

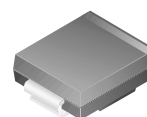
# SS32 - S310 Schottky Rectifier

## Features

- Metal to Silicon Rectifiers, Majority Carrier Conduction
- Low-Forward Voltage Drop
- Easy Pick and Place
- High-Surge Current Capability

## Description

The SS32-S310 series includes a high-efficiency, low power loss, general-purpose Schottky rectifiers. The clip-bonded leg structure provides high thermal performance and low electrical resistance. These rectifiers are suited for free wheeling, secondary rectification, and reverse polarity protection applications.



**SMC/DO-214AB**  
COLOR BAND DENOTES CATHODE

## Ordering Information

| Part Number | Marking | Package  | Packing Method |
|-------------|---------|----------|----------------|
| SS32        | SS32    | DO-214AB | Tape and Reel  |
| SS33        | SS33    |          |                |
| SS34        | SS34    |          |                |
| SS35        | SS35    |          |                |
| SS36        | SS36    |          |                |
| SS38        | SS38    |          |                |
| SS39        | SS39    |          |                |
| S310        | S310    |          |                |

## Absolute Maximum Ratings

Stresses exceeding the absolute maximum ratings may damage the device. The device may not function or be operable above the recommended operating conditions and stressing the parts to these levels is not recommended. In addition, extended exposure to stresses above the recommended operating conditions may affect device reliability. The absolute maximum ratings are stress ratings only. Values are at  $T_A = 25^\circ\text{C}$  unless otherwise noted.

| Symbol      | Parameter                                                               | Value       |      |      |      |      |      |      |      | Units            |
|-------------|-------------------------------------------------------------------------|-------------|------|------|------|------|------|------|------|------------------|
|             |                                                                         | SS32        | SS33 | SS34 | SS35 | SS36 | SS38 | SS39 | S310 |                  |
| $V_{RRM}$   | Maximum Repetitive Reverse Voltage                                      | 20          | 30   | 40   | 50   | 60   | 80   | 90   | 100  | V                |
| $I_{F(AV)}$ | Maximum Average Forward Current at $T_A = 75^\circ\text{C}$             | 3.0         |      |      |      |      |      |      |      | A                |
| $I_{FSM}$   | Non-Repetitive Peak Forward Surge Current: 8.3 ms Single Half-Sine Wave | 100         |      |      |      |      |      |      |      | A                |
| $T_{STG}$   | Storage Temperature Range                                               | -55 to +150 |      |      |      |      |      |      |      | $^\circ\text{C}$ |
| $T_J$       | Operating Junction Temperature                                          | -55 to +150 |      |      |      |      |      |      |      | $^\circ\text{C}$ |

## Thermal Characteristics

| Symbol          | Parameter                                              | Value | Units |
|-----------------|--------------------------------------------------------|-------|-------|
| $P_D$           | Power Dissipation                                      | 2.27  | W     |
| $R_{\theta JA}$ | Thermal Resistance, Junction to Ambient <sup>(1)</sup> | 55    | °C/W  |
| $R_{\theta JL}$ | Thermal Resistance, Junction to Lead                   | 17    | °C/W  |

### Note:

1. Device mounted on FE-4 PCB 0.55 x 0.55 inch (14 x 14 mm).

## Electrical Characteristics

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

| Symbol         | Parameter                               | Test Conditions        | Value |      |      |      |      |      |      |      | Units |
|----------------|-----------------------------------------|------------------------|-------|------|------|------|------|------|------|------|-------|
|                |                                         |                        | SS32  | SS33 | SS34 | SS35 | SS36 | SS38 | SS39 | S310 |       |
| V <sub>F</sub> | Forwarded Voltage                       | I <sub>F</sub> = 3.0 A | 500   |      |      | 750  |      | 850  |      |      | mV    |
| I <sub>R</sub> | Reverse Current at Rated V <sub>R</sub> | T <sub>A</sub> = 25°C  | 0.5   |      |      |      |      |      |      |      | mA    |
|                |                                         | T <sub>A</sub> = 100°C | 20    |      |      | 10   |      |      |      |      |       |

## Typical Performance Characteristics

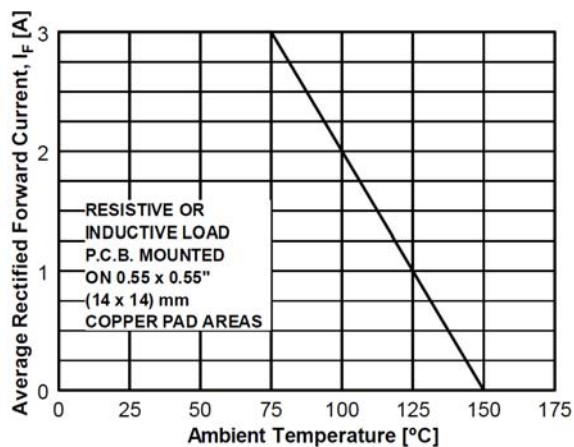


Figure 1. Forward Current Derating Curve

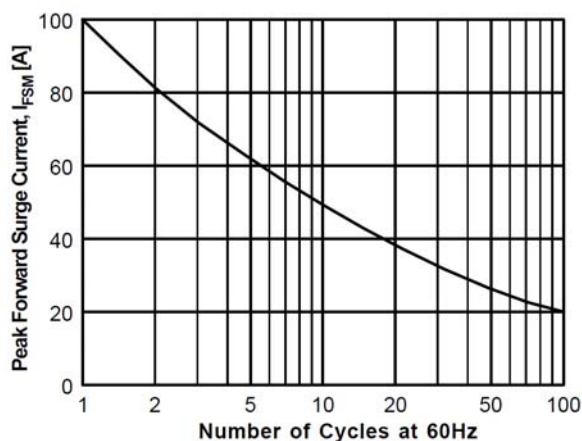


Figure 2. Non-Repetitive Surge Current

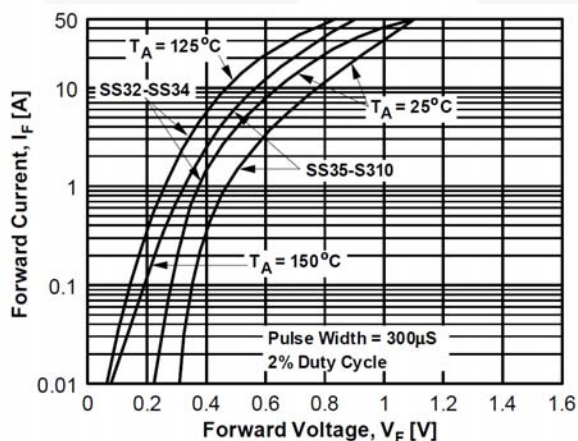


Figure 3. Forward Voltage Characteristics

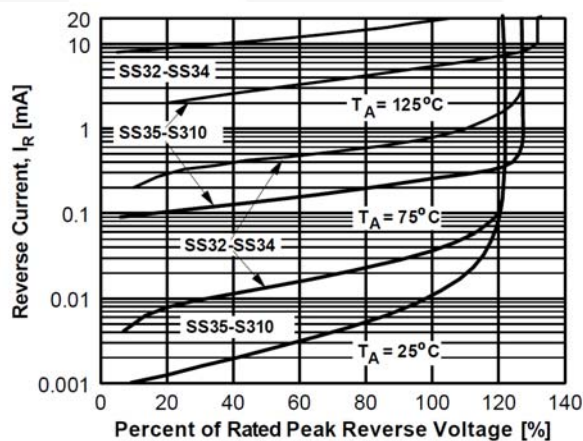


Figure 4. Reverse Current vs. Reverse Voltage

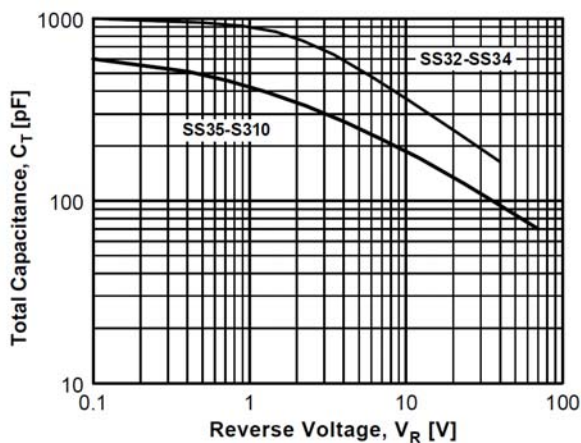


Figure 5. Total Capacitance

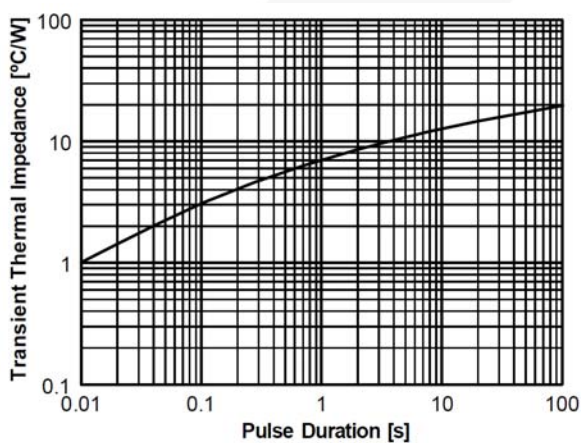
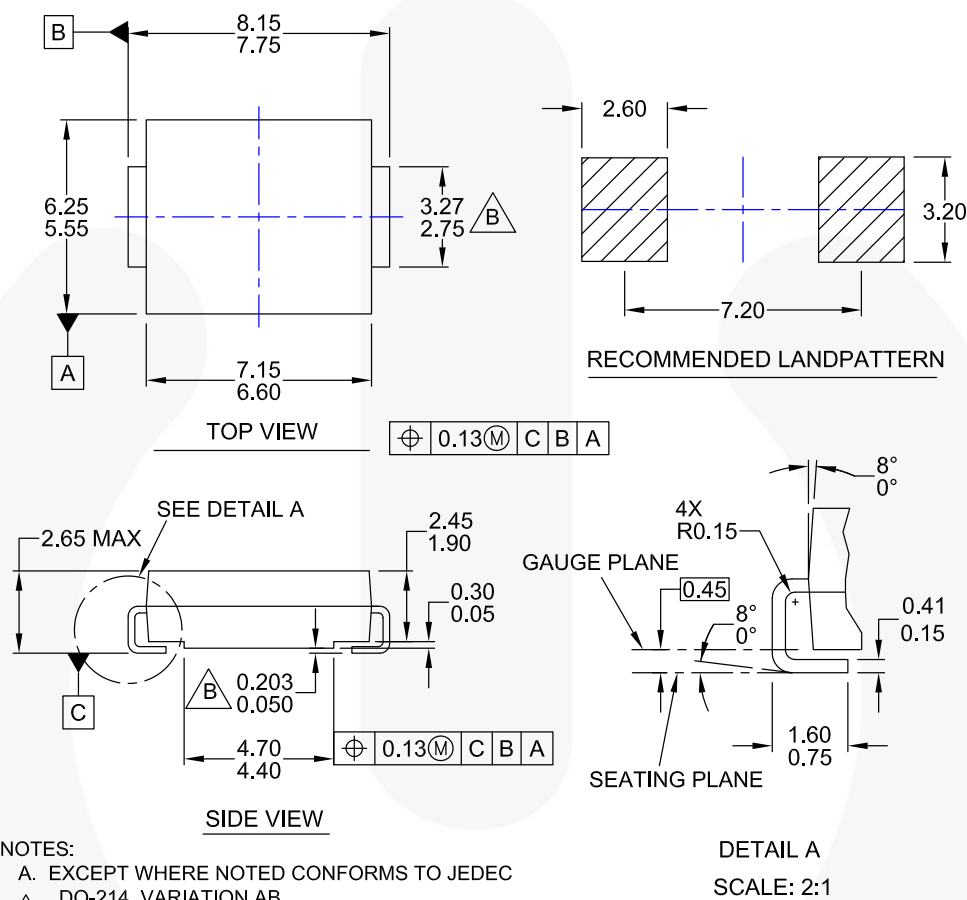


Figure 6. Thermal Impedance Characteristics

## Physical Dimension

## DO-214AB



## NOTES:

- EXCEPT WHERE NOTED CONFORMS TO JEDEC DO-214, VARIATION AB.
- DOES NOT COMPLY TO JEDEC STD. VALUE.
- ALL DIMENSIONS ARE IN MILLIMETERS.
- DIMENSIONS ARE EXCLUSIVE OF BURRS, MOLD FLASH, AND TIE BAR PROTRUSIONS.
- DIMENSIONS AND TOLERANCING AS PER ASME Y14.5M-1994
- LAND PATTERN STANDARD: DIOM7957X241M
- DRAWING FILE NAME: DO214ABREV1

## DETAIL A

SCALE: 2:1

Figure 7. 2-LEAD, SMC, JEDEC DO-214, VARIATION AB (ACTIVE)

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| AX-CAP®*                                                                          | FRFET®                                         | PowerXS™                                                                          |  |
| BitSiC™                                                                           | Global Power Resource <sup>SM</sup>            | PowerTrench®                                                                      | TinyBoost®                                                                          |
| Build it Now™                                                                     | GreenBridge™                                   | PowerXS™                                                                          | TinyBuck®                                                                           |
| CorePLUS™                                                                         | Green FPS™                                     | Programmable Active Droop™                                                        | TinyCalc™                                                                           |
| CorePOWER™                                                                        | Green FPS™ e-Series™                           | QFET®                                                                             | TinyLogic®                                                                          |
| CROSSVOLT™                                                                        | Gmax™                                          | QS™                                                                               | TINYOPTO™                                                                           |
| CTL™                                                                              | GTO™                                           | Quiet Series™                                                                     | TinyPower™                                                                          |
| Current Transfer Logic™                                                           | IntelliMAX™                                    | RapidConfigure™                                                                   | TinyPWM™                                                                            |
| DEUXPEED®                                                                         | ISOPLANAR™                                     |  | TinyWire™                                                                           |
| Dual Cool™                                                                        | Making Small Speakers Sound Louder and Better™ | Saving our world, 1mW/W/kW at a time™                                             | TranSiC™                                                                            |
| EcoSPARK®                                                                         | MegaBuck™                                      | SignalWise™                                                                       | TriFault Detect™                                                                    |
| EfficientMax™                                                                     | MICROCOUPLER™                                  | SmartMax™                                                                         | TRUECURRENT®*                                                                       |
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| Fairchild Semiconductor®                                                          | MillerDrive™                                   | STEALTH™                                                                          | Ultra FRFET™                                                                        |
| FACT Quiet Series™                                                                | MotionMax™                                     | SuperFET®                                                                         | UniFET™                                                                             |
| FACT®                                                                             | mWSaver®                                       | SuperSOT™-3                                                                       | VCX™                                                                                |
| FAST®                                                                             | OptoHiT™                                       | SuperSOT™-6                                                                       | VisualMax™                                                                          |
| FastvCore™                                                                        | OPTOLOGIC®                                     | SuperSOT™-8                                                                       | VoltagePlus™                                                                        |
| FETBench™                                                                         | OPTOPLANAR®                                    | SupreMOS®                                                                         | XS™                                                                                 |
| FPS™                                                                              |                                                | SyncFET™                                                                          |                                                                                     |

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