



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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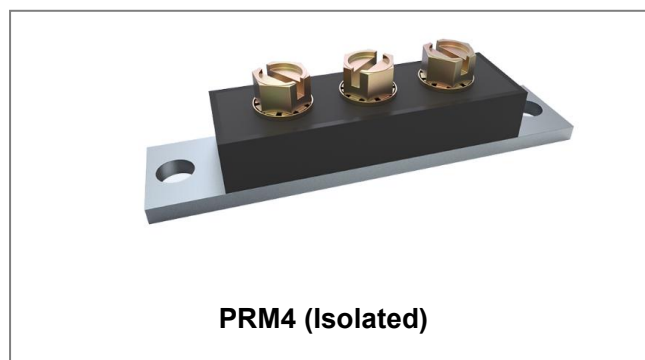
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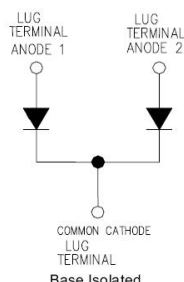
## 224CMQ035/224CMQ040/224CMQ045 SCHOTTKY RECTIFIER



### Features

- 125°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

### Circuit Diagram



### Applications

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

### Maximum Ratings:

| Characteristics                                                                        | Symbol             | Condition                                                                                                                          | Max.            |           | Units |
|----------------------------------------------------------------------------------------|--------------------|------------------------------------------------------------------------------------------------------------------------------------|-----------------|-----------|-------|
| Peak Repetitive Reverse Voltage<br>Working Peak Reverse Voltage<br>DC Blocking Voltage | V <sub>RRM</sub>   | -                                                                                                                                  | 35              | 224CMQ035 | V     |
|                                                                                        | V <sub>RWM</sub>   |                                                                                                                                    | 40              | 224CMQ040 |       |
|                                                                                        | V <sub>R</sub>     |                                                                                                                                    | 45              | 224CMQ045 |       |
| Average Rectified Forward Current                                                      | I <sub>F(AV)</sub> | 50% duty cycle @T <sub>C</sub> =81°C,<br>rectangular wave form                                                                     | 110(Per Leg)    |           | A     |
|                                                                                        |                    |                                                                                                                                    | 220(Per Device) |           |       |
| Peak One Cycle Non-Repetitive Surge Current (Per Leg)                                  | I <sub>FSM</sub>   | 8.3 ms, half Sine pulse                                                                                                            | 2880            |           | A     |
| Non-Repetitive Avalanche Energy(Peg Leg)                                               | E <sub>AS</sub>    | T <sub>J</sub> =25°C ,I <sub>AS</sub> =20A,L=0.67mH                                                                                | 135             |           | mJ    |
| Repetitive Avalanche Current (Peg Leg)                                                 | I <sub>AR</sub>    | Current decaying linearly to zero in 1 μsec<br>Frequency limited by T <sub>J</sub> max. V <sub>A</sub> =1.5×V <sub>R</sub> typical | 20              |           | A     |

**Electrical Characteristics:**

| Characteristics                | Symbol          | Condition                                                                        | Typ.      | Max.         | Units |
|--------------------------------|-----------------|----------------------------------------------------------------------------------|-----------|--------------|-------|
| Forward Voltage Drop(Per Leg)* | V <sub>F1</sub> | @ 110A, Pulse, T <sub>J</sub> = 25 °C<br>@ 220A, Pulse, T <sub>J</sub> = 25 °C   | 0.48<br>- | 0.52<br>0.68 | V     |
|                                | V <sub>F2</sub> | @ 110A, Pulse, T <sub>J</sub> = 125 °C<br>@ 220A, Pulse, T <sub>J</sub> = 125 °C | 0.42<br>- | 0.50<br>0.68 | V     |
| Reverse Current(Per Leg)*      | I <sub>R1</sub> | @V <sub>R</sub> = rated V <sub>R</sub> , T <sub>J</sub> = 25 °C                  | 2         | 10           | mA    |
|                                | I <sub>R2</sub> | @V <sub>R</sub> = rated V <sub>R</sub> , T <sub>J</sub> = 125 °C                 | 1500      | 2000         | 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          | 4300      | 5200         | pF    |
| Voltage Rate of Change         | dv/dt           | -                                                                                | -         | 10,000       | V/μs  |

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

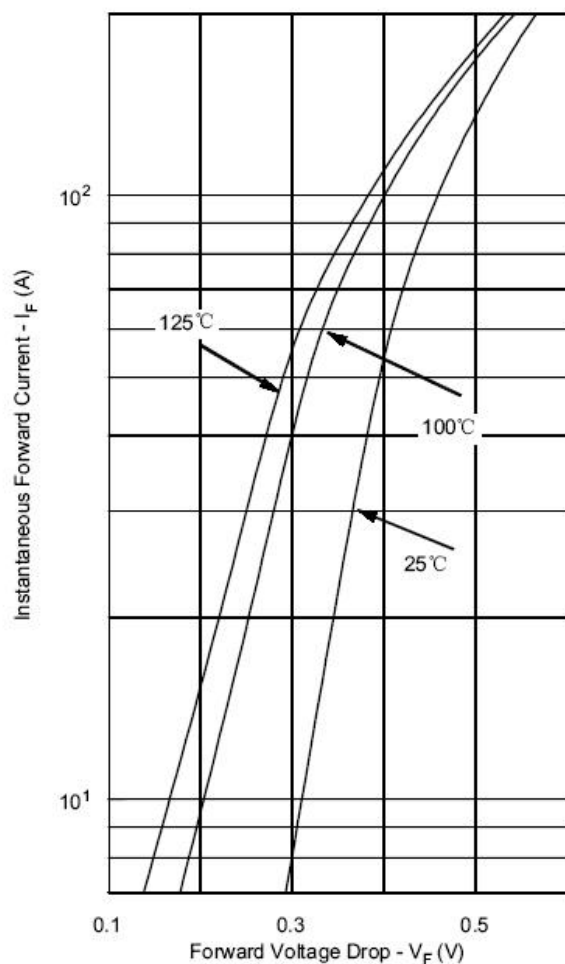
**Thermal-Mechanical Specifications:**

| Characteristics                                          | Symbol           | Condition                            | Specification   |                    | Units |
|----------------------------------------------------------|------------------|--------------------------------------|-----------------|--------------------|-------|
| Junction Temperature                                     | T <sub>J</sub>   | -                                    | -55 to +125     |                    | °C    |
| Storage Temperature                                      | T <sub>stg</sub> | -                                    | -55 to +125     |                    | °C    |
| Typical Thermal Resistance Junction to Case(Per leg)     | R <sub>θJC</sub> | DC operation                         | 0.70            |                    | °C/W  |
| Typical 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                                          | TM               | -                                    | 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    |                                      |                 |                    |       |

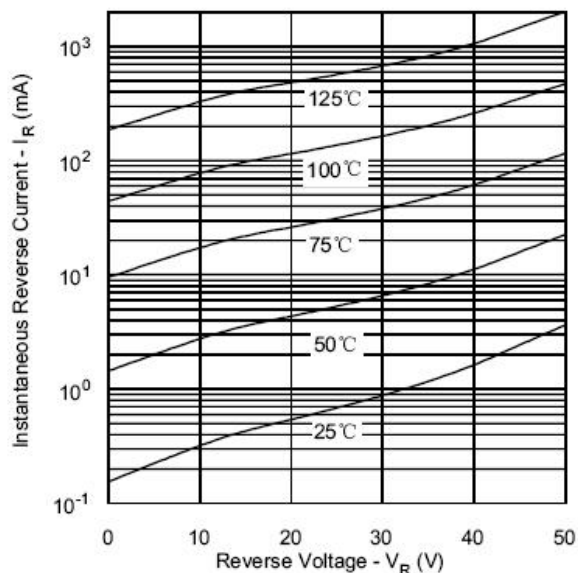


**Ratings and Characteristics Curves**

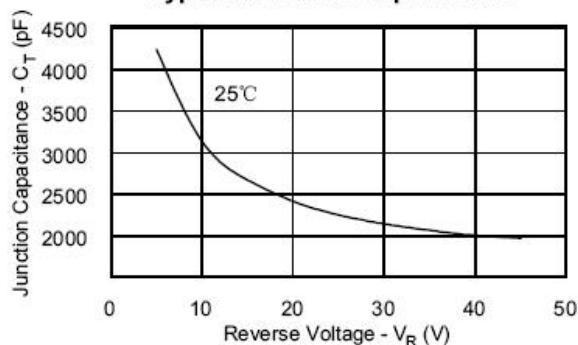
**Typical Forward Characteristics**



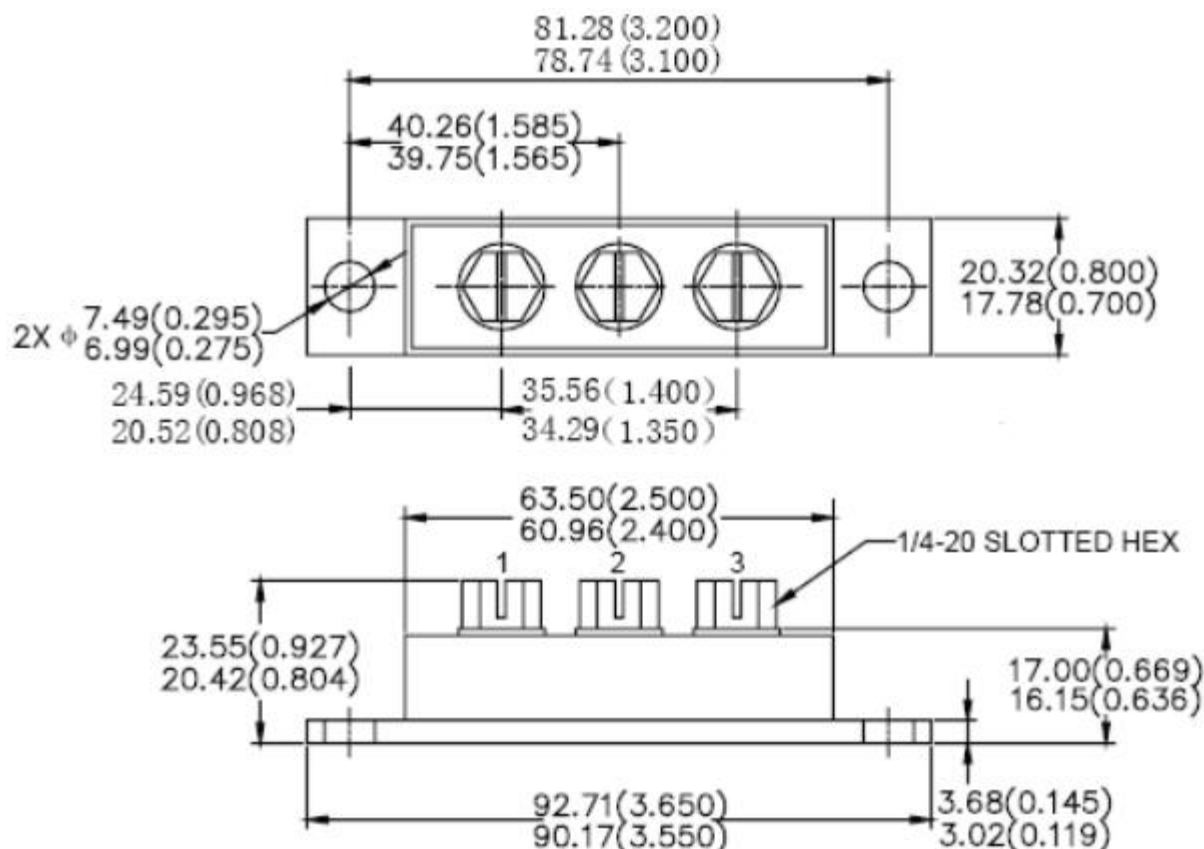
**Typical Reverse Characteristics**



**Typical Junction Capacitance**



**Mechanical Dimensions PRM4 Isolated (Millimeters/Inches)**



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

**Marking Diagram**



Where XXXX is YYWW

224CMQ035 = Part name  
SS = SS  
YY = Year  
WW = Week

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

**Ordering Information**

| Device        | Package                 | Shipping  |
|---------------|-------------------------|-----------|
| 224CMQ SERIES | PRM4 Isolated (Pb-Free) | 9 pcs/box |

For information on tape and reel specifications, including part orientation and tape sizes, please refer to our tape and reel packaging specification.

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