

## MB14~MB120

### SURFACE MOUNT SCHOTTKY BARRIER RECTIFIER

**VOLTAGE** 40 to 200 Volt **CURRENT** 1 Ampere

**SMB / DO-214AA**

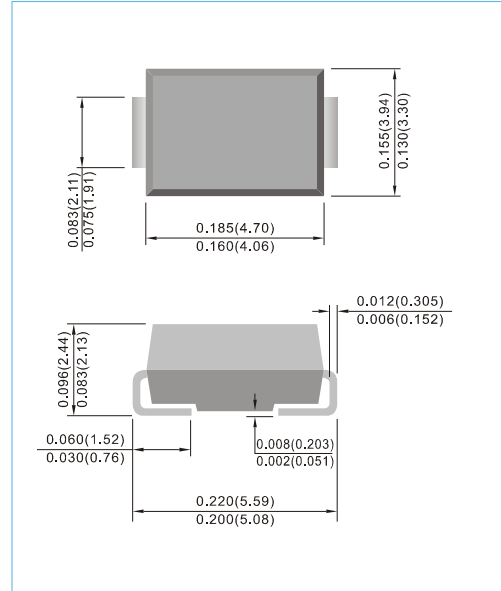
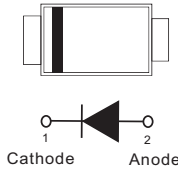
Unit : inch(mm)

#### FEATURES

- Plastic package has Underwriters Laboratory Flammability Classification 94V-O
- For surface mounted applications in order to optimize board space
- Low power loss,high efficiency
- High surge capacity
- High current capacity ,low  $V_F$
- For use in low voltage high frequency inverters, free wheeling, and polarity protection applications.
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC 61249 standard

#### MECHANICAL DATA

- Case: JEDEC DO-214AA molded plastic
- Terminals:Solder plated, solderable per MIL-STD-750, Method 2026
- Polarity : Color band denotes cathode end
- Standard packaging: 12mm tape (EIA-481)
- Weight: 0.0032 ounces, 0.092 grams



### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified. Single phase, half wave, 60 Hz, resistive or inductive load.

| PARAMETER  | SYMBOL                               | MB14        | MB14A       | MB15 | MB16 | MB18     | MB19 | MB110 | MB115 | MB120  | UNITS |
|--|--------------------------------------|-------------|-------------|------|------|----------|------|-------|-------|--------|-------|
| Maximum Recurrent Peak Reverse Voltage   | V <sub>RRM</sub>                     | 40          | 45          | 50   | 60   | 80       | 90   | 100   | 150   | 200    | V     |
| Maximum RMS Voltage  | V <sub>RMS</sub>                     | 28          | 31.5        | 35   | 42   | 56       | 63   | 70    | 105   | 140    | V     |
| Maximum DC Blocking Voltage  | V <sub>DC</sub>                      | 40          | 45          | 50   | 60   | 80       | 90   | 100   | 150   | 200    | V     |
| Maximum Average Forward Current (See Figure 1)                                     | I <sub>F(AV)</sub>                   | 1           |             |      |      |          |      |       |       |        | A     |
| Peak Forward Surge Current :8.3ms single half sine-wave superimposed on rated load | I <sub>FSM</sub>                     | 30          |             |      |      |          |      |       |       |        | A     |
| Maximum Forward Voltage at 1A ( Note 1)  | V <sub>F</sub>                       | 0.7         |             | 0.74 |      | 0.8      |      |       | 0.9   |        | V     |
| Maximum DC Reverse Current at Rated DC Blocking Voltage<br>T <sub>J</sub> =25°C    | I <sub>R</sub>                       | 0.05        |             |      |      |          |      |       |       |        | mA    |
| Maximum DC Reverse Current at Rated DC Blocking Voltage<br>T <sub>J</sub> =100°C   | I <sub>R</sub>                       | 2           |             |      |      | 1        |      |       |       | mA     |       |
| Typical Thermal Resistance (Note 2)  | R <sub>θJL</sub><br>R <sub>θJA</sub> |             |             |      |      | 30<br>95 |      |       |       | °C / W |       |
| Operating Junction and Storage Temperature Range                                   | T <sub>J</sub> , T <sub>STG</sub>    | -55 to +150 | -65 to +175 |      |      |          |      |       |       | °C     |       |

#### NOTES :

- 1.Pulse Test with PW =300μsec, 1% Duty Cycle.
- 2.Mounted on P.C. Board with 5mm<sup>2</sup> (0.013mm thick) copper pad areas.

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### RATING AND CHARACTERISTIC CURVES

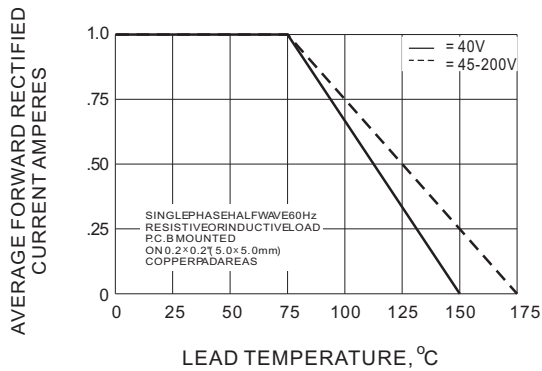


Fig.1 FORWARD CURRENT DERATING CURVE

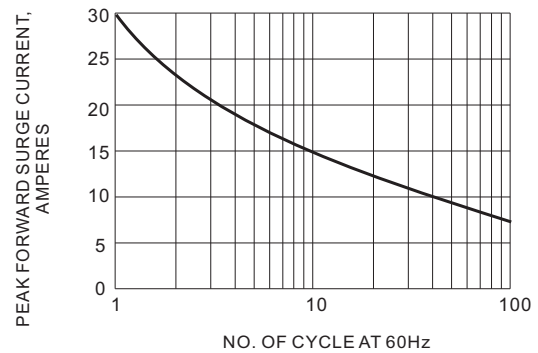


Fig.2 MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

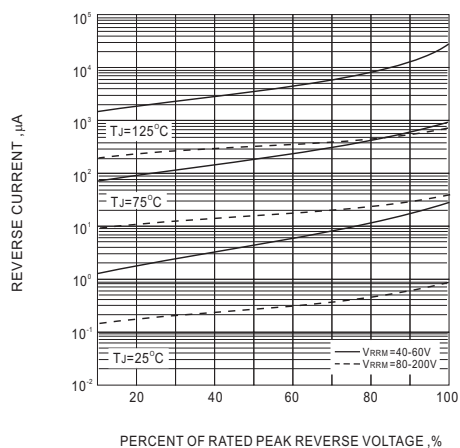


Fig.3 TYPICAL REVERSE CHARACTERISTIC

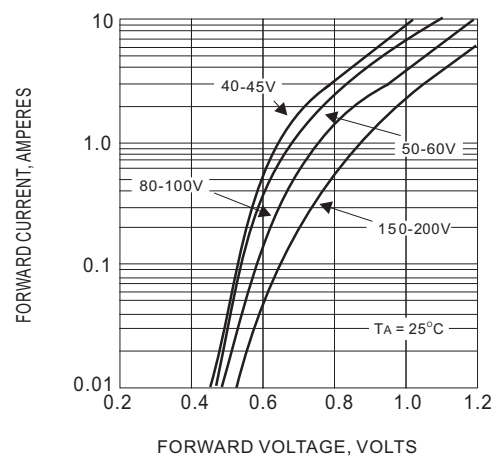


Fig.4 TYPICAL INSTANTANEOUS FORWARD CHARACTERISTIC

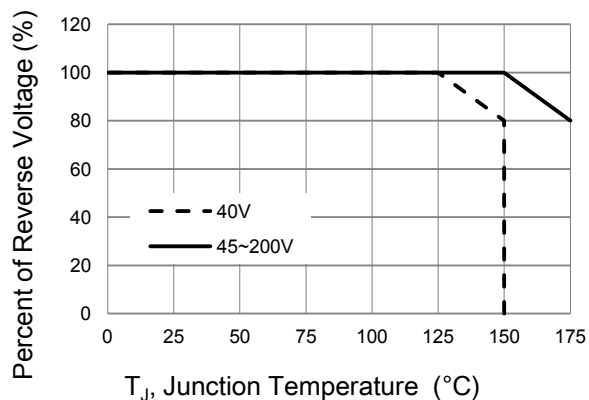


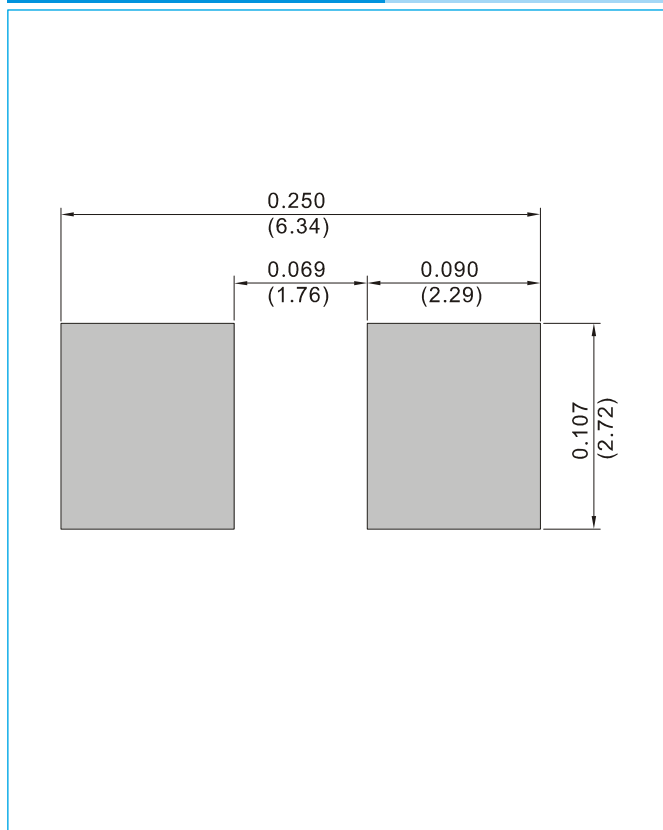
Fig.5 Operating Temperature Derating Curve

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### MOUNTING PAD LAYOUT

**SMB / DO-214AA**

Unit : inch(mm)



### ORDER INFORMATION

- Packing information  
T/R - 3K per 13" plastic Reel  
T/R - 0.8K per 7" plastic Reel

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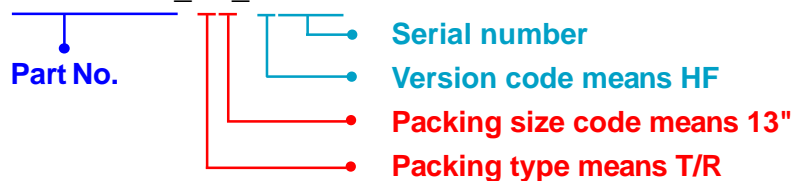
### Part No\_packing code\_Version

MB14\_R1\_00001

MB14\_R2\_00001

For example :

**RB500V-40\_R2\_00001**



| Packing Code <b>XX</b>               |                      |                                  |                      | Version Code <b>XXXXX</b> |                      |                                       |
|--------------------------------------|----------------------|----------------------------------|----------------------|---------------------------|----------------------|---------------------------------------|
| Packing type                         | 1 <sup>st</sup> Code | Packing size code                | 2 <sup>nd</sup> Code | HF or RoHS                | 1 <sup>st</sup> Code | 2 <sup>nd</sup> ~5 <sup>th</sup> Code |
| Tape and Ammunition Box (T/B)        | <b>A</b>             | N/A                              | <b>0</b>             | HF                        | <b>0</b>             | serial number                         |
| Tape and Reel (T/R)                  | <b>R</b>             | 7"                               | <b>1</b>             | RoHS                      | <b>1</b>             | serial number                         |
| Bulk Packing (B/P)                   | <b>B</b>             | 13"                              | <b>2</b>             |                           |                      |                                       |
| Tube Packing (T/P)                   | <b>T</b>             | 26mm                             | <b>X</b>             |                           |                      |                                       |
| Tape and Reel (Right Oriented) (TRR) | <b>S</b>             | 52mm                             | <b>Y</b>             |                           |                      |                                       |
| Tape and Reel (Left Oriented) (TRL)  | <b>L</b>             | PANASERT T/B CATHODE UP (PBCU)   | <b>U</b>             |                           |                      |                                       |
| FORMING                              | <b>F</b>             | PANASERT T/B CATHODE DOWN (PBCD) | <b>D</b>             |                           |                      |                                       |



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