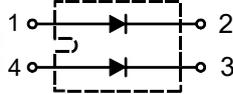
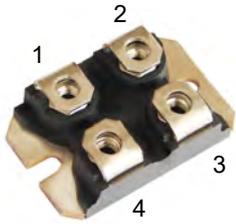
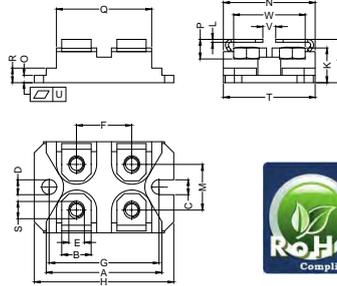


# MBR2X80-100

## High T<sub>jm</sub> Low IRRM Schottky Barrier Diodes



Dimensions SOT -227(ISOTOP)



| Dim. | Millimeter |       | Dim. | Millimeter |       |
|------|------------|-------|------|------------|-------|
|      | Min.       | Max.  |      | Min.       | Max.  |
| A    | 31.30      | 31.65 | M    | 12.00      | 13.00 |
| B    | 7.80       | 8.40  | N    | 25.15      | 25.65 |
| C    | 4.00       | 4.30  | O    | 1.95       | 2.15  |
| D    | ∅4.00      | ∅4.30 | P    | 5.60       | 6.60  |
| E    | 4.00       | 4.30  | Q    | 25.30      | 26.30 |
| F    | 14.90      | 15.20 | R    | 3.90       | 4.30  |
| G    | 30.10      | 30.30 | S    | 4.45       | 4.85  |
| H    | 38.00      | 38.50 | T    | 24.50      | 25.10 |
| J    | 12.10      | 12.90 | U    | 0.05       | 0.10  |
| K    | 9.00       | 9.60  | V    | 3.00       | 4.80  |
| L    | 0.75       | 0.85  | W    | 19.30      | 20.50 |

|             | V <sub>RSM</sub><br>V | V <sub>RSM</sub><br>V |
|-------------|-----------------------|-----------------------|
| MBR2X80-100 | 100                   | 100                   |
| MBR2X80-150 | 150                   | 150                   |
| MBR2X80-200 | 200                   | 200                   |

| Symbol                | Test Conditions  | Maximum Ratings | Unit      |
|-----------------------|--|-----------------|-----------|
| I <sub>FRMS</sub>     |  | 100             |           |
| I <sub>FAVM</sub>     | T <sub>C</sub> =75°C; rectangular, d=0.5                             | 80              | A         |
| I <sub>FAVM</sub>     | T <sub>C</sub> =75°C; rectangular, d=0.5; per device                 | 160             |           |
| I <sub>FSM</sub>      | T <sub>VJ</sub> =45°C; t <sub>p</sub> =10ms (50Hz), sine             | 900             | A         |
| E <sub>AS</sub>       | I <sub>AS</sub> =20A; L=180uH; T <sub>VJ</sub> =25°C; non-repetitive | 57              | mJ        |
| I <sub>AR</sub>       | V <sub>A</sub> =1.5·V <sub>RRM</sub> typ.; f=10kHz; repetitive       | 2               | A         |
| (dv/dt) <sub>cr</sub> |  | 1000            | V/us      |
| T <sub>VJ</sub>       |  | -40...+150      |           |
| T <sub>VJM</sub>      |  | 150             | °C        |
| T <sub>stg</sub>      |  | -40...+150      |           |
| P <sub>tot</sub>      | T <sub>C</sub> =25°C   | 150             | W         |
| V <sub>ISOL</sub>     | 50/60Hz, RMS; I <sub>ISOL</sub> ≤1mA                                 | 2500            | V~        |
| M <sub>d</sub>        | mounting torque (M4); terminal connection torque (M4)                | 1.1-1.5/9-13    | Nm/lb.in. |
| Weight                | typical  | 30              | g         |

| Symbol                                 | Test Conditions   | Characteristic Values (max.) |                      |                      |                      | Unit |
|--|---|------------------------------|----------------------|----------------------|----------------------|------|
|  |   | typ.                         | 100V                 | 150V                 | 200V                 |      |
| I <sub>R</sub>                         | T <sub>VJ</sub> =25°C; V <sub>R</sub> =V <sub>RRM</sub><br>T <sub>VJ</sub> =100°C; V <sub>R</sub> =V <sub>RRM</sub>                       |                              | 0.1<br>50            | 0.1<br>50            | 0.1<br>50            | mA   |
| V <sub>F</sub>                         | I <sub>F</sub> =80A; T <sub>VJ</sub> =125°C<br>I <sub>F</sub> =80A; T <sub>VJ</sub> =25°C<br>I <sub>F</sub> =160A; T <sub>VJ</sub> =125°C |                              | 0.70<br>0.80<br>0.85 | 0.75<br>0.85<br>0.90 | 0.80<br>0.90<br>0.95 | V    |
| R <sub>thJC</sub><br>R <sub>thCH</sub> |   | 0.1                          | 0.8                  |                      | K/W                  |      |

### FEATURES

- \* International standard package SOT-227
- \* Isolation voltage 2500 V~
- \* 2 independent Schottky diodes in 1 package
- \* Very low V<sub>F</sub>
- \* Extremely low switching losses
- \* Low IRRM-values
- \* RoHS compliant

### APPLICATIONS

- \* Rectifiers in switch mode power supplies (SMPS)
- \* Free wheeling diode in low voltage converters

### ADVANTAGES

- \* High reliability circuit operation
- \* Low voltage peaks for reduced protection circuits
- \* Low noise switching
- \* Low losses

# MBR2X80-XX

## High $T_{jm}$ Low IRRM Schottky Barrier Diodes

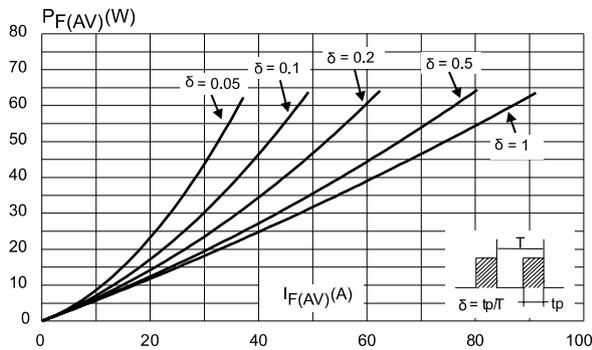


Figure 1: Conduction losses versus average forward current (per diode)

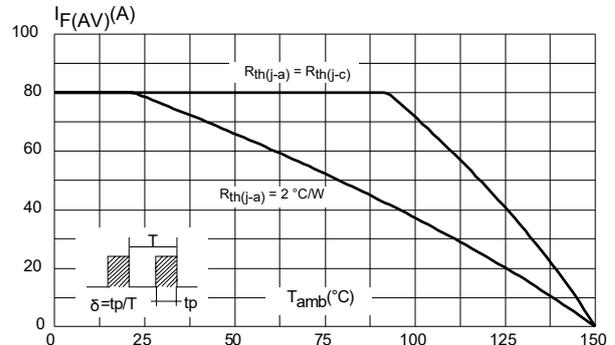


Figure 2: Forward voltage drop versus forward current ( $\delta = 0.5$ , per diode)

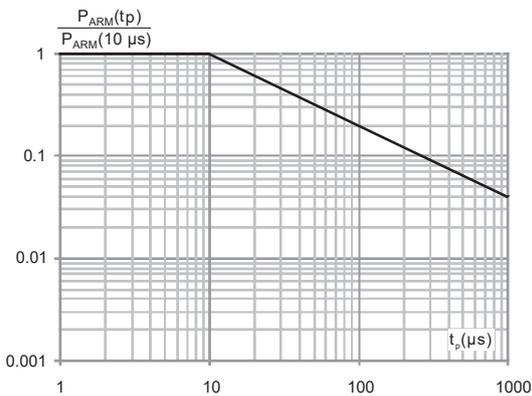


Figure 3: Normalized avalanche power derating versus pulse duration

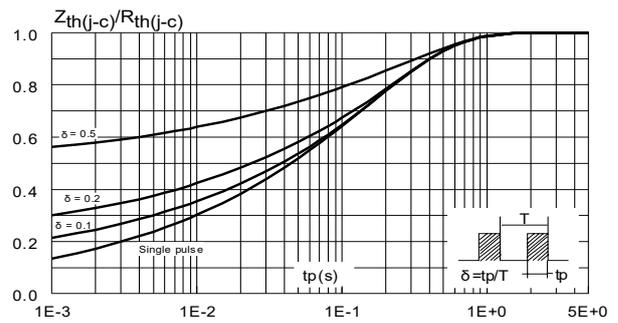


Figure 4: Relative variation of thermal impedance junction versus pulse duration (per diode)

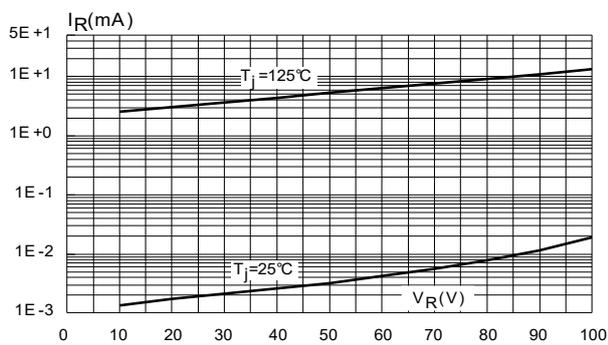


Figure 5: Reverse leakage current versus reverse voltage applied (typical values, per diode)

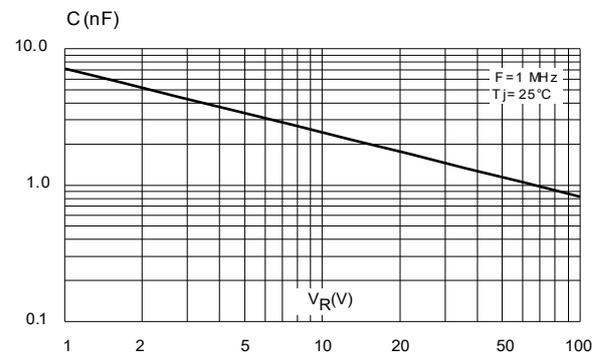


Figure 6: Junction capacitance versus reverse voltage applied (typical values, per diode)