

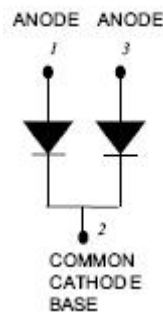
444CNQ035/444CNQ040/444CNQ045 SCHOTTKY RECTIFIER



Features

- 125°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
- Baseplate: Nickel plated; Terminals: Nickel plated
- 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 | V _{RRM} | - | 35 | V |
| Working Peak Reverse Voltage | V _{RWM} | | 40 | |
| DC Blocking Voltage | V _R | | 45 | |
| Average Rectified Forward Current | I _{F(AV)} | 50% duty cycle @T _C =81°C, rectangular wave form | 220(Per Leg) 440(Per Device) | A |
| Peak One Cycle Non-Repetitive Surge Current (Per Leg) | I _{FSM} | 8.3 ms, half Sine pulse | 4560 | A |
| Non-Repetitive Avalanche Energy(Peg Leg) | E _{AS} | T _J =25°C, I _{AS} =40A, L=0.34mH | 270 | mJ |
| Repetitive Avalanche Current (Peg Leg) | I _{AR} | Current decaying linearly to zero in 1 µsec Frequency limited by T _J max. V _A =1.5×V _R typical | 40 | A |

Electrical Characteristics:

| Characteristics | Symbol | Condition | Typ. | Max. | Units |
|--------------------------------|-----------------|--|--------------|--------------|-------|
| Forward Voltage Drop(Per Leg)* | V _{F1} | @ 220A, Pulse, T _J = 25 °C @ 440A, Pulse, T _J = 25 °C | 0.48 0.59 | 0.53 0.69 | V |
| | V _{F2} | @ 220A, Pulse, T _J = 125 °C @ 440A, Pulse, T _J = 125 °C | 0.43 0.55 | 0.51 0.68 | V |
| Reverse Current(Per Leg)* | I _{R1} | @V _R = rated V _R , T _J = 25 °C | 5 | 20 | mA |
| | I _{R2} | @V _R = rated V _R , T _J = 125 °C | 3000 | 3500 | mA |
| Junction Capacitance(Per leg) | C _T | @V _R = 5V, T _C = 25 °C f _{sig} = 1MHz | 8500 | 10300 | pF |
| Voltage Rate of Change | dv/dt | - | - | 10,000 | V/μs |

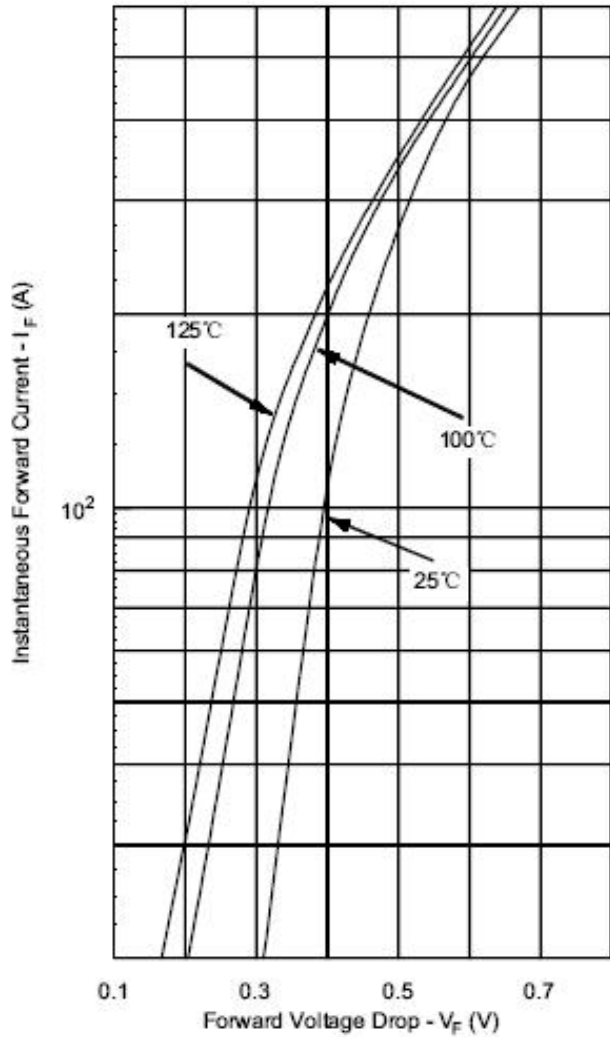
* Pulse width < 300 μs, duty cycle < 2%

Thermal-Mechanical Specifications:

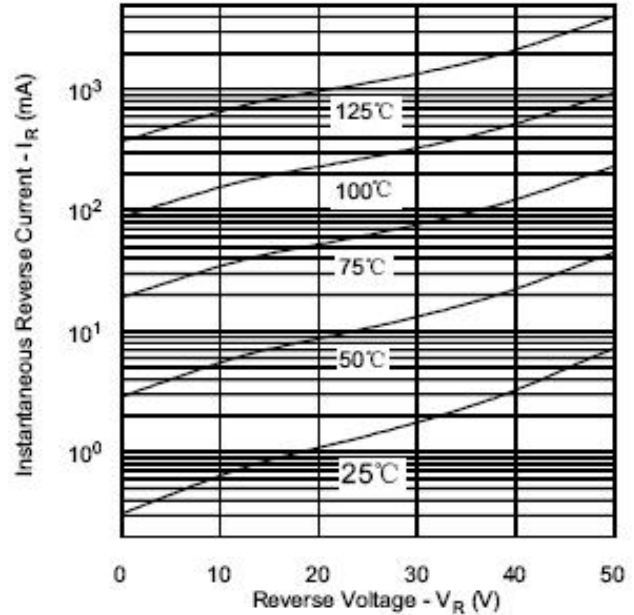
| Characteristics | Symbol | Condition | Specification | Units | |
|--|-------------------|--------------------------------------|-----------------|--------------------|-------|
| Junction Temperature | T _J | - | -55 to +125 | °C | |
| Storage Temperature | T _{stg} | - | -55 to +125 | °C | |
| Typical Thermal Resistance Junction to Case(Per leg) | R _{θJC} | DC operation | 0.20 | °C/W | |
| Typical Thermal Resistance Junction to Case(Per package) | R _{θJC} | DC operation | 0.10 | °C/W | |
| Typical Thermal Resistance, case to Heat Sink | R _{θcs} | Mounting surface, smooth and greased | 0.10 | °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 | | | | |

Ratings and Characteristics Curves

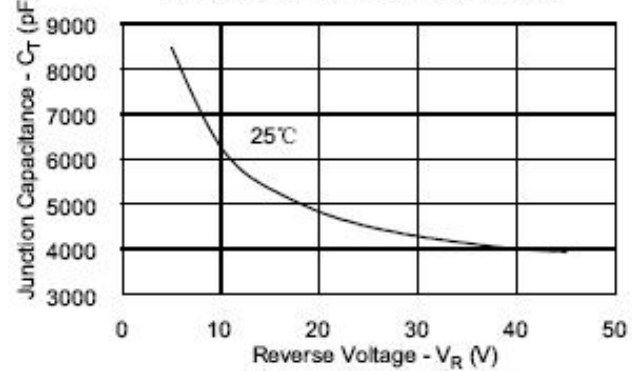
Typical Forward Characteristics



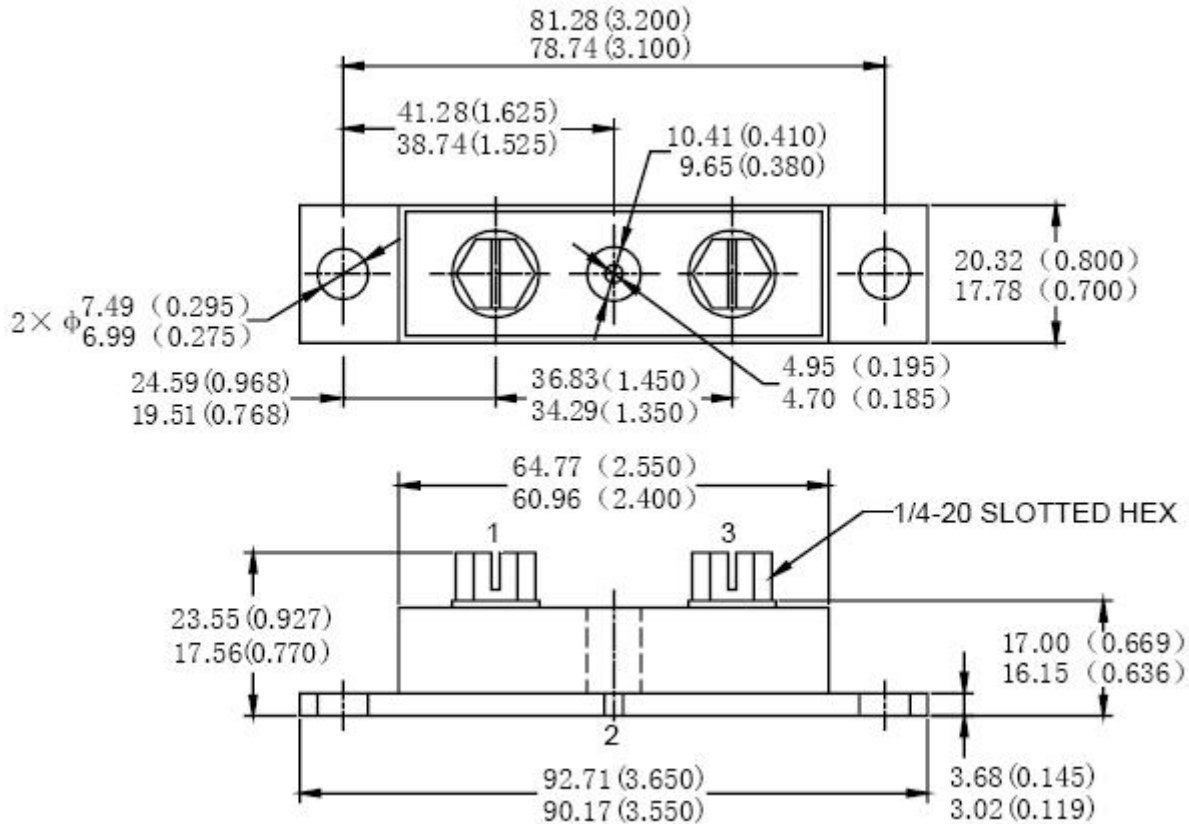
Typical Reverse Characteristics



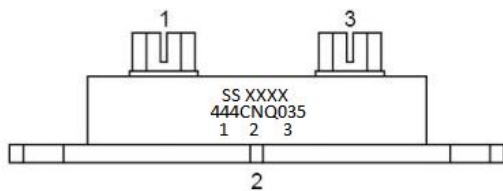
Typical Junction Capacitance



Mechanical Dimensions PRM4 Non-Isolated(Millimeters/Inches)



Marking Diagram



Where XXXX is YYWW

444CNQ035 = Part name
SS = SS
YY = Year
WW = Week

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

Ordering Information

| Device | Package | Shipping |
|----------------|----------------------------------|-----------|
| 444 CNQ SERIES | PRM4(Non- 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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