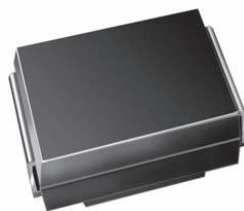


## Surface Mount Glass Passivated Rectifier


**DO-214AA (SMB)**

### PRIMARY CHARACTERISTICS

|                  |                                                 |
|------------------|-------------------------------------------------|
| $I_{F(AV)}$      | 1.5 A                                           |
| $V_{RRM}$        | 50 V, 100 V, 200 V, 400 V, 600 V, 800 V, 1000 V |
| $I_{FSM}$        | 50 A                                            |
| $I_R$            | 1.0 $\mu$ A                                     |
| $V_F$            | 1.15 V                                          |
| $T_J$ max.       | 150 °C                                          |
| Package          | DO-214AA (SMB)                                  |
| Diode variations | Single die                                      |

### FEATURES

- Low profile package
- Ideal for automated placement
- Glass passivated chip junction
- Low forward voltage drop
- Low leakage current
- High forward surge capability
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260 °C
- AEC-Q101 qualified
- Material categorization: For definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)


**RoHS**  
COMPLIANT

### TYPICAL APPLICATIONS

For use in general purpose rectification of power supplies, inverters, converters and freewheeling diodes for consumer, automotive and telecommunication.

### MECHANICAL DATA

**Case:** DO-214AA (SMB)

Molding compound meets UL 94 V-0 flammability rating

Base P/N-E3 - RoHS-compliant, commercial grade

Base P/NHE3 - RoHS-compliant, AEC-Q101 qualified

**Terminals:** Matte tin plated leads, solderable per J-STD-002 and JESD 22-B102

E3 suffix meets JESD 201 class 1A whisker test, HE3 suffix meets JESD 201 class 2 whisker test

**Polarity:** Color band denotes cathode end

### MAXIMUM RATINGS ( $T_A = 25$ °C unless otherwise noted)

| PARAMETER                                                                          | SYMBOL         | S2A           | S2B | S2D | S2G | S2J | S2K | S2M  | UNIT |
|------------------------------------------------------------------------------------|----------------|---------------|-----|-----|-----|-----|-----|------|------|
| Device marking code                                                                |                | SA            | SB  | SD  | SG  | SJ  | SK  | SM   |      |
| Max. repetitive peak reverse voltage                                               | $V_{RRM}$      | 50            | 100 | 200 | 400 | 600 | 800 | 1000 | V    |
| Max. RMS voltage                                                                   | $V_{RMS}$      | 35            | 70  | 140 | 280 | 420 | 560 | 700  | V    |
| Max. DC blocking voltage                                                           | $V_{DC}$       | 50            | 100 | 200 | 400 | 600 | 800 | 1000 | V    |
| Max. average forward rectified current at $T_L = 100$ °C                           | $I_{F(AV)}$    | 1.5           |     |     |     |     |     |      | A    |
| Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load | $I_{FSM}$      | 50            |     |     |     |     |     |      | A    |
| Operating and storage temperature range                                            | $T_J, T_{STG}$ | - 55 to + 150 |     |     |     |     |     |      | °C   |

### ELECTRICAL CHARACTERISTICS ( $T_A = 25$ °C unless otherwise noted)

| ELECTRICAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted) |                                                                          |                         |                 |      |     |     |     |     |     |     |      |
|----------------------------------------------------------------------------|--------------------------------------------------------------------------|-------------------------|-----------------|------|-----|-----|-----|-----|-----|-----|------|
| PARAMETER                                                                  | TEST CONDITIONS                                                          |                         | SYMBOL          | S2A  | S2B | S2D | S2G | S2J | S2K | S2M | UNIT |
| Max. instantaneous forward voltage                                         | 1.5 A                                                                    |                         | V <sub>F</sub>  | 1.15 |     |     |     |     |     |     | V    |
| Max. DC reverse current at rated DC blocking voltage                       |                                                                          | T <sub>A</sub> = 25 °C  | I <sub>R</sub>  | 1.0  |     |     |     |     |     |     | μA   |
|                                                                            |                                                                          | T <sub>A</sub> = 125 °C |                 | 125  |     |     |     |     |     |     |      |
| Typical reverse recovery time                                              | I <sub>F</sub> = 0.5 A, I <sub>R</sub> = 1.0 A, I <sub>rr</sub> = 0.25 A |                         | t <sub>rr</sub> | 2.0  |     |     |     |     |     |     | μs   |
| Typical junction capacitance                                               | 4.0 V, 1 MHz                                                             |                         | C <sub>J</sub>  | 16   |     |     |     |     |     |     | pF   |

**THERMAL CHARACTERISTICS** ( $T_A = 25\text{ }^{\circ}\text{C}$  unless otherwise noted)

| PARAMETER                                 | SYMBOL           | S2A | S2B | S2D | S2G | S2J | S2K | S2M | UNIT |
|-------------------------------------------|------------------|-----|-----|-----|-----|-----|-----|-----|------|
| Typical thermal resistance <sup>(1)</sup> | R <sub>θJA</sub> | 53  |     |     |     |     |     |     | °C/W |
|                                           | R <sub>θJL</sub> | 16  |     |     |     |     |     |     |      |

**Note**

<sup>(1)</sup> Thermal resistance from junction to ambient and from junction to lead mounted on PCB with 0.3" x 0.3" (8.0 mm x 8.0 mm) copper pad areas

**ORDERING INFORMATION** (Example)

| PREFERRED P/N             | UNIT WEIGHT (g) | PREFERRED PACKAGE CODE | BASE QUANTITY | DELIVERY MODE                      |
|---------------------------|-----------------|------------------------|---------------|------------------------------------|
| S2J-E3/52T                | 0.096           | 52T                    | 750           | 7" diameter plastic tape and reel  |
| S2J-E3/5BT                | 0.096           | 5BT                    | 3200          | 13" diameter plastic tape and reel |
| S2JHE3/52T <sup>(1)</sup> | 0.096           | 52T                    | 750           | 7" diameter plastic tape and reel  |
| S2JHE3/5BT <sup>(1)</sup> | 0.096           | 5BT                    | 3200          | 13" diameter plastic tape and reel |

**Note**

<sup>(1)</sup> AEC-Q101 qualified

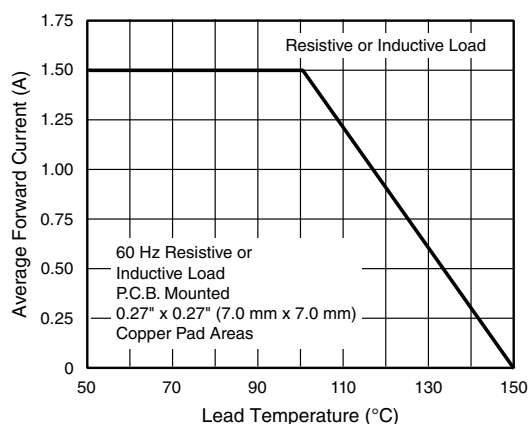
**RATINGS AND CHARACTERISTICS CURVES** ( $T_A = 25\text{ }^{\circ}\text{C}$  unless otherwise noted)

Fig. 1 - Forward Current Derating Curve

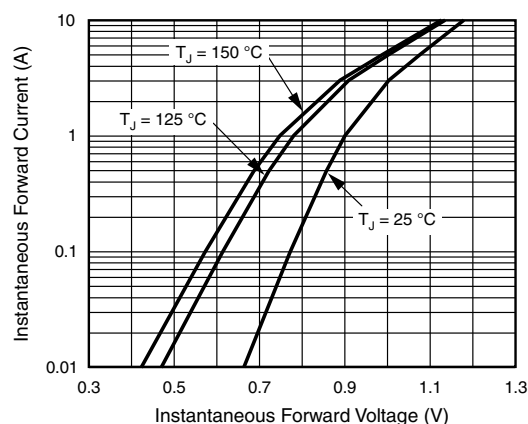


Fig. 3 - Typical Instantaneous Forward Characteristics

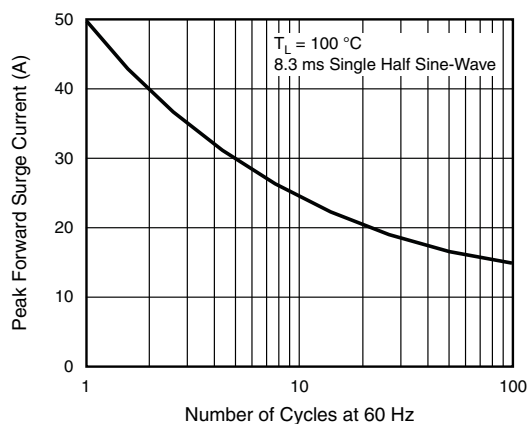


Fig. 2 - Max. Non-Repetitive Peak Forward Surge Current

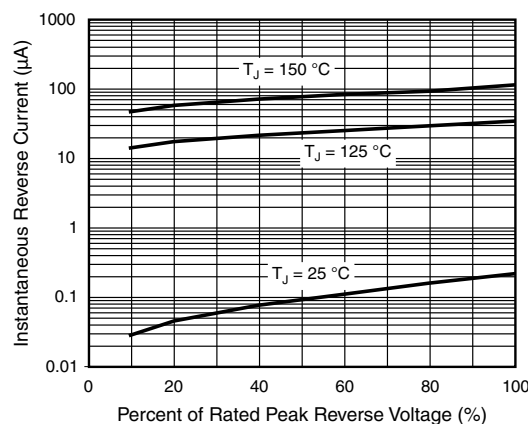


Fig. 4 - Typical Reverse Characteristics

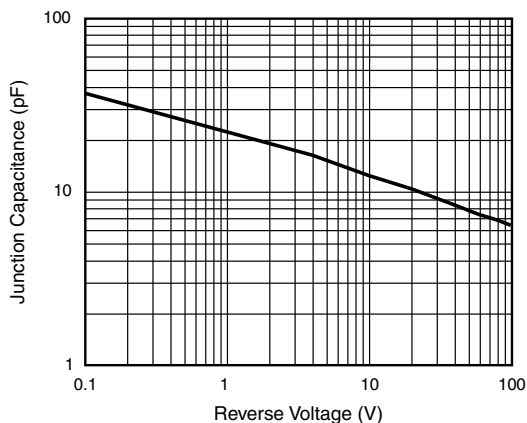


Fig. 5 - Typical Junction Capacitance

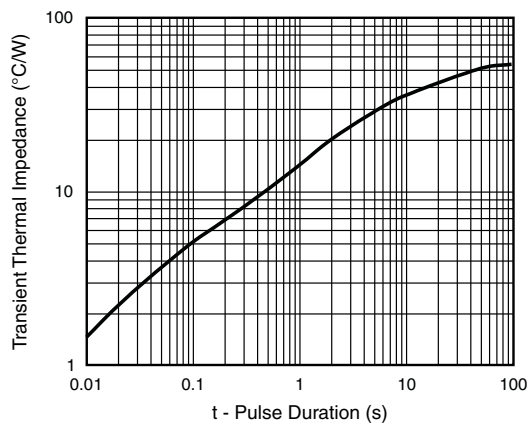
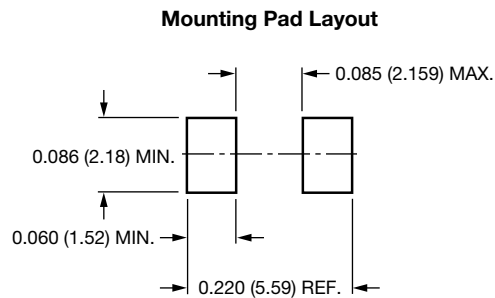
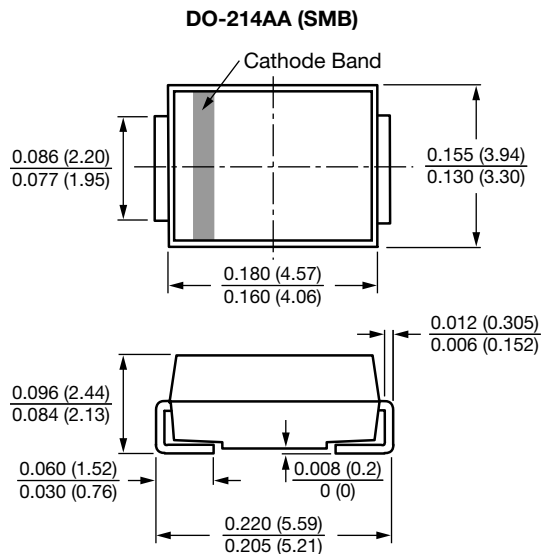


Fig. 6 - Typical Transient Thermal Impedance

**PACKAGE OUTLINE DIMENSIONS** in inches (millimeters)




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