




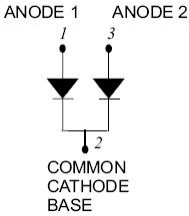
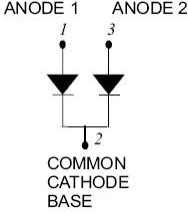
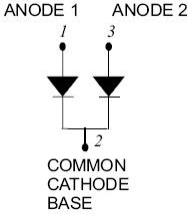
83CNQ080/83CNQ100 SCHOTTKY RECTIFIER

Applications

- Switching power supply
- Converters
- Free-Wheeling diodes
- Reverse battery protection

Features

- 175°C T_J operation
- Center tap module
- Very Low forward voltage drop
- High purity, high temperature epoxy encapsulation for enhanced mechanical strength and moisture resistance
- High frequency operation
- Guard ring for enhanced ruggedness and long term reliability
- Low profile, high current package
- This is a Pb – Free Device
- All SMC parts are traceable to the wafer lot
- Additional electrical and life testing can be performed upon request

| 83CNQ... | 83CNQ...SL | 83CNQ...SM |
|---|---|---|
|  |  |  |
|  |  |  |
| PRM2 | PRM2-SL | PRM2-SM |

Maximum Ratings:

| Characteristics | Symbol | Condition | Max. | Units |
|--|--|---|--------------------------------|-------|
| Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage | V _{RRM} V _{RWM} V _R | - | 80 (83CNQ080) 100(83CNQ100) | V |
| Average Rectified Forward Current | I _{F (AV)} | 50% duty cycle @T _C =132°C, rectangular wave form | 40(Per Leg) 80(Per Device) | A |
| Peak One Cycle Non-Repetitive Surge Current(Per leg) | I _{FSM} | 8.3 ms, half Sine pulse | 860 | A |
| Non-Repetitive Avalanche Energy (Peg leg) | E _{AS} | T _J =25°C, I _{AS} =1A, L=30mH | 15 | 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 | 8 | A |

Electrical Characteristics:

| Characteristics | Symbol | Condition | Typ. | Max. | Units |
|----------------------------------|-----------------|---|--------|--------|-------|
| Forward Voltage Drop (Per leg) * | V _{F1} | @ 40A, Pulse, T _J = 25 °C | 0.76 | 0.81 | V |
| | | @ 80A, Pulse, T _J = 25 °C | 0.81 | 1.00 | |
| | V _{F2} | @ 40A, Pulse, T _J = 125 °C | 0.60 | 0.67 | V |
| | | @ 80A, Pulse, T _J = 125 °C | 0.69 | 0.82 | |
| Reverse Current (Per leg) * | I _{R1} | @V _R = rated VR T _J = 25 °C | 0.0004 | 1.5 | mA |
| | I _{R2} | @V _R = rated VR T _J = 125 °C | 1.8 | 35 | mA |
| Junction Capacitance (Per leg) | C _T | @V _R = 5V, T _C = 25 °C f _{SIG} = 1MHz | 1200 | 1400 | pF |
| Voltage Rate of Change | dv/dt | - | - | 10,000 | V/μs |

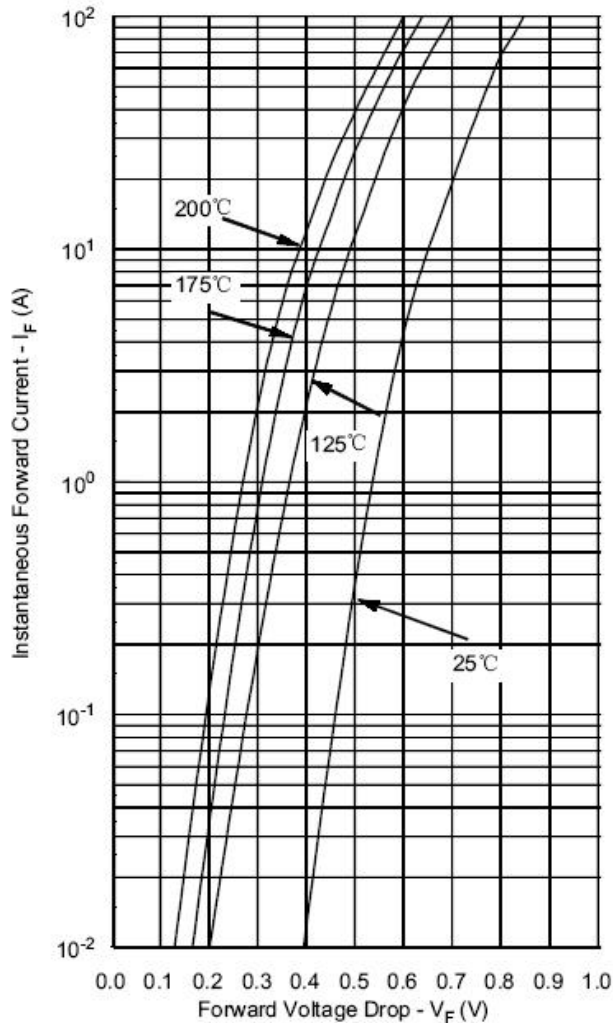
* Pulse width < 300 μs, duty cycle < 2%

Thermal-Mechanical Specifications:

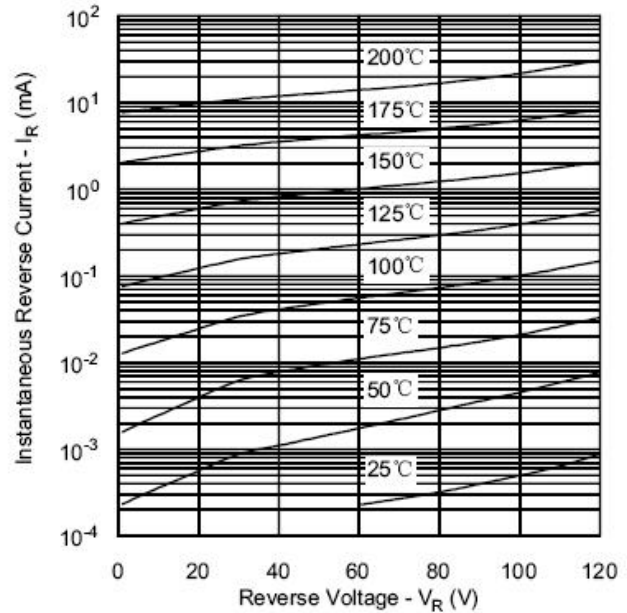
| Characteristics | Symbol | Condition | Specification | Units |
|---|----------------------|---|---------------|-------|
| Junction Temperature | T _J | - | -55 to +175 | °C |
| Storage Temperature | T _{stg} | - | -55 to +175 | °C |
| Typical Thermal Resistance Junction to Case (per leg) | R _{θJC} | DC operation | 0.85 | °C/W |
| Typical Thermal Resistance Junction to Case (per package) | R _{θJC} | DC operation | 0.42 | °C/W |
| Typical Thermal Resistance, case to Heat Sink | R _{θcs} | Mounting surface, smooth and greased | 0.30 | °C/W |
| Mounting Torque | TM | - | 40(min) | Kg-cm |
| | | | 58(max) | |
| Approximate Weight | wt | - | 7.8 | g |
| Case Style | PRM2 PRM2-SL PRM2-SM | | | |

Ratings and Characteristics Curves

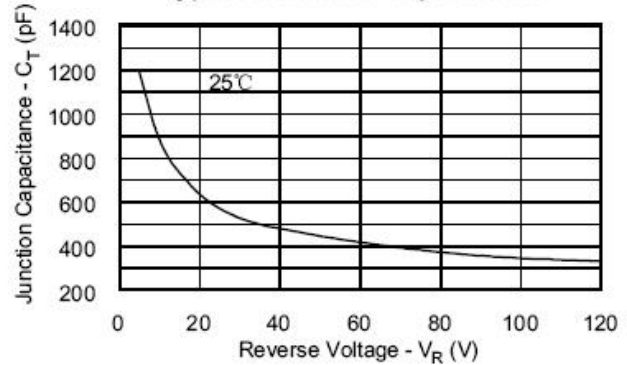
Typical Forward Characteristics



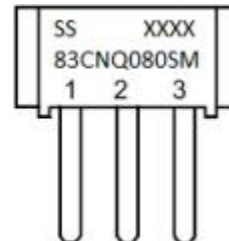
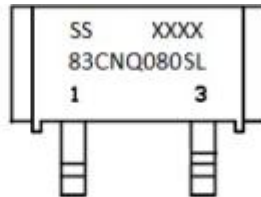
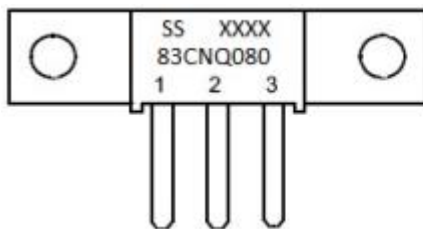
Typical Reverse Characteristics



Typical Junction Capacitance



Marking Diagram



Where XXXX is YYWW

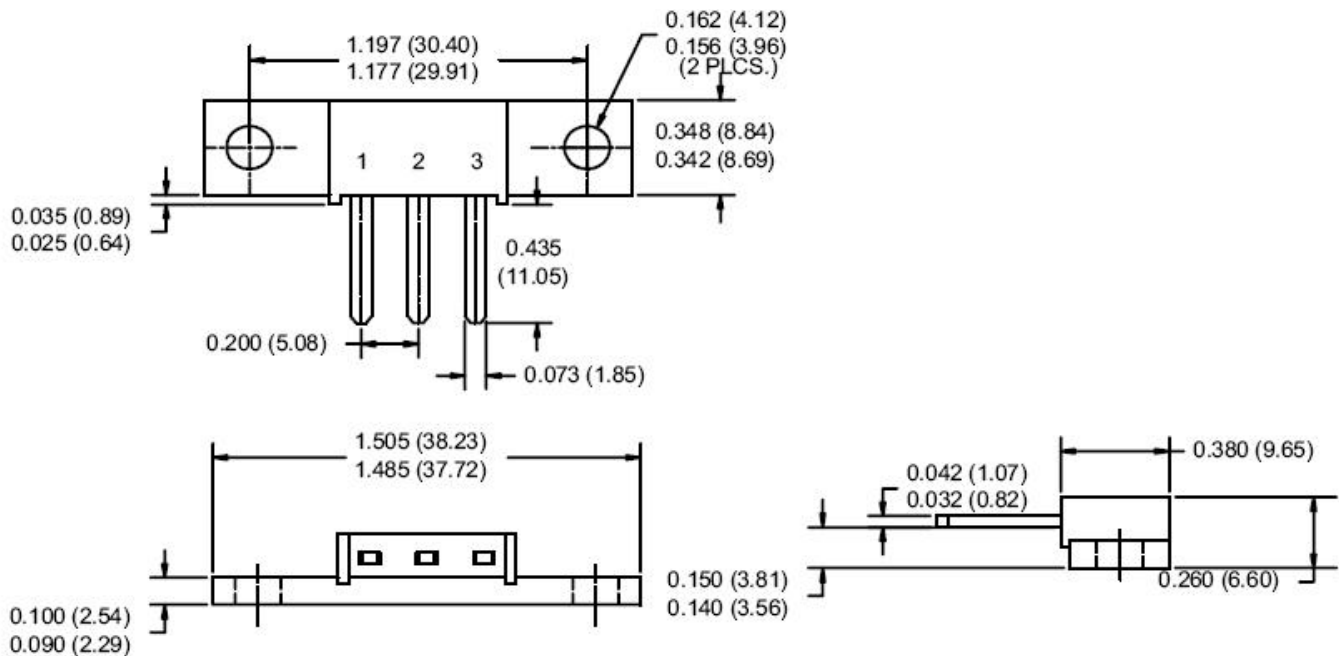
1st row SS YYWWL
2nd row 83CNQ080/SL/SM
3rd row 1 2 3 (pin)
SS = SS
YY = Year
WW = Week

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

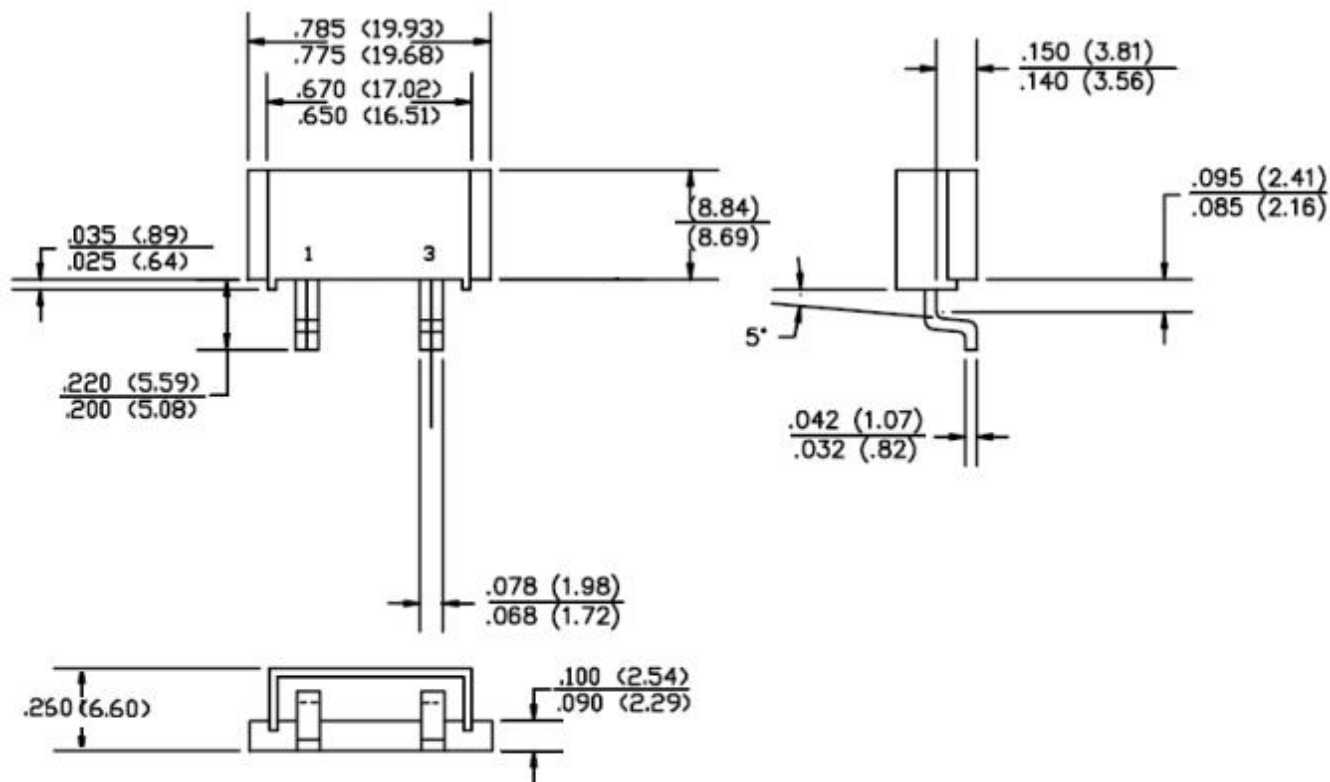
Ordering Information

| Device | Package | Terminals finish | Baseplate finish | Shipping |
|--------------|---------|-------------------------------------|------------------|--------------|
| 83CNQ080 | PRM2 | Nickel plated | Nickel plated | 48pcs / box |
| 83CNQ080S2 | PRM2 | Pure Sn dipped (dipped heigh 6-8mm) | Nickel plated | 48pcs / box |
| 83CNQ080SL | PRM2-SL | Pure Sn plated | Pure Sn plated | 100pcs / box |
| 83CNQ080SM | PRM2-SM | Nickel plated | Nickel plated | 48pcs / box |
| 83CNQ080SMS2 | PRM2-SM | Pure Sn dipped (dipped heigh 6-8mm) | Nickel plated | 48pcs / box |
| 83CNQ100 | PRM2 | Nickel plated | Nickel plated | 48pcs / box |
| 83CNQ100S2 | PRM2 | Pure Sn dipped (dipped heigh 6-8mm) | Nickel plated | 48pcs / box |
| 83CNQ100SL | PRM2-SL | Pure Sn plated | Pure Sn plated | 100pcs / box |
| 83CNQ100SM | PRM2-SM | Nickel plated | Nickel plated | 48pcs / box |
| 83CNQ100SMS2 | PRM2-SM | Pure Sn dipped (dipped heigh 6-8mm) | Nickel plated | 48pcs / box |

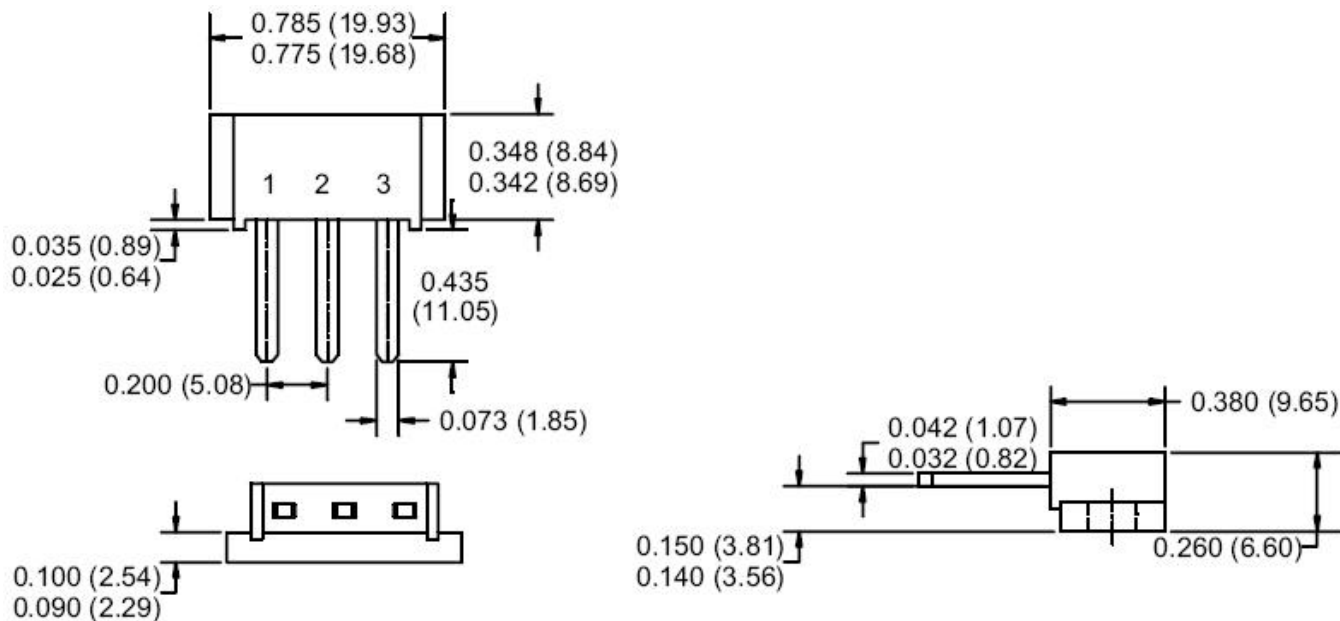
Mechanical Dimensions PRM2 (Inches/Millimeters)



Mechanical Dimensions PRM2-SL (Inches/Millimeters)



Mechanical Dimensions PRM2-SM (Inches/Millimeters)





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