


### FEATURES

- Glass passivated junction
- For Surface Mount Applications, Easy to pick and place
- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- Low forward voltage drop
- High current capability, High reliability
- Low power loss, high efficiency
- High surge current capability
- High speed switching, Low leakage
- High temperature soldering guaranteed: 260°C/10 seconds at terminals,
- Component in accordance to RoHS 2015/863/EU

### SMB(DO-214AA)



Cathode  Anode

### MECHANICAL DATA

- Case: JEDEC SMB(DO-214AA) molded plastic body
- Terminals: Solder Plated, solderable per MIL-STD-750, method 2026
- Polarity: Color band denotes cathode end
- Weight: 0.003ounce, 0.093 gram

### TYPICAL APPLICATIONS

For use in low voltage, high frequency inverters, DC/DC converters, free wheeling, and polarity protection applications

### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

(Rating at 25°C ambient temperature unless otherwise specified, Single phase, half wave, 60HZ, resistive or inductive load. For capacitive load, derate current by 20%.)

| Parameters   | Symbols                 | US3AB       | US3BB | US3DB | US3FB | US3GB | US3JB | US3KB | US3MB | Units            |                    |
|--|-------------------------|-------------|-------|-------|-------|-------|-------|-------|-------|------------------|--------------------|
| Maximum Repetitive Peak Reverse Voltage  | $V_{RM}$                | 50          | 100   | 200   | 300   | 400   | 600   | 800   | 1000  | V                |                    |
| Maximum RMS Voltage  | $V_{RMS}$               | 35          | 70    | 140   | 210   | 280   | 420   | 560   | 700   | V                |                    |
| Maximum DC Blocking Voltage  | $V_{DC}$                | 50          | 100   | 200   | 300   | 400   | 600   | 800   | 1000  | V                |                    |
| Maximum Average Forward Rectified Current  | $I_{F(AV)}$             | 3.0         |       |       |       |       |       |       |       | A                |                    |
| Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load (JEDEC method) | $I_{FSM}$               | 100         |       |       |       |       |       |       |       | A                |                    |
| Maximum Instantaneous Forward Voltage at 3.0A  | $V_F$                   | 1.0         |       |       |       | 1.3   | 1.7   |       |       | V                |                    |
| Maximum DC Reverse Current at rated DC blocking voltage  | $T_A=25^\circ\text{C}$  | 5.0         |       |       |       |       |       |       |       | $\mu\text{A}$    |                    |
|  | $T_A=125^\circ\text{C}$ | 100         |       |       |       |       |       |       |       |                  |                    |
| Maximum reverse recovery time(Note1)   | $t_{rr}$                | 50          |       |       |       |       | 75    |       |       |                  | ns                 |
| Typical junction capacitance(Note2)  | $C_j$                   |             |       |       |       |       | 25    |       |       |                  | pF                 |
| Typical Thermal Resistance(Note3)  | $R_{\theta JA}$         |             |       |       |       |       | 75    |       |       |                  | $^\circ\text{C/W}$ |
|  | $R_{\theta JL}$         |             |       |       |       |       | 20    |       |       |                  |                    |
| Operating junction and storage temperature range   | $T_J, T_{STG}$          | -55 to +150 |       |       |       |       |       |       |       | $^\circ\text{C}$ |                    |

Note: 1. Test conditions:  $I_F=0.5A, I_R=1.0A, I_{RM}=0.25A$ .

2. Measured at 1MHz and applied reverse voltage of 4.0 Volts.

3. Units mounted on PCB 5.0 mm x 5.0 mm (0.013 mm thick) land areas

FIG.1-TYPICAL FORWARD CURRENT DERATING CURVE

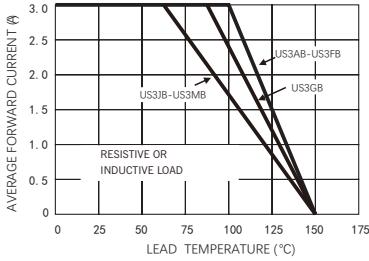


FIG.2-MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

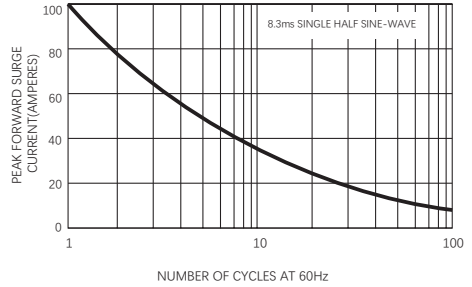


FIG.3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

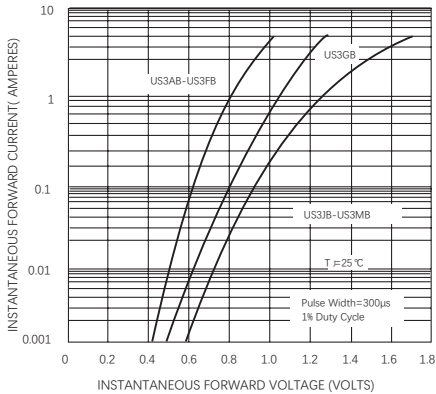


FIG.4-TYPICAL REVERSE CHARACTERISTICS

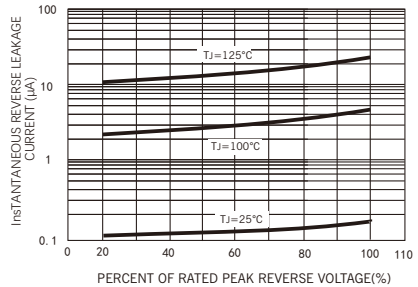


FIG.5-TYPICAL JUNCTION CAPACITANCE

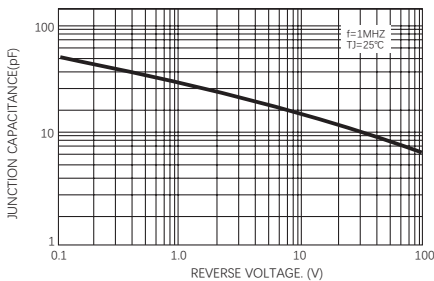
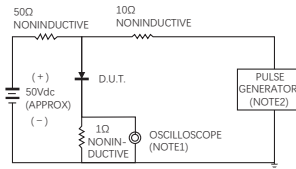
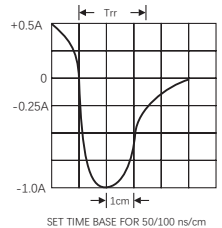


FIG.6-TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC



NOTES: 1. Rise Time=7ns max. input impedance=1 megohm 22pF  
2. Rise Time=10ns max. source impedance=50 ohms

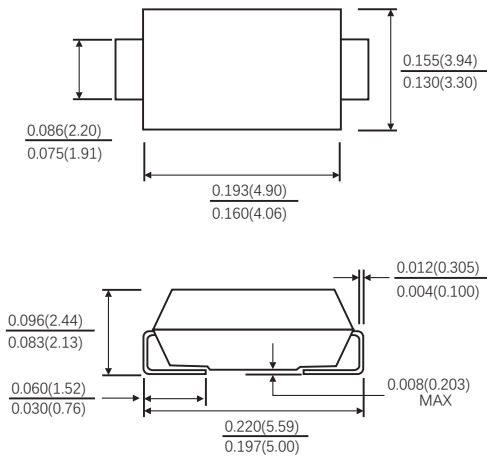


## AVAILABLE PACK INFORMATION

| Product code      | Pack | Reel Size (mm) | Quantity (pcs/reel) | Box Size L×W×H (mm) | Quantity (reel/box) | Carton Size L×W×H (mm) | Quantity (box/carton) | Quantity (carton) (K) |
|-------------------|------|----------------|---------------------|---------------------|---------------------|------------------------|-----------------------|-----------------------|
| US3AB...US3MB-SMB | T/R  | Φ330           | 3000                | 330×333×35          | 2                   | 370×370×360            | 8                     | 48                    |

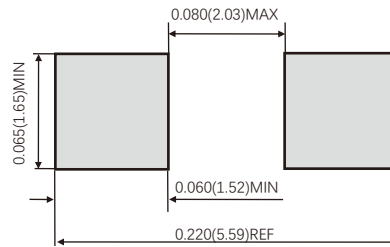
## PACKAGE OUTLINE DIMENSIONS

SMB(DO-214AA)



Dimensions in inches and (millimeters)

Suggested PAD Layout



## Friendship Reminder

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