

# Schottky Barrier Rectifiers, Surface Mount

3 A, 40 V-100 V

SS34FA-S310FA

## Features

- Low Power Loss, High Efficiency
- Guard Ring for Overvoltage Protection
- High Surge Current Capability
- UL Flammability 94V-0 Classification
- MSL 1 per J-STD-020
- NRVB Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC-Q101 Qualified and PPAP Capable
- This Device is Pb-Free and RoHS Compliant

## ABSOLUTE MAXIMUM RATINGS

(Values are at  $T_A = 25^\circ\text{C}$  unless otherwise noted)

| Symbol             | Parameter                                                                           | SS34FA      | SS36FA      | S310FA | Unit |
|--------------------|-------------------------------------------------------------------------------------|-------------|-------------|--------|------|
| V <sub>RRM</sub>   | Repetitive Peak Reverse Voltage                                                     | 40          | 60          | 100    | V    |
| V <sub>RMS</sub>   | RMS Reverse Voltage                                                                 | 28          | 42          | 70     | V    |
| V <sub>R</sub>     | DC Blocking Voltage                                                                 | 40          | 60          | 100    | V    |
| I <sub>F(AV)</sub> | Average Forward Rectified Current                                                   | 3           |             |        | A    |
| I <sub>FSM</sub>   | Peak Forward Surge Current: 8.3 ms Single Half Sine-Wave Superimposed on Rated Load | 80          |             |        | A    |
| T <sub>J</sub>     | Operating Junction Temperature Range                                                | -55 to +125 | -55 to +150 |        | °C   |
| T <sub>STG</sub>   | Storage Temperature Range                                                           | -55 to +150 |             |        | °C   |

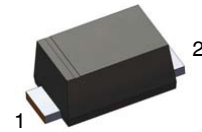
Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

## THERMAL CHARACTERISTICS

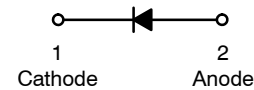
(Values are at  $T_A = 25^\circ\text{C}$  unless otherwise noted) (Note 1)

| Symbol          | Parameter                                 | Value | Unit                      |
|-----------------|-------------------------------------------|-------|---------------------------|
| $\psi_{JL}$     | Thermal Characteristics, Junction-to-Lead | 16    | $^\circ\text{C}/\text{W}$ |
| $R_{\theta JA}$ | Thermal Resistance, Junction-to-Ambient   | 152   | $^\circ\text{C}/\text{W}$ |

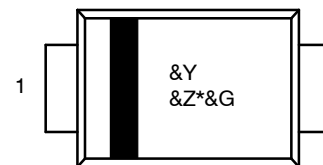
1. Per JESD51-3 Recommended Thermal Test Board. Device mounted on FR-4 PCB, board size = 76.2 mm × 114.3 mm.



SOD-123FL  
CASE 425AB



## MARKING DIAGRAM



&Y = Binary Calendar Year Coding Scheme  
 &Z = Assembly Plant Code  
 \* = Specific Device Code (34L, 36L or 30L)  
 &G = Single Digit Weekly Date Code

## ORDERING INFORMATION

See detailed ordering and shipping information on page 2 of this data sheet.

## SS34FA–S310FA

### ELECTRICAL CHARACTERISTICS (Values are at $T_A = 25^\circ\text{C}$ unless otherwise noted)

| Symbol   | Parameter                                      | Conditions                                                           | SS34FA | SS36FA | S310FA | Unit |
|----------|------------------------------------------------|----------------------------------------------------------------------|--------|--------|--------|------|
| $V_F$    | Maximum Instantaneous Forward Voltage (Note 2) | $I_F = 3\text{ A}$                                                   | 0.50   | 0.75   | 0.85   | V    |
| $I_R$    | Maximum Reverse Current at Rated $V_R$         | $T_J = 25^\circ\text{C}$                                             | 0.5    |        | 0.1    | mA   |
|          |                                                | $T_J = 125^\circ\text{C}$                                            | 60     | 10     | 5      |      |
| $C_J$    | Typical Junction Capacitance                   | $V_R = 4\text{ V}$ , $f = 1\text{ MHz}$                              | 152    | 117    | 78     | pF   |
| $T_{rr}$ | Typical Reverse Recovery Time                  | $I_F = 0.5\text{ A}$ , $I_R = 1\text{ A}$ , $I_{RR} = 0.25\text{ A}$ | 12     | 11     | 8      | ns   |

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

2. Pulse test with  $PW = 300\text{ }\mu\text{s}$ , 1% duty cycle.

### ORDERING INFORMATION

| Part Number         | Top Mark | Package                | Shipping <sup>†</sup> |
|---------------------|----------|------------------------|-----------------------|
| SS34FA, NRVBSS34FA* | 34L      | SOD-123FL<br>(Pb-Free) | 3,000 / Tape & Reel   |
| SS36FA, NRVBSS36FA* | 36L      | SOD-123FL<br>(Pb-Free) | 3,000 / Tape & Reel   |
| S310FA, NRVBS310FA* | 30L      | SOD-123FL<br>(Pb-Free) | 3,000 / Tape & Reel   |

<sup>†</sup>For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

\*NRVB Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC-Q101 Qualified and PPAP Capable

# SS34FA-S310FA

## TYPICAL PERFORMANCE CHARACTERISTICS

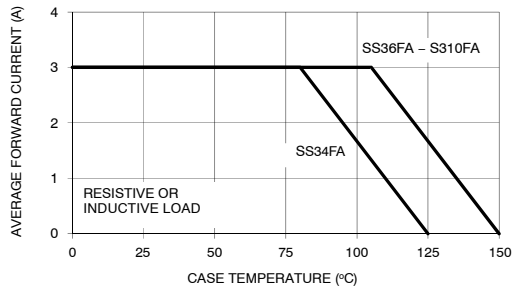


Figure 1. Forward Current Derating Curve

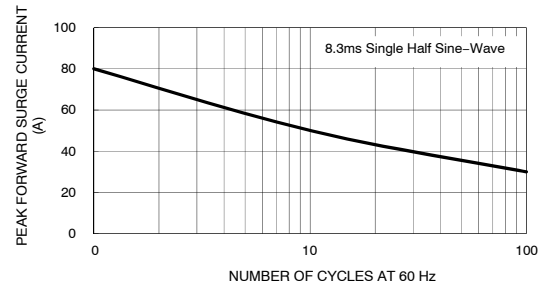


Figure 2. Maximum Non-Repetitive Forward Surge Current

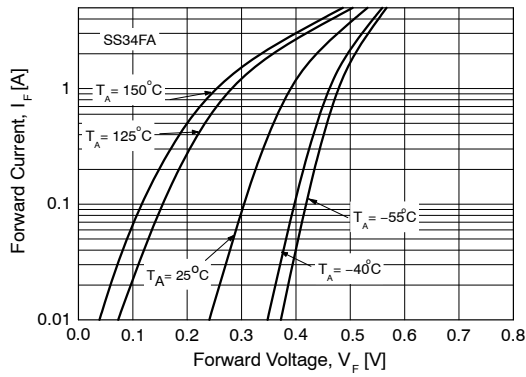


Figure 3. Typical Forward Characteristics

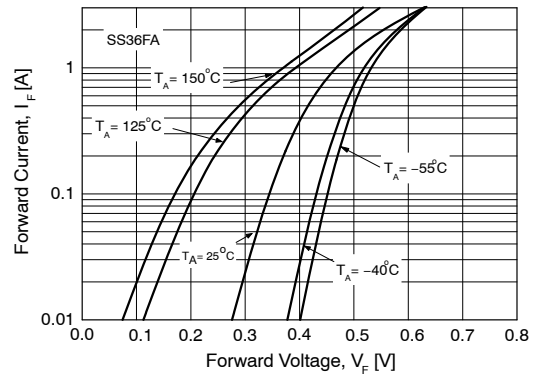


Figure 4. Typical Forward Characteristics

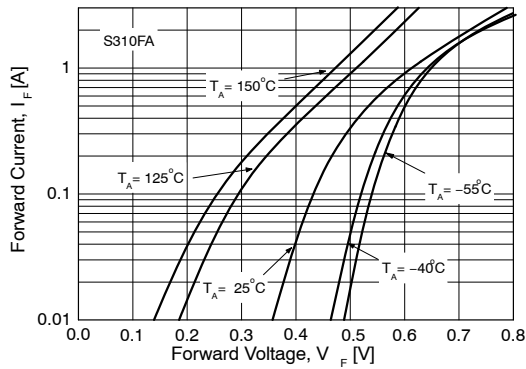


Figure 5. Typical Forward Characteristics

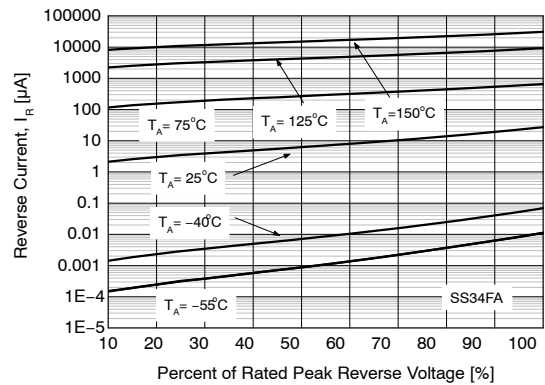


Figure 6. Typical Reverse Characteristics

# SS34FA-S310FA

## TYPICAL CHARACTERISTICS (CONTINUED)

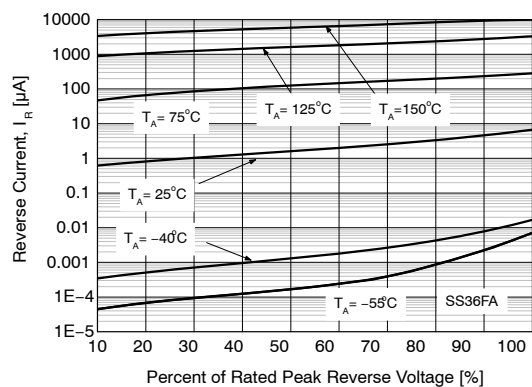


Figure 7. Typical Reverse Characteristics

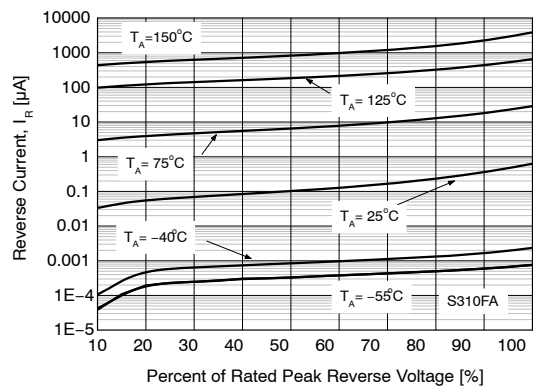


Figure 8. Typical Reverse Characteristics

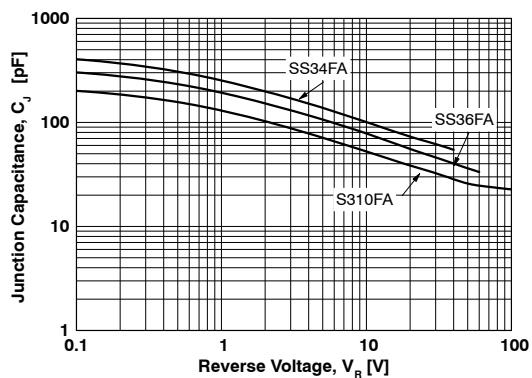
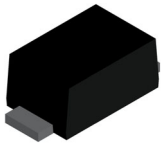
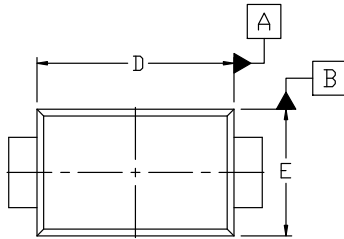


Figure 9. Typical Junction Capacitance

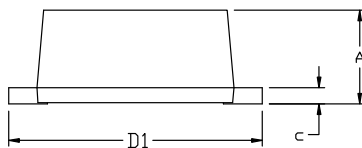


**SOD-123FA**  
**CASE 425AB**  
**ISSUE A**

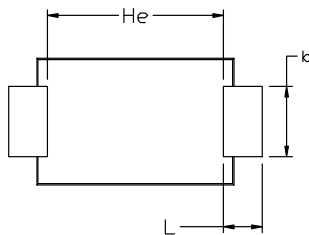
DATE 11 AUG 2022



TOP VIEW



FRONT VIEW

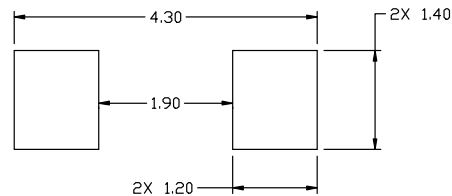


BOTTOM VIEW

NOTES:

1. NO INDUSTRY STANDARD APPLIES TO THIS PACKAGE.
2. ALL DIMENSIONS ARE IN MILLIMETERS.
3. DIMENSIONS ARE EXCLUSIVE OF BURRS, MOLD FLASH AND THE BAR PROTRUSIONS.

| DIM | MILLIMETERS |      |      |
|-----|-------------|------|------|
|     | MIN.        | NOM. | MAX. |
| A   | 1.23        | 1.33 | 1.43 |
| b   | 0.80        | 1.00 | 1.20 |
| c   | 0.16        | 0.23 | 0.30 |
| D   | 2.70        | 2.80 | 2.90 |
| D1  | 3.40        | 3.60 | 3.80 |
| E   | 1.70        | 1.80 | 1.90 |
| He  | 2.45        | ---  | 2.60 |
| L   | 0.35        | 0.60 | 0.85 |



**RECOMMENDED**  
**MOUNTING FOOTPRINT\***

- \* For additional information on our Pb-Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERM/D.

|                         |                    |                                                                                                                                                                                  |
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