 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
- Product contain Pb
- All SMC parts are traceable to the wafer lot
- Additional testing can be offered upon request

### Mechanical Dimensions: In mm/Inches



Please Note: Anode 1 = Terminal 1; Anode 2 = Terminal 3; Common Cathode = Terminal 2  
Suffix R Denotes for Reversed Polarity.

### PRM4 (Isolated)

#### MARKING, MOLDING RESIN

Marking for 203CMQ080/100, 1<sup>st</sup> row SS YYWWL, 2<sup>nd</sup> row 203CMQ080/100

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 <sub>RWM</sub>   | -   | 80   | 203CMQ080  | V     |
|   |                    |   | 100  | 203CMQ100  |       |
| Average Forward Current                               | I <sub>F(AV)</sub> | 50% duty cycle @T <sub>C</sub> =110°C,<br>rectangular wave form   | 100  | per leg    | A     |
|   |                    |   | 200  | per device |       |
| Peak One Cycle Non-Repetitive Surge Current (per leg) | I <sub>FSM</sub>   | 8.3 ms, half Sine pulse   | 2520 |            | A     |
| Non-Repetitive Avalanche Energy(per leg)              | E <sub>AS</sub>    | T <sub>J</sub> =25°C,I <sub>AS</sub> =1A,L=30mH   | 15   |            | mJ    |
| Repetitive Avalanche Current(per leg)                 | I <sub>AR</sub>    | Current decaying linearly to zero in 1 μsec Frequency limited by T <sub>J</sub> max. V <sub>A</sub> =1.5×V <sub>R</sub> typical | 1    |            | A     |

**Electrical Characteristics:**

| Characteristics                     | Symbol           | Condition  | Max.         | Units |
|-------------------------------------|------------------|--|--------------|-------|
| Forward Voltage Drop (per leg) *    | V <sub>F1</sub>  | @ 100A, Pulse, T <sub>J</sub> = 25 °C<br>@ 200A, Pulse, T <sub>J</sub> = 25 °C   | 0.86<br>1.03 | V     |
|                                     | V <sub>F2</sub>  | @ 100A, Pulse, T <sub>J</sub> = 125 °C<br>@ 200A, Pulse, T <sub>J</sub> = 125 °C | 0.70<br>0.84 | V     |
| Reverse Current (per leg) *         | I <sub>R1</sub>  | @V <sub>R</sub> = rated V <sub>R</sub> T <sub>J</sub> = 25 °C                    | 3            | mA    |
|                                     | I <sub>R2</sub>  | @V <sub>R</sub> = rated V <sub>R</sub> T <sub>J</sub> = 125 °C                   | 40           | mA    |
| Junction Capacitance (per leg)      | C <sub>T</sub>   | @V <sub>R</sub> = 5V, T <sub>C</sub> = 25 °C<br>f <sub>SIG</sub> = 1MHz          | 2650         | pF    |
| Typical Series Inductance (per leg) | L <sub>S</sub>   | Measured lead to lead 5 mm from package body                                     | 7.0          | nH    |
| Voltage Rate of Change              | dv/dt            | -  | 10,000       | V/μs  |
| Insulation Voltage                  | V <sub>RMS</sub> | -  | 1000         | V     |

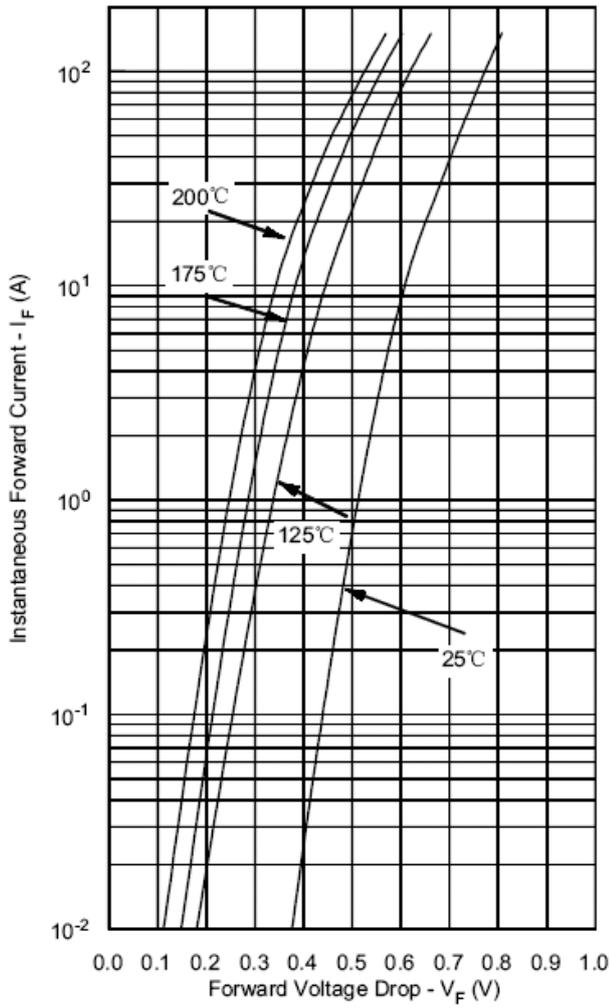
\* Pulse Width < 300μs, Duty Cycle <2%

**Thermal-Mechanical Specifications:**

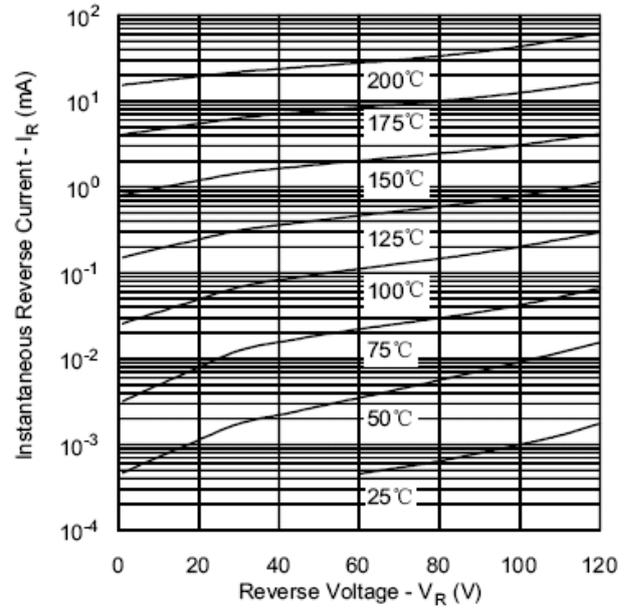
| Characteristics   | Symbol           | Condition                            | Specification   |                    | Units |
|---|------------------|--------------------------------------|-----------------|--------------------|-------|
| Junction Temperature                                      | T <sub>J</sub>   | -                                    | -55 to +175     |                    | °C    |
| Storage Temperature                                       | T <sub>stg</sub> | -                                    | -55 to +175     |                    | °C    |
| Maximum Thermal Resistance Junction to Case (per leg)     | R <sub>θJC</sub> | DC operation                         | 0.70            |                    | °C/W  |
| Maximum Thermal Resistance Junction to Case (per package) | R <sub>θJC</sub> | DC operation                         | 0.35            |                    | °C/W  |
| Typical Thermal Resistance, case to Heat Sink             | R <sub>θcs</sub> | Mounting surface, smooth and greased | 0.10            |                    | °C/W  |
| Mounting Torque   | T <sub>M</sub>   | -                                    | Mounting Torque | 24(min)<br>35(max) | Kg-cm |
|   |                  |                                      | Terminal Torque | 35(min)<br>46(max) |       |
| Approximate Weight  | wt               | -                                    | 79              |                    | g     |
| Case Style  | PRM4 Isolated    |                                      |                 |                    |       |

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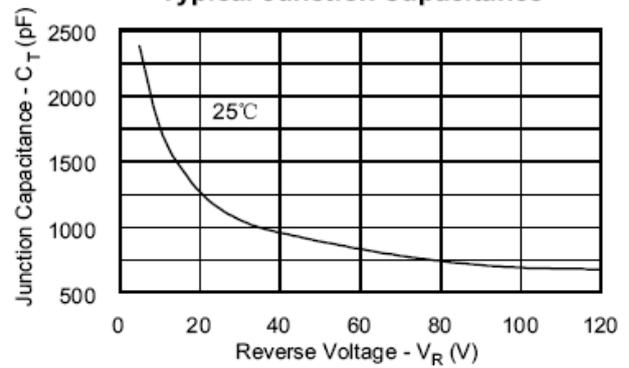
**Typical Forward Characteristics**



**Typical Reverse Characteristics**



**Typical Junction Capacitance**



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