

## Surface Mount General Purpose Silicon Rectifiers

**Reverse Voltage - 50 to 1000 V**

**Forward Current - 5 A**

### FEATURES

- ◆ For surface mounted applications
- ◆ Low profile package
- ◆ Glass Passivated Chip Junction
- ◆ Ideal for automated placement
- ◆ Lead free in comply with EU RoHS 2011/65/EU directives

### MECHANICAL DATA

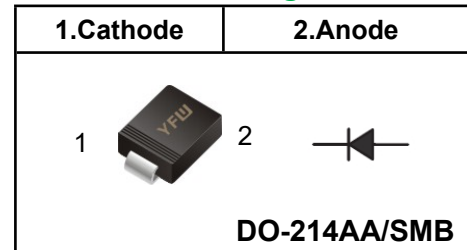
- ◆ Case: DO-214AA/SMB
- ◆ Terminals: Solderable per MIL-STD-750, Method 2026
- ◆ Approx. Weight: 0.093g / 0.003oz

### Maximum Ratings and Electrical characteristics

Ratings at 25 °C ambient temperature unless otherwise specified.

Single phase half-wave 60 Hz, resistive or inductive load, for capacitive load current derate by 20 %.

### Pinning



### Marking Code

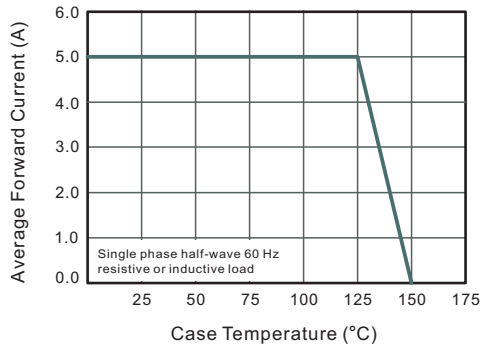
|             |            |
|-------------|------------|
| <b>S5AB</b> | <b>S5A</b> |
| <b>S5BB</b> | <b>S5B</b> |
| <b>S5DB</b> | <b>S5D</b> |
| <b>S5GB</b> | <b>S5G</b> |
| <b>S5JB</b> | <b>S5J</b> |
| <b>S5KB</b> | <b>S5K</b> |
| <b>S5MB</b> | <b>S5M</b> |

| Parameter   | Symbols                        | S5AB       | S5BB | S5DB | S5GB | S5JB | S5KB | S5MB | Units              |
|---|--------------------------------|------------|------|------|------|------|------|------|--------------------|
| Maximum Repetitive Peak Reverse Voltage   | $V_{RRM}$                      | 50         | 100  | 200  | 400  | 600  | 800  | 1000 | V                  |
| Maximum RMS voltage   | $V_{RMS}$                      | 35         | 70   | 140  | 280  | 420  | 560  | 700  | V                  |
| Maximum DC Blocking Voltage   | $V_{DC}$                       | 50         | 100  | 200  | 400  | 600  | 800  | 1000 | V                  |
| Maximum Average Forward Rectified Current at $T_c = 125\text{ }^\circ\text{C}$  | $I_{F(AV)}$                    | 5          |      |      |      |      |      |      | A                  |
| Peak Forward Surge Current 8.3 ms Single Half Sine Wave Superimposed on Rated Load  | $I_{FSM}$                      | 200        |      |      |      |      |      |      | A                  |
| Maximum Instantaneous Forward Voltage at 5 A  | $V_F$                          | 1.1        |      |      |      |      |      |      | V                  |
| Maximum DC Reverse Current $T_a = 25\text{ }^\circ\text{C}$<br>at Rated DC Blocking Voltage $T_a = 125\text{ }^\circ\text{C}$ | $I_R$                          | 10<br>100  |      |      |      |      |      |      | $\mu\text{A}$      |
| Typical Junction Capacitance <sup>(1)</sup>   | $C_j$                          | 40         |      |      |      |      |      |      | pF                 |
| Typical Thermal Resistance <sup>(2)</sup>   | $R_{\theta JA}, R_{\theta JC}$ | 48/16      |      |      |      |      |      |      | $^\circ\text{C/W}$ |
| Operating and Storage Temperature Range   | $T_j, T_{stg}$                 | -55 ~ +150 |      |      |      |      |      |      | $^\circ\text{C}$   |

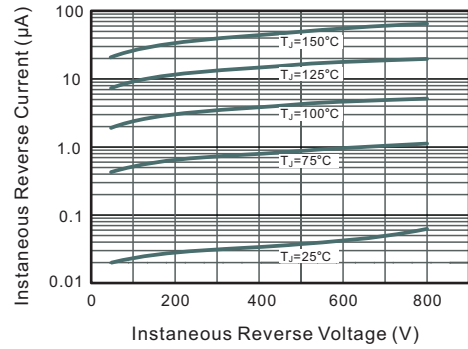
(1) Measured at 1 MHz and applied reverse voltage of 4 V D.C

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

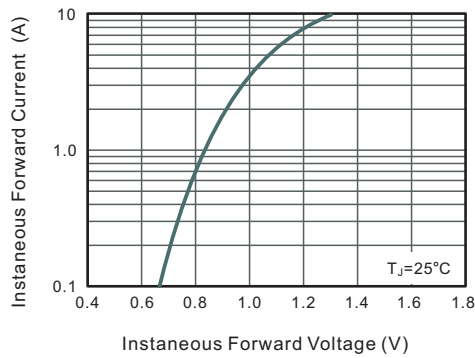
**Fig.1 Forward Current Derating Curve**



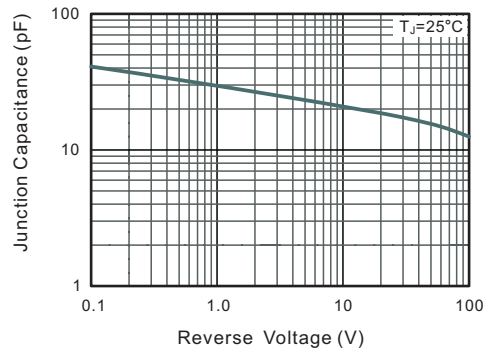
**Fig.2 Typical Instantaneous Reverse Characteristics**



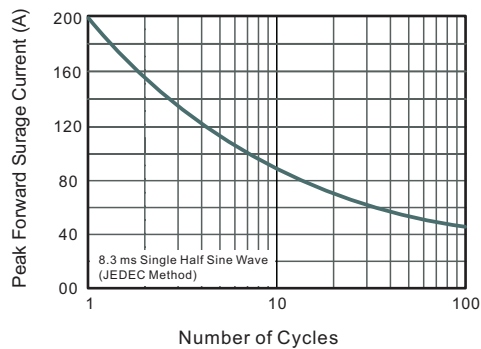
**Fig.3 Typical Forward Characteristic**



**Fig.4 Typical Junction Capacitance**

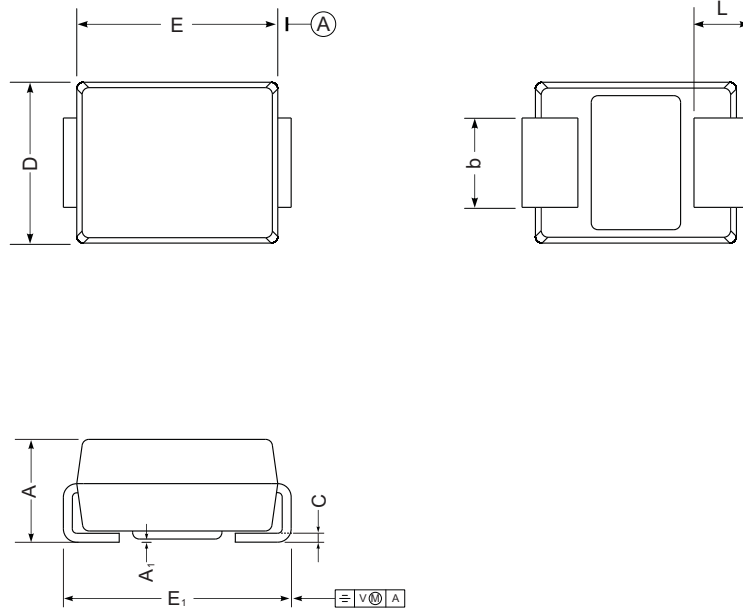


**Fig.5 Maximum Non-Repetitive Peak Forward Surge Current**



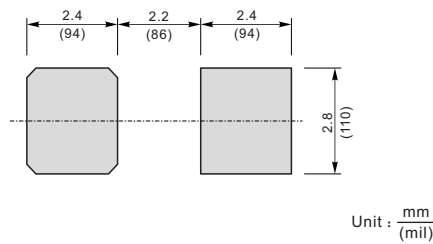
**Package Outline DO-214AA SMB**

Plastic surface mounted package; 2 leads



| UNIT |     | A    | E    | D    | E <sub>1</sub> | A <sub>1</sub> | L   | C     | b   |
|------|-----|------|------|------|----------------|----------------|-----|-------|-----|
| mm   | max | 2.44 | 4.70 | 3.94 | 5.59           | 0.20           | 1.5 | 0.305 | 2.2 |
|      | min | 2.13 | 4.06 | 3.3  | 5.08           | 0.05           | 0.8 | 0.152 | 1.9 |
| mil  | max | 96   | 185  | 155  | 220            | 7.9            | 59  | 12    | 87  |
|      | min | 84   | 160  | 130  | 200            | 2.0            | 32  | 6     | 75  |

**The recommended mounting pad size**



**Summary of Packing Options**

| Package      | Packing Description | Packing Quantity | Industry Standard |
|--------------|---------------------|------------------|-------------------|
| DO-214AA SMB | Tape/Reel, 13" reel | 3000             | EIA-481-1         |