

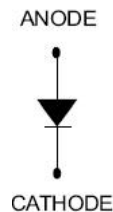
## 248NQ100-2 SCHOTTKY RECTIFIER



### Features

- 175°C T<sub>J</sub> operation
- Unique high power, Half-Pak module
- Replaces three parallel DO-5' S
- Easier to mount and lower profile than DO-5' S
- 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

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

### Maximum Ratings:

| Characteristics  | Symbol   | Condition  | Max.   | Units |
|--|--|--|--|-------|
| Peak Repetitive Reverse Voltage<br>Working Peak Reverse Voltage<br>DC Blocking Voltage | V <sub>RRM</sub><br>V <sub>RWM</sub><br>V <sub>R</sub> | -  | 100  | V     |
| Average Forward Current  | I <sub>F(AV)</sub>                                     | 50% duty cycle @T <sub>C</sub> =120°C, rectangular wave form   | 240  | A     |
| Maximum Peak One Cycle Non-Repetitive Surge Current                                    | I <sub>FSM</sub>                                       | 8.3 ms, half Sine pulse  | 3960   | A     |
|  |  | 5 us sine or 3 us rect. pulse  | Following and rated load condition and with rated V <sub>RRM</sub> applied | 25500 |
|  |  | 10 ms sine or 6 ms rect. pulse   |  | 3300  |
| Non-Repetitive Avalanche Energy  | E <sub>AS</sub>  | T <sub>J</sub> =25°C, I <sub>AS</sub> =1A, L=30 mH   | 15   | mJ    |
| Repetitive Avalanche Current   | 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 | 1  | A     |

**Electrical Characteristics:**

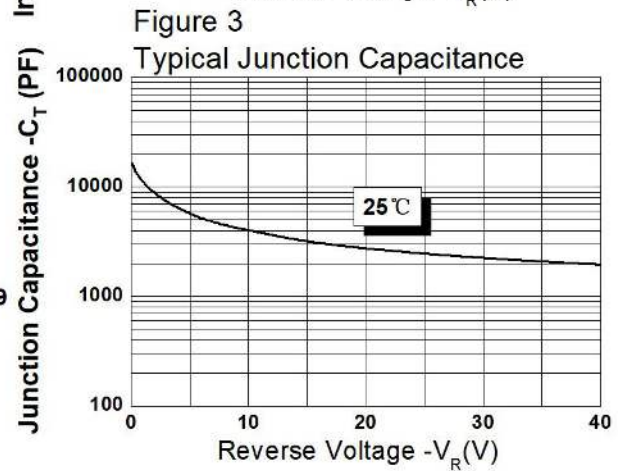
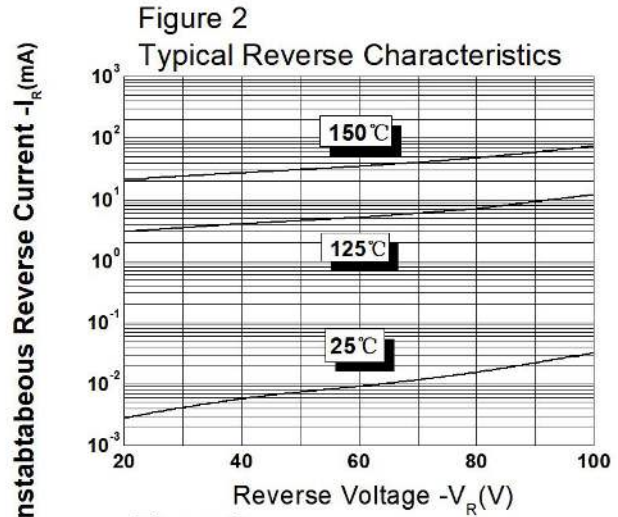
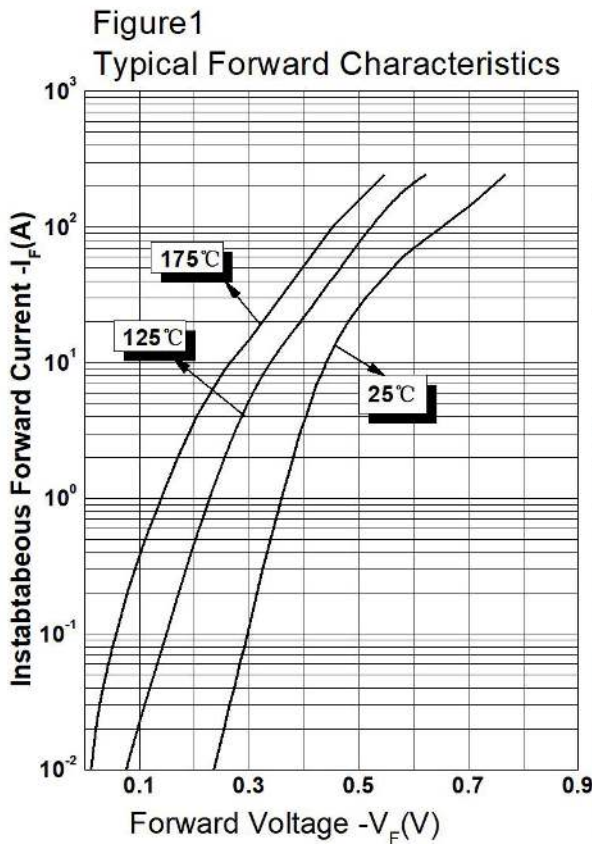
| Characteristics        | Symbol          | Condition   | Typ.  | Max.   | Units |
|------------------------|-----------------|---|-------|--------|-------|
| Forward Voltage Drop*  | V <sub>F1</sub> | @ 240A, Pulse, T <sub>J</sub> = 25 °C                                   | 0.77  | 0.95   | V     |
|                        | V <sub>F2</sub> | @ 240A, Pulse, T <sub>J</sub> = 125 °C                                  | 0.62  | 0.72   | V     |
| Reverse Current*       | I <sub>R1</sub> | @V <sub>R</sub> = rated V <sub>R</sub> T <sub>J</sub> = 25 °C           | 0.032 | 6      | mA    |
|                        | I <sub>R2</sub> | @V <sub>R</sub> = rated V <sub>R</sub> T <sub>J</sub> = 125 °C          | 12    | 80     | mA    |
| Junction Capacitance   | C <sub>T</sub>  | @V <sub>R</sub> = 5V, T <sub>C</sub> = 25 °C<br>f <sub>SIG</sub> = 1MHz | 5277  | 5500   | 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 +175        |                    | °C    |
| Storage Temperature                              | T <sub>stg</sub> | -                                       | -55 to +175        |                    | °C    |
| Typical Thermal Resistance<br>Junction to Case   | R <sub>θJC</sub> | DC operation                            | 0.19               |                    | °C/W  |
| Typical Thermal Resistance, case<br>to Heat Sink | R <sub>θcs</sub> | Mounting surface, smooth and<br>greased | 0.05               |                    | °C/W  |
| Mounting Torque                                  | T <sub>M</sub>   | Non-lubricated threads                  | Mounting<br>Torque | 23(min)<br>29(max) | Kg-cm |
|  |                  |   | Terminal<br>Torque | 35(min)<br>46(max) |       |
| Approximate Weight                               | wt               | -                                       | 25.6               |                    | g     |
| Case Style                                       | PRM1-1           |   |                    |                    |       |

**Ratings and Characteristics Curves**



**Ordering Information**

| Device     | Package         | Shipping   |
|------------|-----------------|------------|
| 248NQ100-2 | PRM1-1(Pb-Free) | 27pcs/ box |

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

**Marking Diagram**

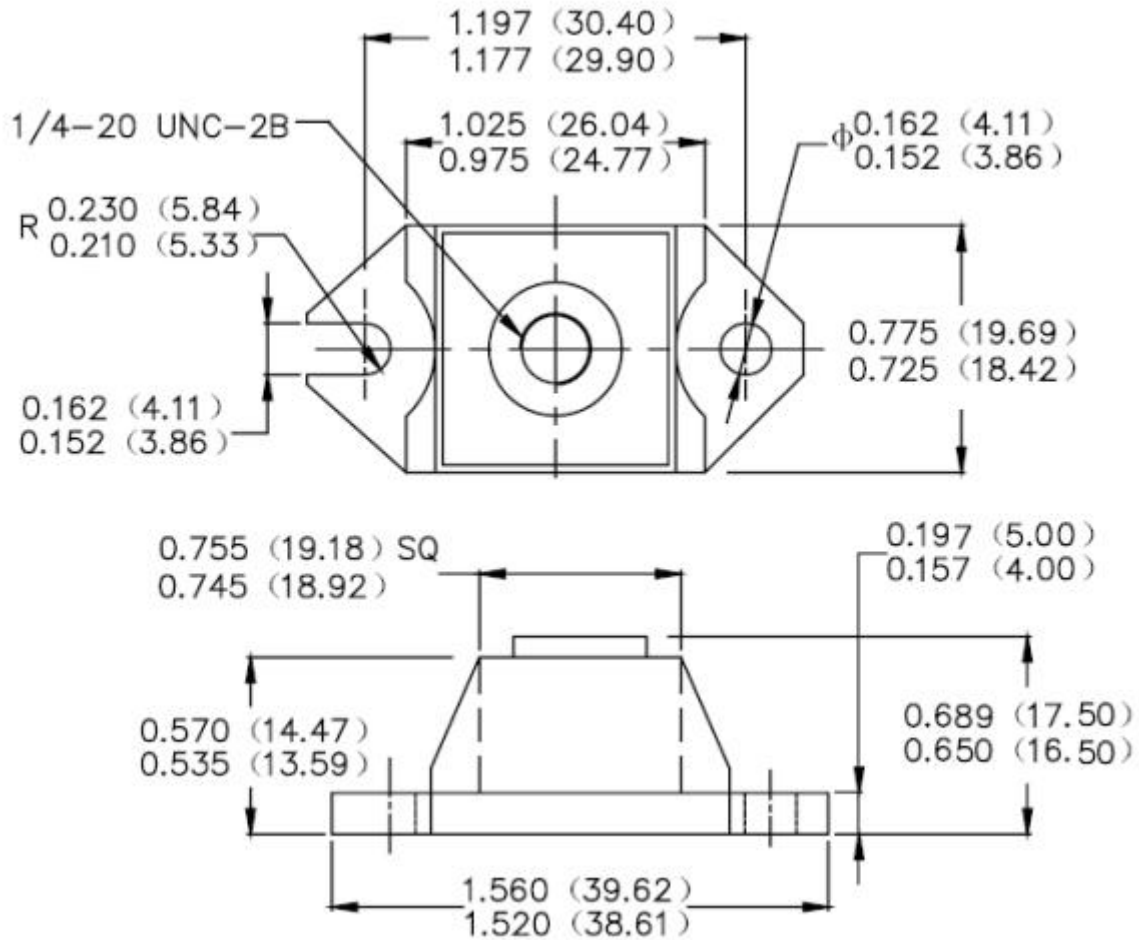


Where XXXX is YYWW

1st row SS YYWW  
2nd row 248NQ100-2  
SS = SS  
YY = Year  
WW = Week

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

**Mechanical Dimensions PRM1-1 (Inches/Millimeters)**



**Technical Data**  
**Data Sheet N2448, Rev.-**



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