

## Surface Mount Schottky Barrier Rectifier

Reverse Voltage - 20 to 200 V

Forward Current - 5 A

### FEATURES

- ◆Metal silicon junction, majority carrier conduction
- ◆For surface mounted applications
- ◆Low power loss, high efficiency
- ◆High forward surge current capability
- ◆For use in low voltage, high frequency inverters, free wheeling, and polarity protection applications
- ◆Lead free in comply with EU RoHS 2011/65/EU directives

### MECHANICAL DATA

- ◆Case: SMBF
- ◆Terminals: Solderable per MIL-STD-750, Method 2026
- ◆Approx. Weight: 57mg /0.002oz

**Absolute Maximum Ratings and Electrical characteristics**  
Ratings at 25 °C ambient temperature unless otherwise specified.Single phase, half wave, 60Hz resistive or inductive load,for capacitive load, derate by 20 %

### Pinning

| 1.Cathode                                                                           | 2.Anode |
|-------------------------------------------------------------------------------------|---------|
|  |         |
| SMBF                                                                                |         |

### Marking Code

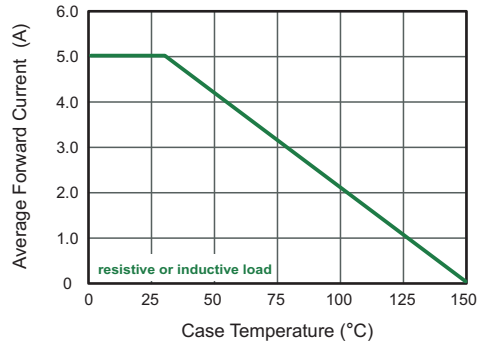
|         |           |
|---------|-----------|
| SS52BF  | YFW S52B  |
| SS54BF  | YFW S54B  |
| SS56BF  | YFW S56B  |
| SS58BF  | YFW S58B  |
| SS510BF | YFW S510B |
| SS512BF | YFW S512B |
| SS515BF | YFW S515B |
| SS520BF | YFW S520B |

| Parameter                                                                                                           | Symbols                                               | SS52BF          | SS54BF | SS56BF | SS58BF | SS510BF | SS512BF | SS515BF | SS520BF | Units            |
|---------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|-----------------|--------|--------|--------|---------|---------|---------|---------|------------------|
| Maximum Repetitive Peak Reverse Voltage                                                                             | $V_{RRM}$                                             | 20              | 40     | 60     | 80     | 100     | 120     | 150     | 200     | V                |
| Maximum RMS voltage                                                                                                 | $V_{RMS}$                                             | 14              | 28     | 42     | 56     | 70      | 84      | 105     | 140     | V                |
| Maximum DC Blocking Voltage                                                                                         | $V_{DC}$                                              | 20              | 40     | 60     | 80     | 100     | 120     | 150     | 200     | V                |
| Maximum Average Forward Rectified Current                                                                           | $I_{F(AV)}$                                           | 5.0             |        |        |        |         |         |         |         | A                |
| Peak Forward Surge Current,8.3ms<br>Single Half Sine-wave Superimposed<br>on Rated Load (JEDEC method)              | $I_{FSM}$                                             | 120             |        |        |        |         |         |         |         | A                |
| Peak Forward Surge Current,1.0ms<br>Single Half Sine-wave Superimposed<br>on Rated Load (JEDEC method)              | $I_{FSM}$                                             | 240             |        |        |        |         |         |         |         | A                |
| $I^2t$ Rating for fusing (3ms≤t≤8.3ms)                                                                              | $I^2t$                                                | 59.7            |        |        |        |         |         |         |         | A <sup>2</sup> S |
| Maximum Instantaneous Forward Voltage at 5 A                                                                        | $V_F$                                                 | 0.55            | 0.70   | 0.85   | 0.95   |         |         |         |         | V                |
| Maximum Instantaneous Reverse Current<br>at Rated DC Reverse Voltage<br>$T_A = 25^{\circ}C$<br>$T_A = 100^{\circ}C$ | $I_R$                                                 | 1.0<br>50       |        |        |        |         |         |         |         | mA               |
| Typical Junction Capacitance <sup>(1)</sup>                                                                         | $C_j$                                                 | 270             | 220    | 160    | 100    | 80      | pF      |         |         |                  |
| Typical Thermal Resistance <sup>(2)</sup>                                                                           | $R_{\theta JA}$<br>$R_{\theta JC}$<br>$R_{\theta JL}$ | 100<br>20<br>25 |        |        |        |         |         |         |         | °C/W             |
| Operating Junction Temperature Range                                                                                | $T_j$                                                 | -55 ~ +150      |        |        |        |         |         |         |         | °C               |
| Storage Temperature Range                                                                                           | $T_{stg}$                                             | -55 ~ +150      |        |        |        |         |         |         |         | °C               |

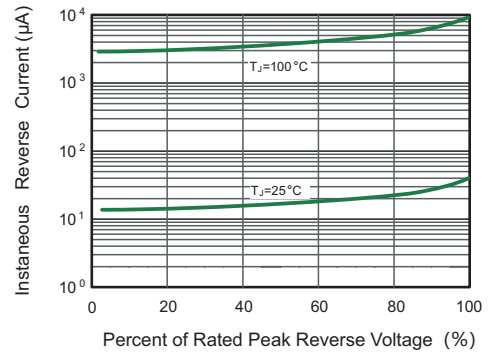
(1) Measured at 1 MHz and applied reverse voltage of 4 V D.C

(2) P.C.B. mounted with 2.0" X 2.0" (5 X 5 cm) copper pad areas.

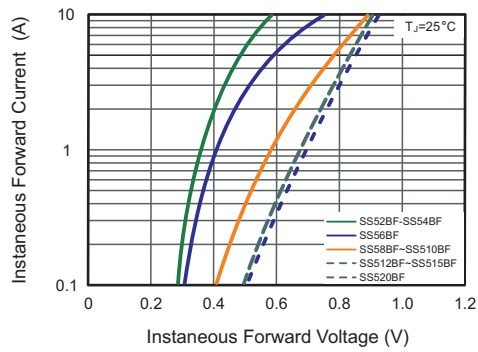
**Fig.1 Forward Current Derating Curve**



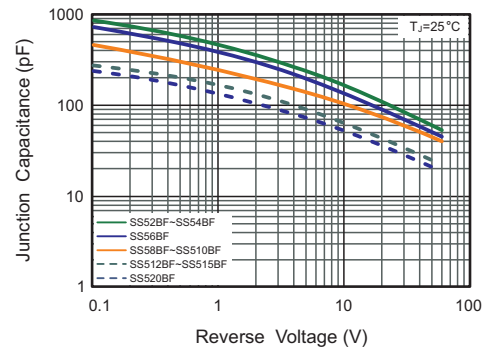
**Fig.2 Typical Reverse Characteristics**



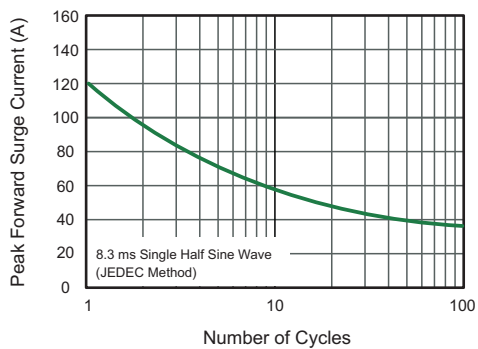
**Fig.3 Typical Forward Characteristic**



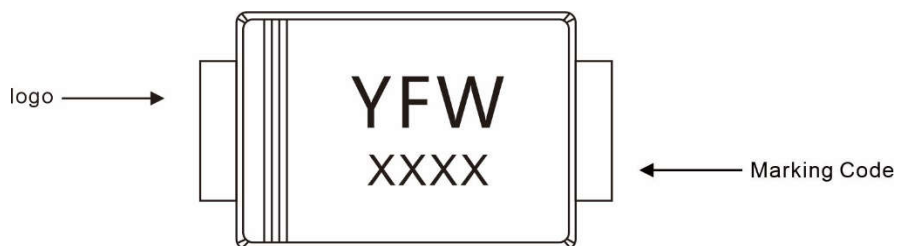
**Fig.4 Typical Junction Capacitance**



**Fig.5 Maximum Non-Repetitive Peak Forward Surge Current**



## Marking Diagram

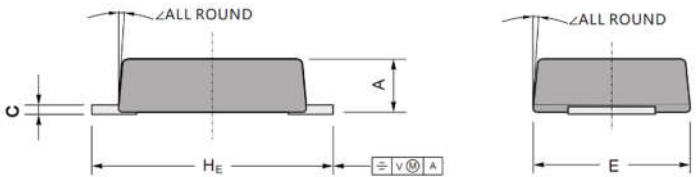


## Ordering information

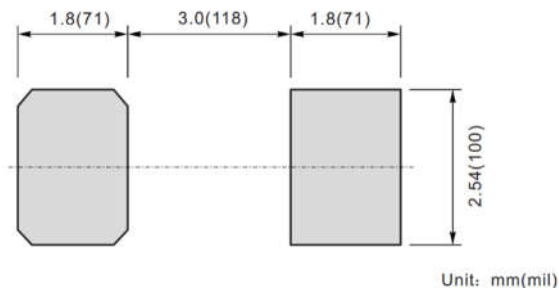
| Package | Packing Description | Packing Quantity             |
|---------|---------------------|------------------------------|
| SMBF    | Tape/Reel, 13" reel | 5000PCS/Reel 50000PCS/Carton |

## Package Dimensions

### SMBF

|                                                                                    |             |                       |             |             |             |
|------------------------------------------------------------------------------------|-------------|-----------------------|-------------|-------------|-------------|
|  | <b>Dim.</b> | <b>Millimeter(mm)</b> |             | <b>mil</b>  |             |
|                                                                                    |             | <b>Min.</b>           | <b>Max.</b> | <b>Min.</b> | <b>Max.</b> |
| A                                                                                  |             | 1.1                   | 1.3         | 43          | 51          |
| C                                                                                  |             | 0.18                  | 0.26        | 7           | 10          |
| D                                                                                  |             | 4.2                   | 4.4         | 165         | 173         |
| E                                                                                  |             | 3.5                   | 3.7         | 138         | 146         |
| H <sub>E</sub>                                                                     |             | 5.1                   | 5.5         | 200         | 216         |
| e                                                                                  |             | 2.2                   | 1.9         | 75          | 86          |
| g                                                                                  |             | 1.0                   |             | 40          |             |
| ∠                                                                                  |             | 9°                    |             |             |             |

### The recommended mounting pad size



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