



# MBR18AFC ~ MBR120AFC Series

## Surface Mount Schottky Barrier Rectifier

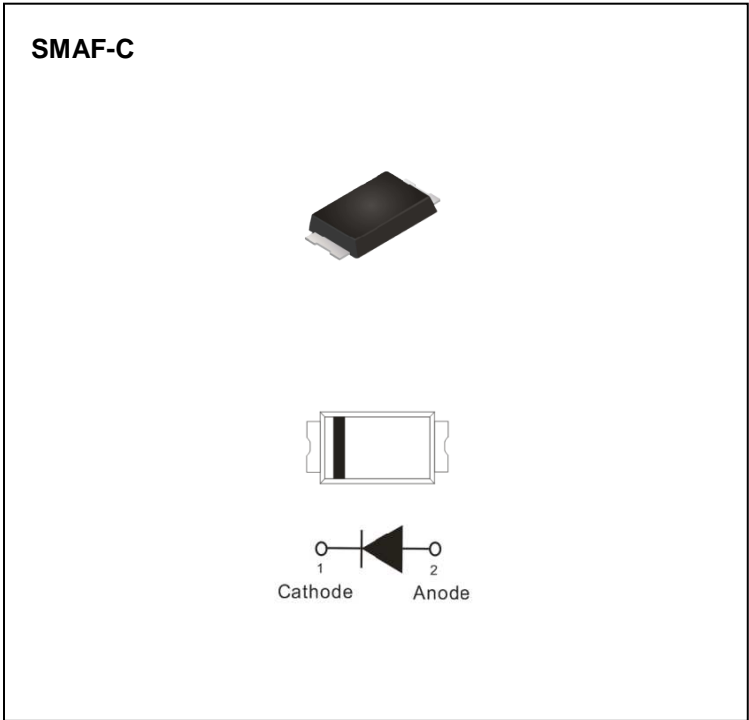
|                |                 |                |            |
|----------------|-----------------|----------------|------------|
| <b>Voltage</b> | <b>80~200 V</b> | <b>Current</b> | <b>1 A</b> |
|----------------|-----------------|----------------|------------|

### Features

- Low power loss, high efficiency
- High surge current capability
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC 61249 standard

### Mechanical Data

- Case : Molded plastic, SMAF-C
- Terminals : Solderable per MIL-STD-750, Method 2026
- Approx. Weight : 0.0012 ounces, 0.034 grams



### Maximum Ratings and Thermal Characteristics (T<sub>A</sub> = 25°C unless otherwise noted)

| PARAMETER                                                                            | SYMBOL                    | MBR18AFC    | MBR19AFC | MBR110AFC | MBR115AFC | MBR120AFC | UNIT |
|--------------------------------------------------------------------------------------|---------------------------|-------------|----------|-----------|-----------|-----------|------|
| Maximum Recurrent Peak Reverse Voltage                                               | V <sub>RRM</sub>          | 80          | 90       | 100       | 150       | 200       | V    |
| Maximum RMS Voltage                                                                  | V <sub>RMS</sub>          | 56          | 63       | 70        | 105       | 140       | V    |
| Maximum DC Blocking Voltage                                                          | V <sub>R</sub>            | 80          | 90       | 100       | 150       | 200       | V    |
| Maximum Average Forward Rectified Current                                            | I <sub>F(AV)</sub>        | 1           |          |           |           |           | A    |
| Peak Forward Surge Current : 8.3 ms Single Half Sine-Wave Superimposed On Rated Load | I <sub>FSM</sub>          | 30          |          |           |           |           | A    |
| Instantaneous Forward Voltage at 1A                                                  | V <sub>F</sub>            | 0.8         |          |           | 0.9       |           | V    |
| Reverse Current <sup>(Note 3)</sup>                                                  | I <sub>R</sub>            | 0.05        |          |           |           |           | mA   |
| Typical Junction Capacitance Measured at 1 MHz And Applied V <sub>R</sub> = 4V       | C <sub>J</sub>            | 50          |          |           | 40        | 30        | pF   |
| Typical Thermal Resistance                                                           | (Note 1) R <sub>θJL</sub> | 19          |          |           |           |           | °C/W |
|                                                                                      | (Note 2) R <sub>θJA</sub> | 150         |          |           |           |           |      |
| Operating Junction Temperature Range                                                 | T <sub>J</sub>            | -55 to +150 |          |           |           |           | °C   |
| Storage Temperature Range                                                            | T <sub>STG</sub>          | -55 to +150 |          |           |           |           | °C   |

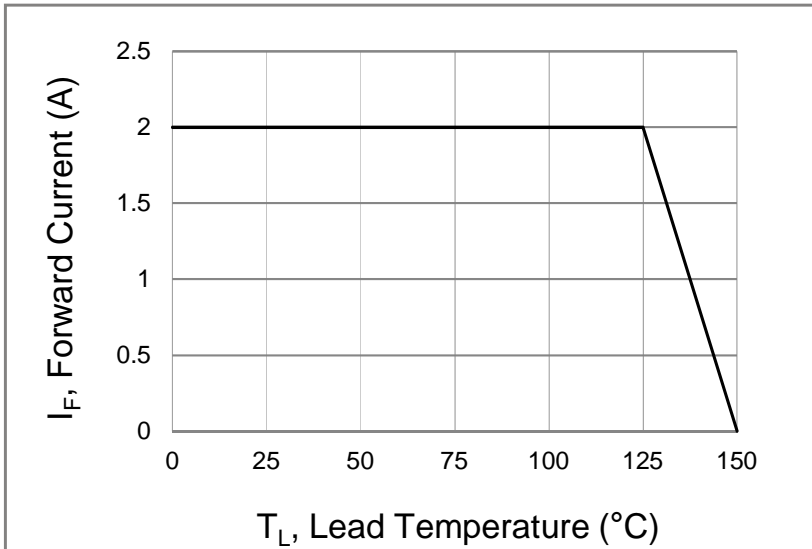
**NOTES:**

1. Mounted on a FR4 PCB, single-sided copper, with 48cm<sup>2</sup> copper pad area.
2. Mounted on a FR4 PCB, single-sided copper, standard footprint
3. Short duration pulse test used to minimize self-heating effect

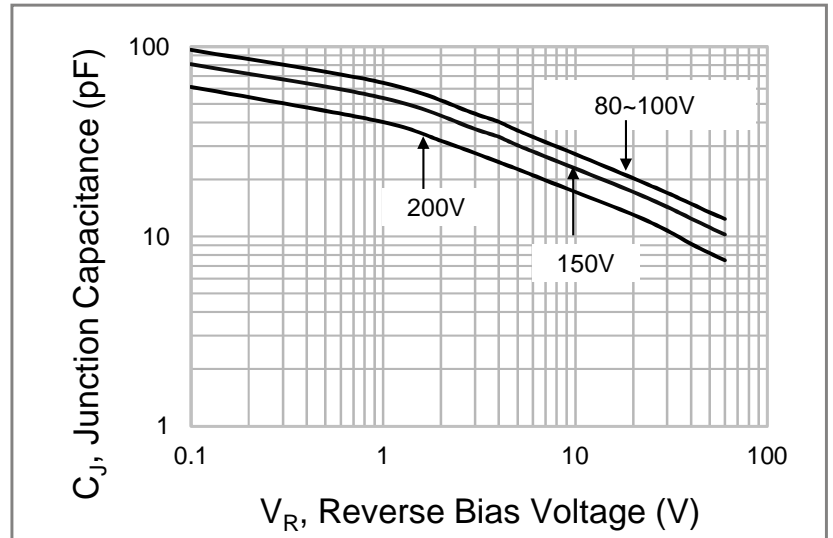


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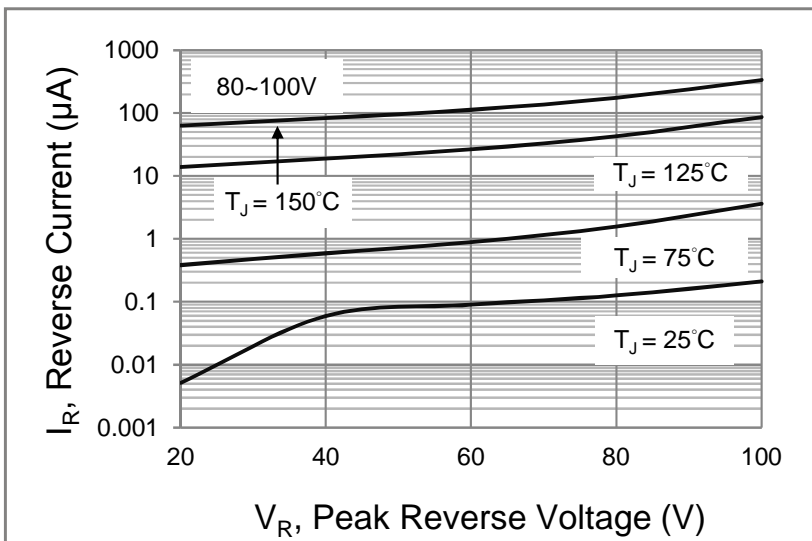
## TYPICAL CHARACTERISTIC CURVES



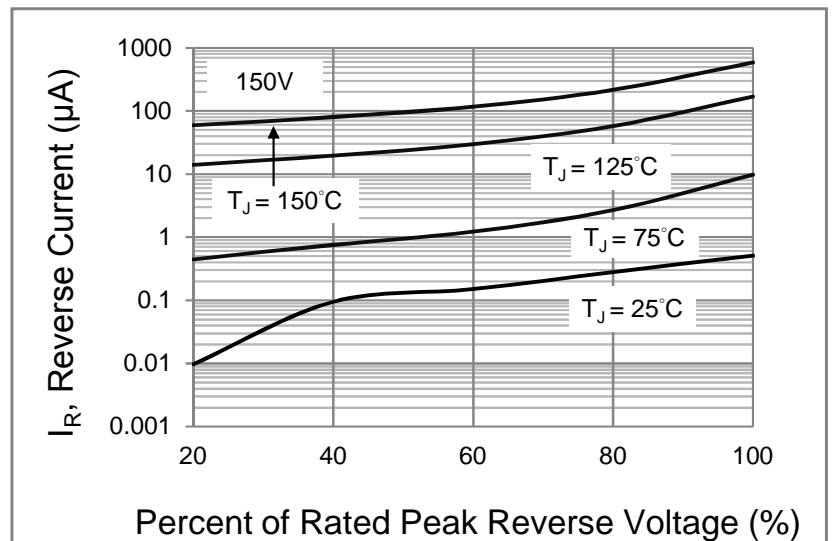
**Fig.1 Forward Current Derating Curve**



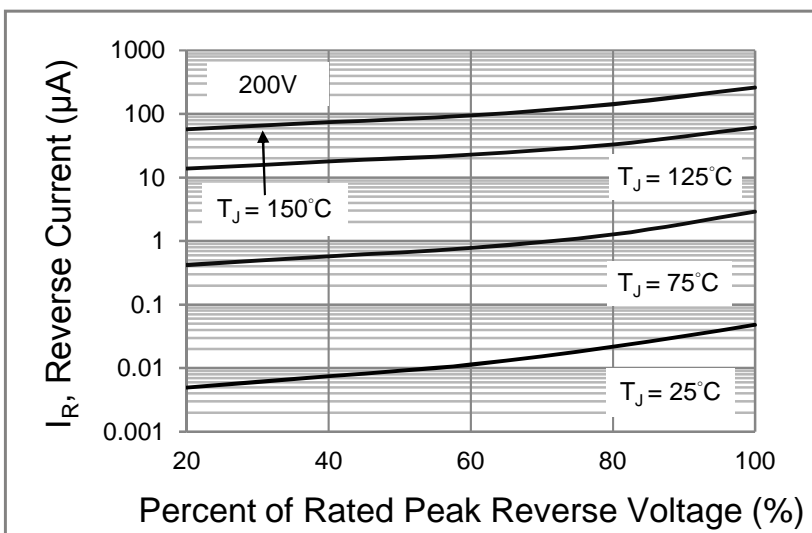
**Fig.2 Typical Junction Capacitance**



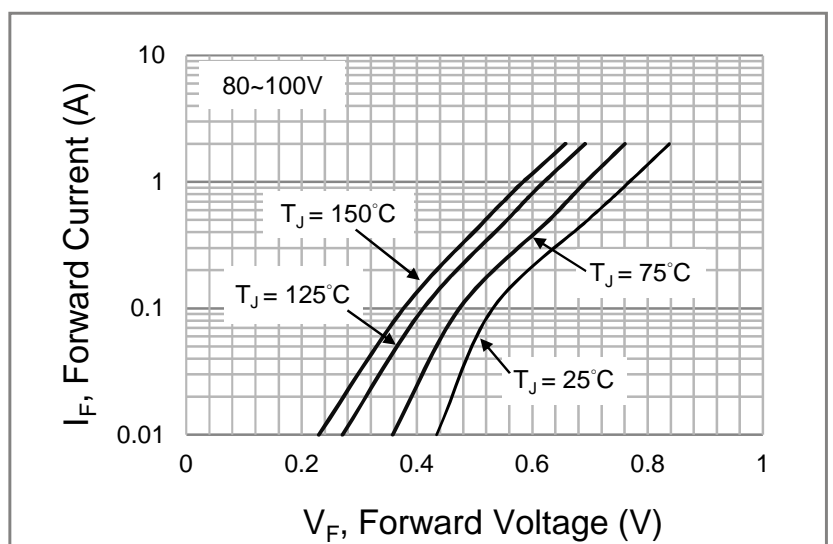
**Fig.3 Typical Reverse Characteristics**



**Fig.4 Typical Reverse Characteristics**



**Fig.5 Typical Reverse Characteristics**



**Fig.6 Typical Forward Characteristics**



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### TYPICAL CHARACTERISTIC CURVES

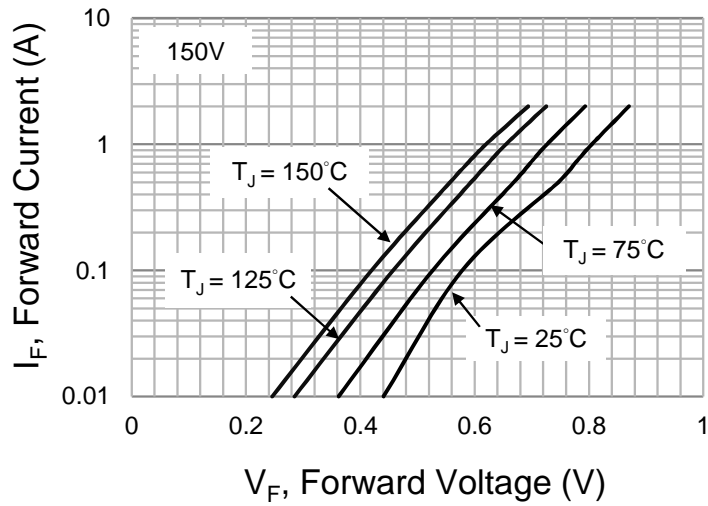


Fig.7 Typical Forward Characteristics

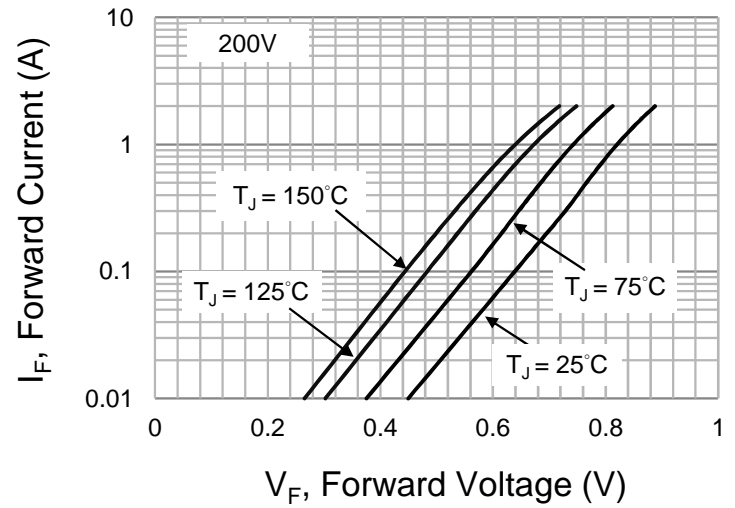


Fig.8 Typical Forward Characteristics

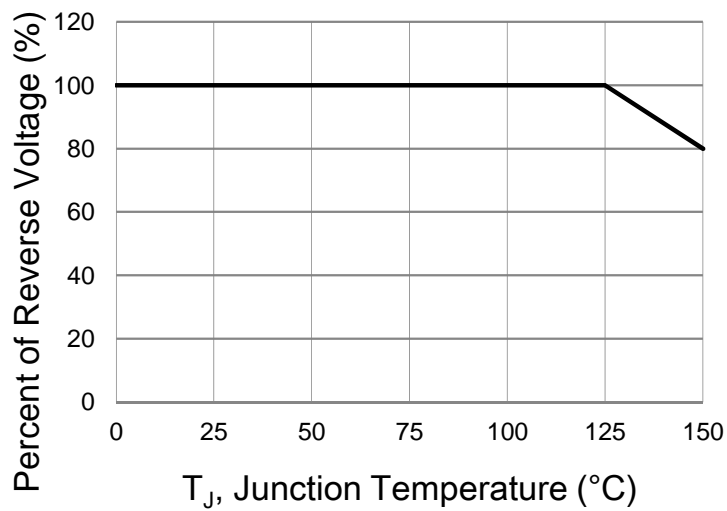


Fig.9 Operating Temperature Derating Curve

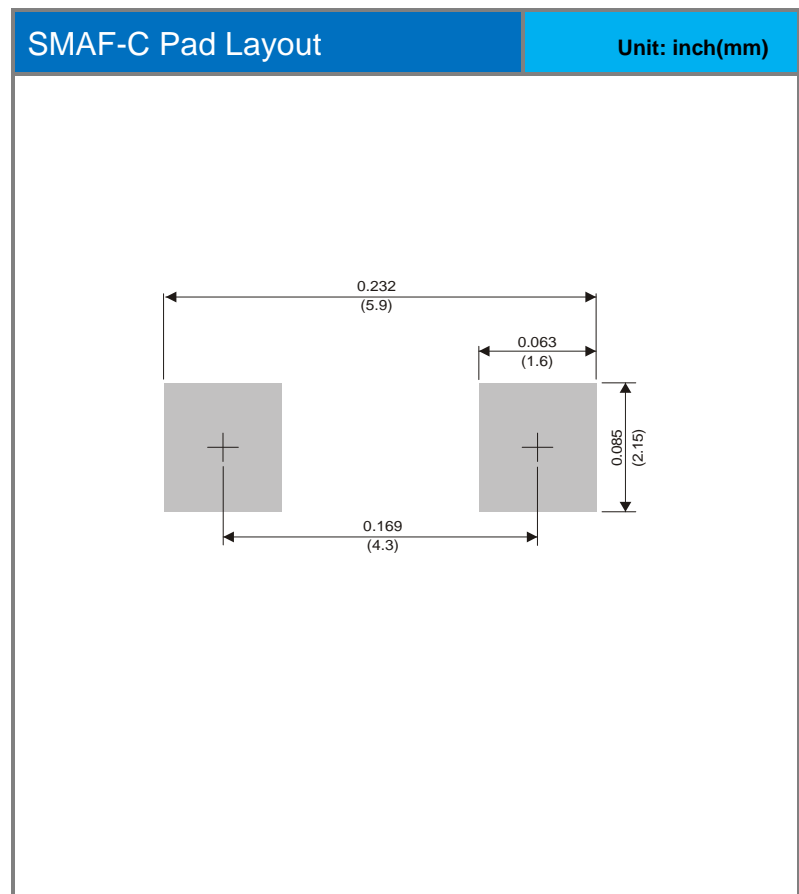
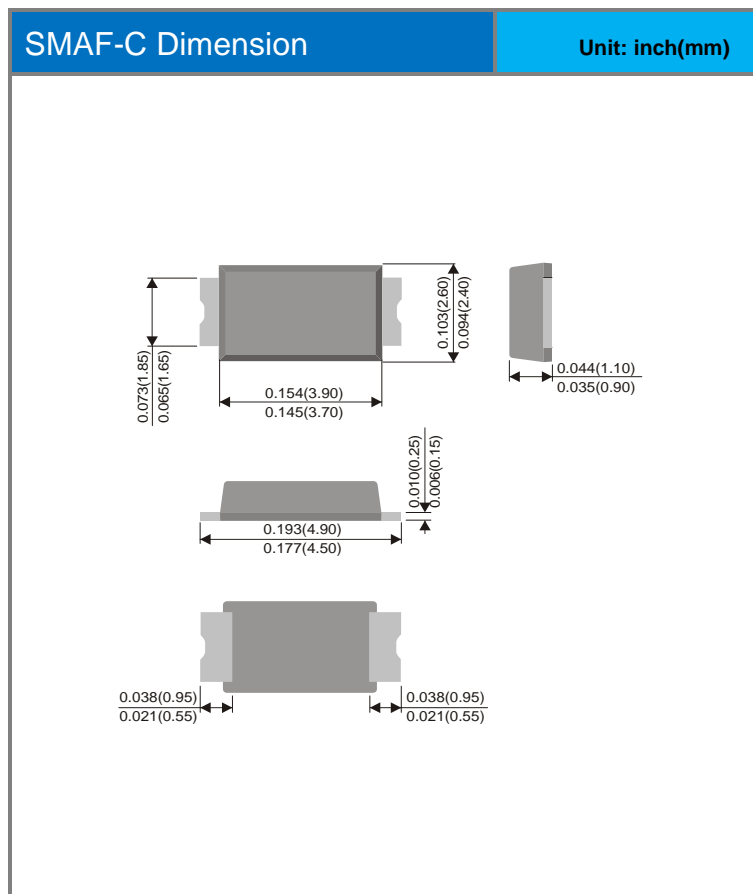


## MBR18AFC ~ MBR120AFC Series

### Part No. Packing Code Version

| Part No. Packing Code | Package Type | Packing Type     | Marking | Version      |
|-----------------------|--------------|------------------|---------|--------------|
| MBR18AFC_R1_00001     | SMAF-C       | 3K pcs / 7" reel | MBR18   | Halogen free |
| MBR19AFC_R1_00001     | SMAF-C       | 3K pcs / 7" reel | MBR19   | Halogen free |
| MBR110AFC_R1_00001    | SMAF-C       | 3K pcs / 7" reel | MBR110  | Halogen free |
| MBR115AFC_R1_00001    | SMAF-C       | 3K pcs / 7" reel | MBR115  | Halogen free |
| MBR120AFC_R1_00001    | SMAF-C       | 3K pcs / 7" reel | MBR120  | Halogen free |

### Packaging Information & Mounting Pad Layout





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