



**THE DATASHEET OF  
SS54B-HF**



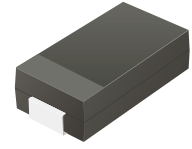
## SS54B-HF Thru. SS520B-HF

Reverse Voltage: 40 to 200 Volts

Forward Current: 5.0 Amp

RoHS Device

Halogen Free

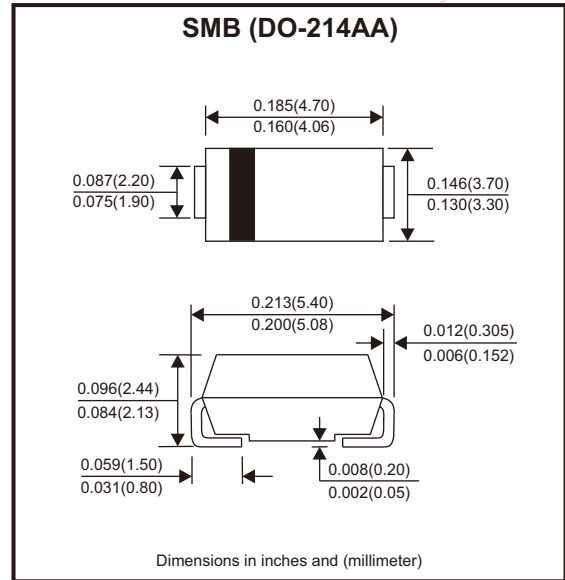


### Features

- 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.

### Mechanical data

- Case: SMB
- Terminals: Solderable per MIL-STD-750, method 2026.



### Circuit Diagram



### 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%

| Parameter  | Symbols         | SS54B-HF   | SS56B-HF  | SS510B-HF | SS515B-HF | SS520B-HF | Units              |
|--|-----------------|------------|-----------|-----------|-----------|-----------|--------------------|
| Maximum repetitive peak reverse voltage  | $V_{RRM}$       | 40         | 60        | 100       | 150       | 200       | V                  |
| Maximum RMS voltage  | $V_{RMS}$       | 28         | 42        | 70        | 105       | 140       | V                  |
| Maximum DC blocking voltage  | $V_{DC}$        | 40         | 60        | 100       | 150       | 200       | V                  |
| Maximum average forward rectified current  | $I_{F(AV)}$     | 5          |           |           |           |           | A                  |
| Peak forward surge current, 8.3ms single half sine-wave superimposed on rated load (JEDEC method)                  | $I_{FSM}$       | 150        |           |           |           |           | A                  |
| Max instantaneous forward voltage at 5A  | $V_F$           | 0.55       | 0.70      | 0.85      |           |           | V                  |
| Maximum DC reverse current<br>$T_j = 25^\circ\text{C}$<br>at rated DC reverse voltage<br>$T_j = 100^\circ\text{C}$ | $I_R$           | 1.0<br>50  | 0.3<br>25 |           |           |           | mA                 |
| Typical junction capacitance (Note 1)  | $C_j$           | 500        | 300       |           |           |           | pF                 |
| Typical thermal resistance (Note 2)  | $R_{\theta JA}$ | 50         |           |           |           |           | $^\circ\text{C/W}$ |
| Operating junction temperature range   | $T_j$           | -55 ~ +150 |           |           |           |           | $^\circ\text{C}$   |
| Storage temperature range  | $T_{stg}$       | -55 ~ +150 |           |           |           |           | $^\circ\text{C}$   |

Notes: 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.

Company reserves the right to improve product design , functions and reliability without notice.

REV:A

## Rating and Characteristic Curves (SS54B-HF Thru. SS520B-HF)

Fig.1 - Forward Current Derating Curve

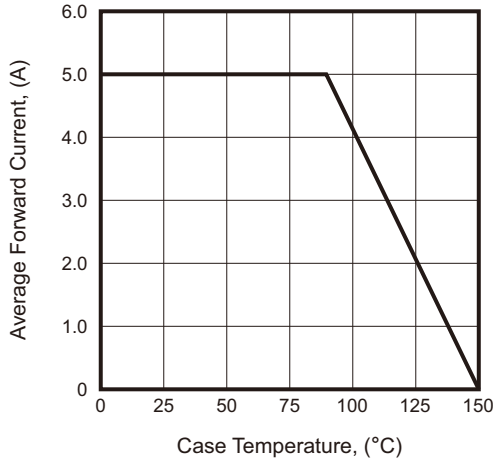


Fig.2 - Typical Reverse Characteristics

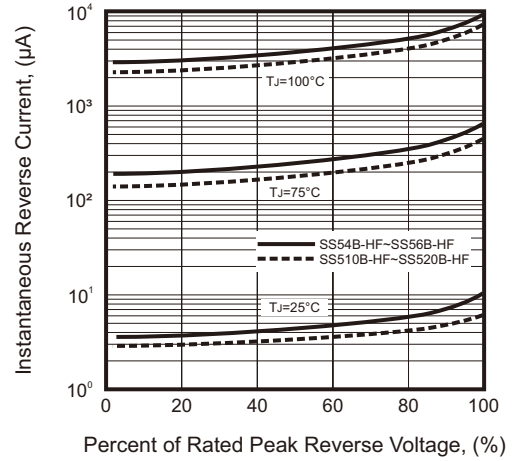


Fig.3 - Typical Forward Characteristic

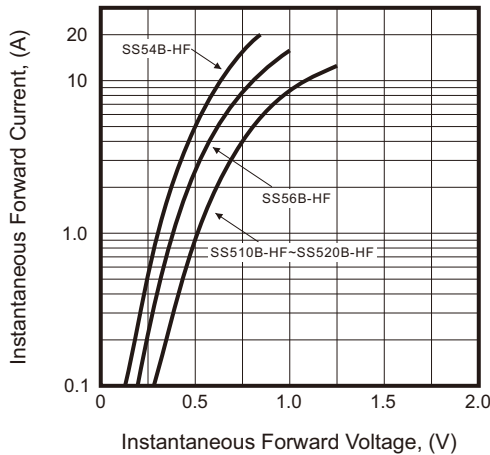


Fig.4 - Typical Junction Capacitance

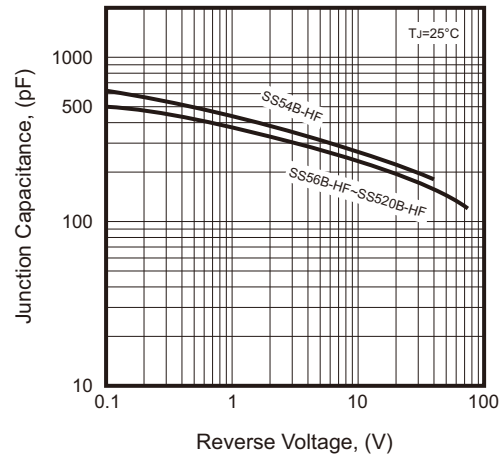


Fig.5 - Maximum Non-Repetitive Peak Forward Surge Current

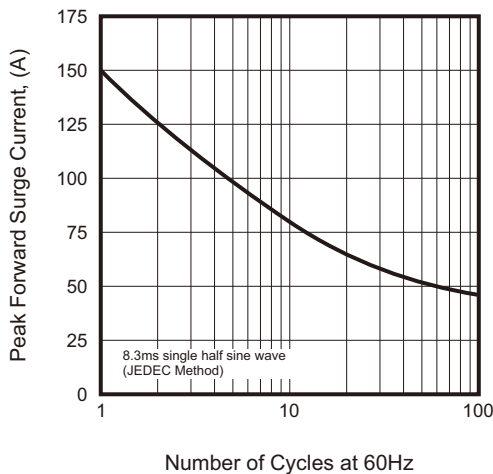
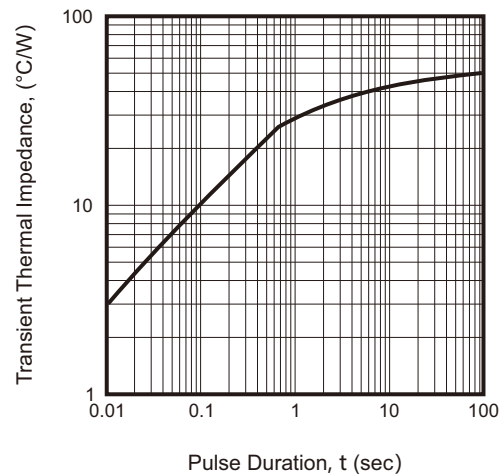
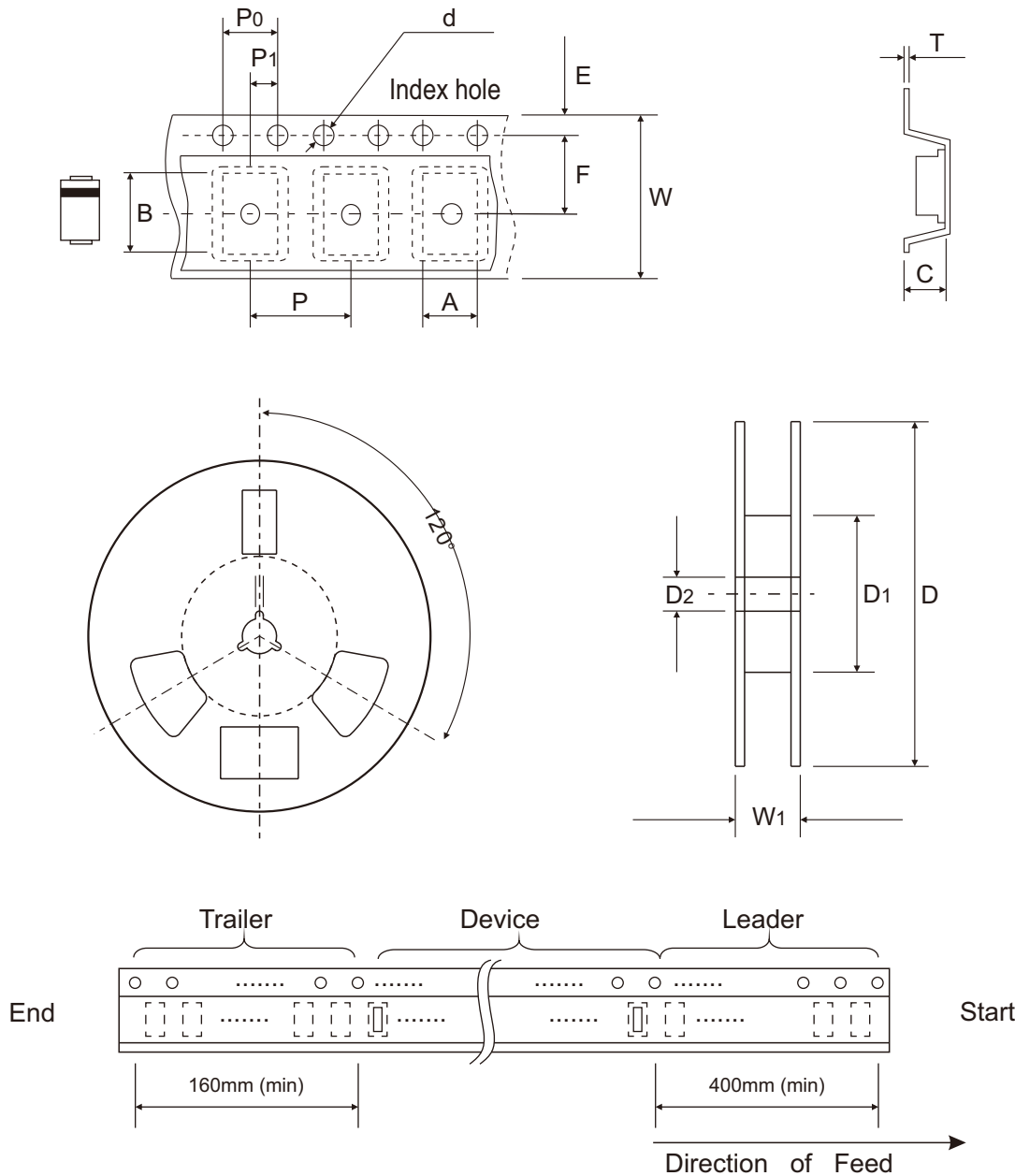


Fig.6 - Typical Transient Thermal Impedance



## Reel Taping Specification



| DO-214AA<br>(SMB) | SYMBOL | A             | B                        | C             | d             | D              | D1            | D2            |
|-------------------|--------|---------------|--------------------------|---------------|---------------|----------------|---------------|---------------|
|                   | (mm)   | 3.80 ± 0.10   | 5.50 + 0.05<br>- 0.10    | 2.45 ± 0.05   | 1.55 ± 0.05   | 330 ± 2.00     | 100 ± 1.00    | 13.00 ± 0.20  |
|                   | (inch) | 0.150 ± 0.004 | 0.217 + 0.002<br>- 0.004 | 0.096 ± 0.002 | 0.061 ± 0.002 | 12.992 ± 0.079 | 3.937 ± 0.039 | 0.512 ± 0.008 |

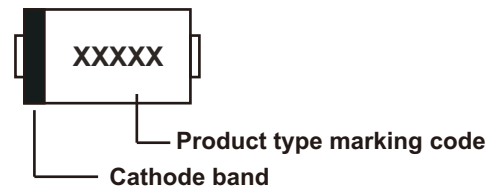
| DO-214AA<br>(SMB) | SYMBOL | E             | F             | P             | P0            | P1            | T             | W             | W1                       |
|-------------------|--------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|--------------------------|
|                   | (mm)   | 1.75 ± 0.10   | 5.50 ± 0.05   | 8.00 ± 0.10   | 4.00 ± 0.10   | 2.00 ± 0.05   | 0.25 ± 0.05   | 12.00 ± 0.15  | 18.00 + 2.00<br>- 1.00   |
|                   | (inch) | 0.069 ± 0.004 | 0.217 ± 0.002 | 0.315 ± 0.004 | 0.157 ± 0.004 | 0.079 ± 0.002 | 0.010 ± 0.002 | 0.472 ± 0.006 | 0.709 + 0.079<br>- 0.039 |

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## Marking Code

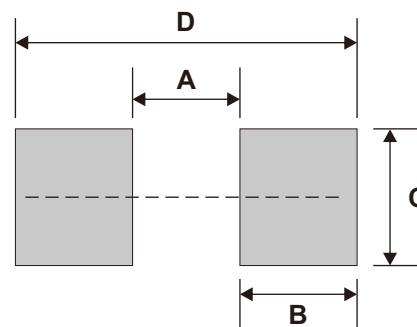
| Part Number | Marking Code |
|-------------|--------------|
| SS54B-HF    | SS54         |
| SS56B-HF    | SS56         |
| SS510B-HF   | SS510        |
| SS515B-HF   | SS515        |
| SS520B-HF   | SS520        |



xxxx/xxxxx = Product type marking code

## Suggested PAD Layout

| SIZE | DO-214AA (SMB) |        |
|------|----------------|--------|
|      | (mm)           | (inch) |
| A    | 2.20           | 0.087  |
| B    | 2.40           | 0.094  |
| C    | 2.80           | 0.110  |
| D    | 7.00           | 0.276  |



Note: 1. The pad layout is for reference purpose only.

## Standard Packaging

| Case Type         | REEL PACK       |                     |
|-------------------|-----------------|---------------------|
|                   | REEL<br>( pcs ) | Reel Size<br>(inch) |
| DO-214AA<br>(SMB) | 3,000           | 13                  |

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