

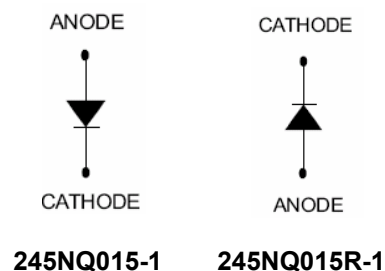
## 245NQ015/R-1 SCHOTTKY RECTIFIER

### Applications:

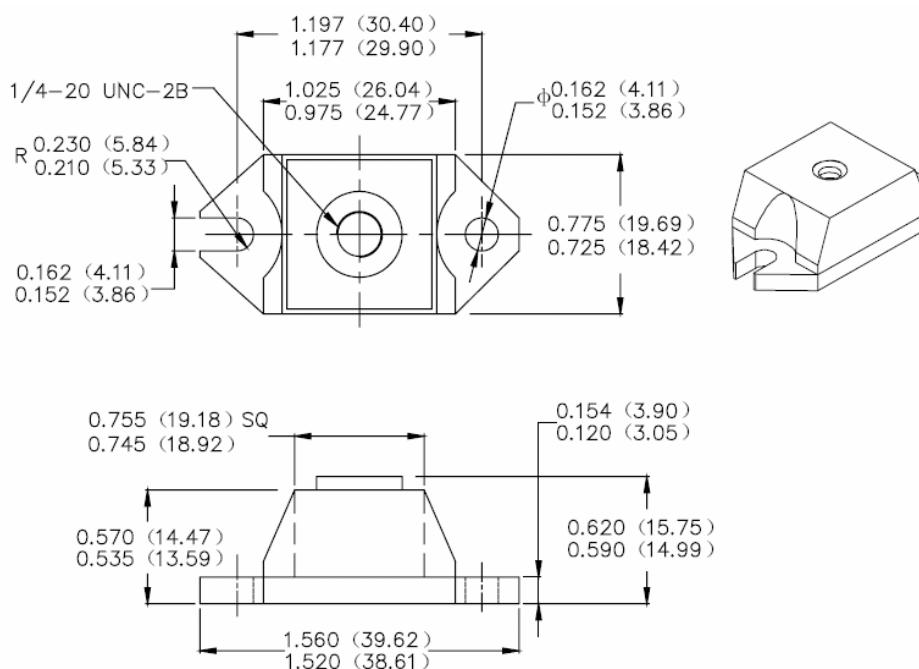
- Parallel switching power supply • Free-Wheeling diodes • Reverse battery protection
- Redundant power subsystems

### Features:

- 125°C T<sub>J</sub> operation (V<sub>R</sub> < 5V)
- Unique high power, Half-Pak module
- Optimized for OR-ing applications
- High purity, high temperature epoxy encapsulation for enhanced mechanical strength and moisture resistance
- Ultra 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



### Mechanical Dimensions: In Inches / mm



### PRM1-1 (HALF PAK Module)

#### MARKING, MOLDING RESIN

Marking for 245NQ015/R-1, 1<sup>st</sup> row SS YYWWL, 2<sup>nd</sup> row 245NQ015-1/245NQ015R-1

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

Technical Data  
Data Sheet N1207, Rev. -

**Green Products**

### Maximum Ratings:

| Characteristics                                            | Symbol      | Condition                                                                                                           | Max.                  | Units |
|------------------------------------------------------------|-------------|---------------------------------------------------------------------------------------------------------------------|-----------------------|-------|
| Peak Inverse Voltage                                       | $V_{RWM}$   | -                                                                                                                   | 15(DC)<br>25(Working) | V     |
| Max. Average Forward Current                               | $I_{F(AV)}$ | 50% duty cycle @ $T_C = 70^\circ\text{C}$ ,<br>rectangular wave form                                                | 240                   | A     |
| Max. Peak One Cycle Non-Repetitive Surge Current (per leg) | $I_{FSM}$   | 8.3 ms, half Sine pulse                                                                                             | 3600                  | A     |
| Non-Repetitive Avalanche Energy                            | $E_{AS}$    | $T_J = 25^\circ\text{C}$ , $I_{AS} = 2\text{A}$ , $L = 4.5\text{mH}$                                                | 9                     | mJ    |
| Repetitive Avalanche Current                               | $I_{AR}$    | Current decaying linearly to zero in 1 $\mu\text{sec}$ Frequency limited by $T_J$ max. $V_A = 3 \times V_R$ typical | 2                     | A     |

### Electrical Characteristics:

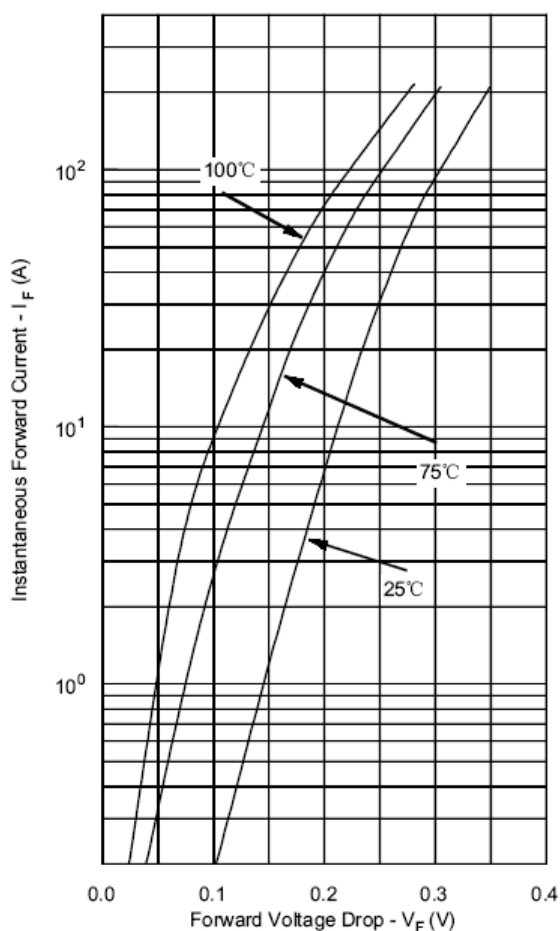
| Characteristics                     | Symbol   | Condition                                                                            | Max.         | Units            |
|-------------------------------------|----------|--------------------------------------------------------------------------------------|--------------|------------------|
| Max. Forward Voltage Drop*          | $V_{F1}$ | @ 240A, Pulse, $T_J = 25^\circ\text{C}$<br>@ 480A, Pulse, $T_J = 25^\circ\text{C}$   | 0.40<br>0.51 | V                |
|                                     | $V_{F2}$ | @ 240A, Pulse, $T_J = 125^\circ\text{C}$<br>@ 480A, Pulse, $T_J = 125^\circ\text{C}$ | 0.34<br>0.44 | V                |
| Max. Reverse Current (per leg) *    | $I_{R1}$ | @ $V_R = \text{rated } V_R$ , $T_J = 25^\circ\text{C}$                               | 80           | mA               |
|                                     | $I_{R2}$ | @ $V_R = \text{rated } V_R$ , $T_J = 100^\circ\text{C}$                              | 4000         | mA               |
|                                     | $I_{R3}$ | @ $V_R = 15\text{V}$ , $T_J = 100^\circ\text{C}$                                     | 3560         | mA               |
|                                     | $I_{R4}$ | @ $V_R = 5\text{V}$ , $T_J = 100^\circ\text{C}$                                      | 2160         | mA               |
| Max. Junction Capacitance (per leg) | $C_T$    | @ $V_R = 5\text{V}$ , $T_C = 25^\circ\text{C}$<br>$f_{\text{SIG}} = 1\text{MHz}$     | 15800        | pF               |
| Typical Series Inductance (per leg) | $L_S$    | Measured lead to lead 5 mm from package body                                         | 5.0          | nH               |
| Max. Voltage Rate of Change         | $dv/dt$  | -                                                                                    | 10,000       | V/ $\mu\text{s}$ |

- Pulse Width < 300 $\mu\text{s}$ , Duty Cycle < 2%

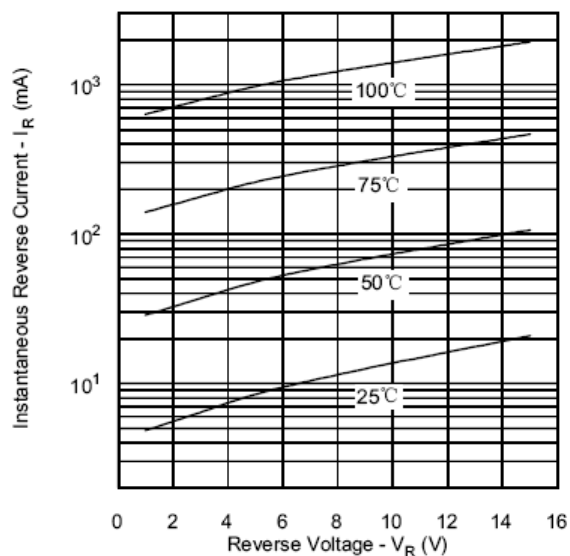
### Thermal-Mechanical Specifications:

| Characteristics                               | Symbol           | Condition                            | Specification   |                    | Units |
|-----------------------------------------------|------------------|--------------------------------------|-----------------|--------------------|-------|
| Max. Junction Temperature                     | T <sub>J</sub>   | -                                    | -55 to +125     |                    | °C    |
| Max. Storage Temperature                      | T <sub>stg</sub> | -                                    | -55 to +150     |                    | °C    |
| Maximum Thermal Resistance Junction to Case   | R <sub>θJC</sub> | DC operation                         | 0.20            |                    | °C/W  |
| Typical Thermal Resistance, case to Heat Sink | R <sub>θcs</sub> | Mounting surface, smooth and greased | 0.15            |                    | °C/W  |
| Mounting Torque                               | T <sub>M</sub>   | Non-lubricated threads               | Mounting Torque | 23(min)<br>29(max) | Kg-cm |
|                                               |                  |                                      | Terminal Torque | 35(min)<br>46(max) |       |
| Approximate Weight                            | wt               | -                                    | 25.6            |                    | g     |
| Case Style                                    | PRM1-1           |                                      |                 |                    |       |

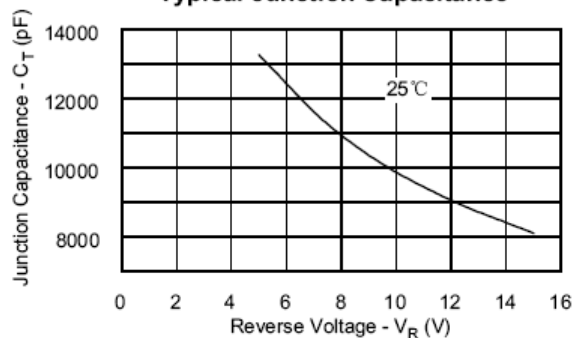
**Typical Forward Characteristics**



**Typical Reverse Characteristics**



**Typical Junction Capacitance**



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