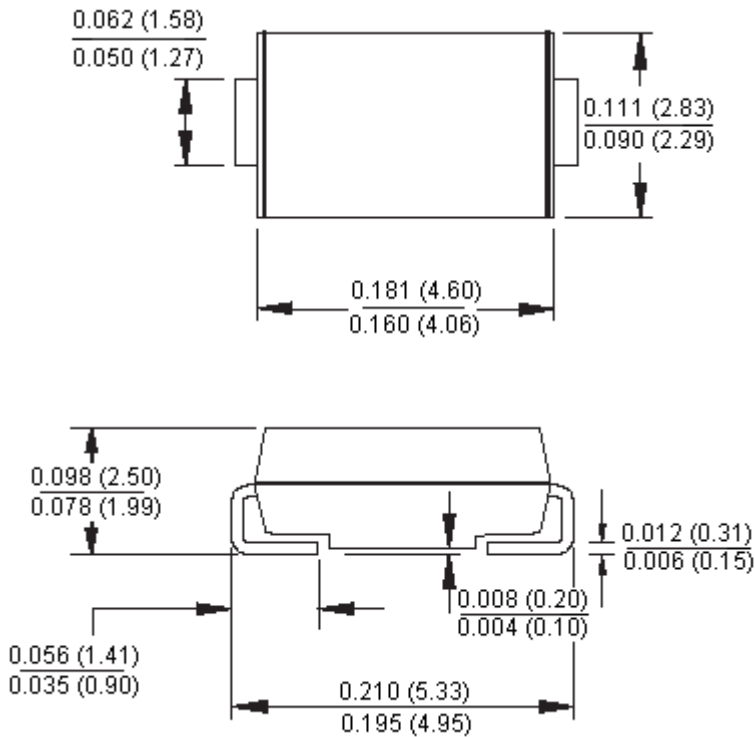




## Features:

- Glass passivated junction chip.
- For surface mounted application.
- Low profile package.
- Built-in strain relief.
- Ideal for automated placement.
- Easy pick and place.
- Ultrafast recovery time for high efficiency.
- Low forward voltage, low power loss.
- High temperature soldering guaranteed: 260oC/10 seconds on terminals.
- Plastic material.

## SMB/DO-214AC



Dimensions : Inches (Millimetres)

## Mechanical Data:

|           |                                                          |
|-----------|----------------------------------------------------------|
| Cases     | : Moulded plastic.                                       |
| Terminals | : Solder plated solderable per MIL-STD-750, Method 2026. |
| Polarity  | : Indicated by cathode band.                             |
| Weight    | : 0.064 gram.                                            |

## 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%.

| Type Number                                                                                                | Symbol                               | US1A        | US1B | US1D | US1G | US1J | US1K | US1M | Units    |
|------------------------------------------------------------------------------------------------------------|--------------------------------------|-------------|------|------|------|------|------|------|----------|
| Maximum Recurrent Peak Reverse Voltage                                                                     | V <sub>RRM</sub>                     | 50          | 100  | 200  | 400  | 600  | 800  | 1000 | V        |
| Maximum RMS Voltage                                                                                        | V <sub>RMS</sub>                     | 35          | 70   | 140  | 280  | 420  | 560  | 700  |          |
| Maximum DC Blocking Voltage                                                                                | V <sub>DC</sub>                      | 50          | 100  | 200  | 400  | 600  | 800  | 1000 |          |
| Maximum Average Forward Rectified Current at T <sub>L</sub> = 110°C                                        | I <sub>(AV)</sub>                    | 1.0         |      |      |      |      |      |      | A        |
| Peak Forward Surge Current, 8.3ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method )         | I <sub>FSM</sub>                     | 30          |      |      |      |      |      |      |          |
| Maximum Instantaneous Forward Voltage at 1.0A                                                              | V <sub>F</sub>                       | 1.0         |      |      |      | 1.7  |      |      | V        |
| Maximum DC Reverse Current at T <sub>A</sub> = 25°C at Rated DC Blocking Voltage at T <sub>A</sub> = 125°C | I <sub>R</sub>                       | 5.0<br>150  |      |      |      |      |      |      | μA<br>μA |
| Maximum Reverse Recovery Time (Note 1)                                                                     | T <sub>rr</sub>                      | 50          |      |      |      | 75   |      |      | pF       |
| Typical Junction Capacitance (Note 2)                                                                      | C <sub>j</sub>                       | 15          |      |      |      | 10   |      |      | °C/W     |
| Maximum Thermal Resistance (Note 3)                                                                        | R <sub>θJL</sub><br>R <sub>θJA</sub> | 75<br>27    |      |      |      |      |      |      | °C       |
| Operating Temperature Range                                                                                | T <sub>J</sub>                       | -55 to +150 |      |      |      |      |      |      |          |
| Storage Temperature Range                                                                                  | T <sub>STG</sub>                     | -55 to +150 |      |      |      |      |      |      |          |

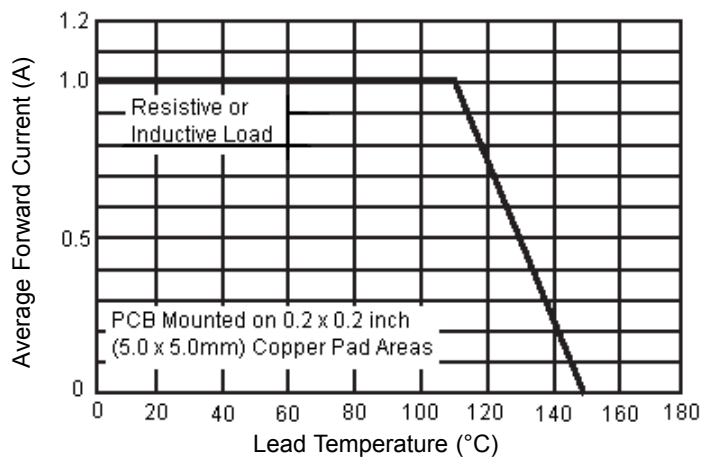
Notes: 1. Reverse Recovery Test Conditions:  $I_F = 0.5\text{A}$ ,  $I_R = 1.0\text{A}$ ,  $I_{RR} = 0.25\text{A}$ .

2. Measured at 1MHz and Applied  $V_R = 4.0\text{Volts}$ .

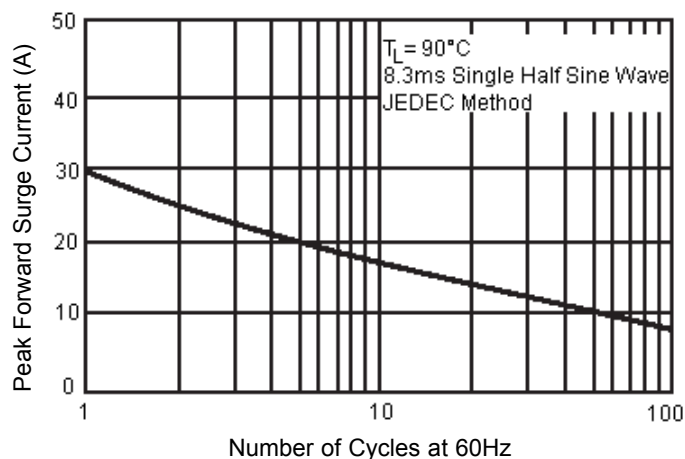
3. PCB Mounted on 0.2 x 0.2 inches (5.0 x 5.0mm) Copper Pad Area.

## Ratings and Characteristic Curves (US1A, US1B, US1D, US1G, US1J, US1K, US1M)

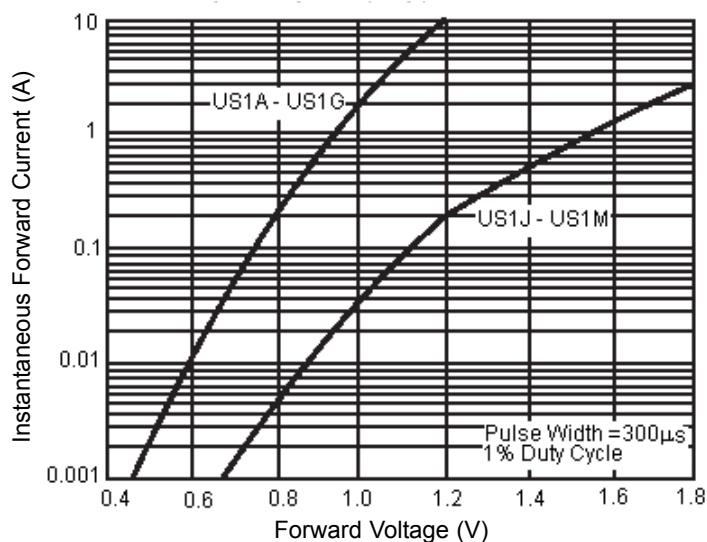
Maximum Forward Current Derating Curve



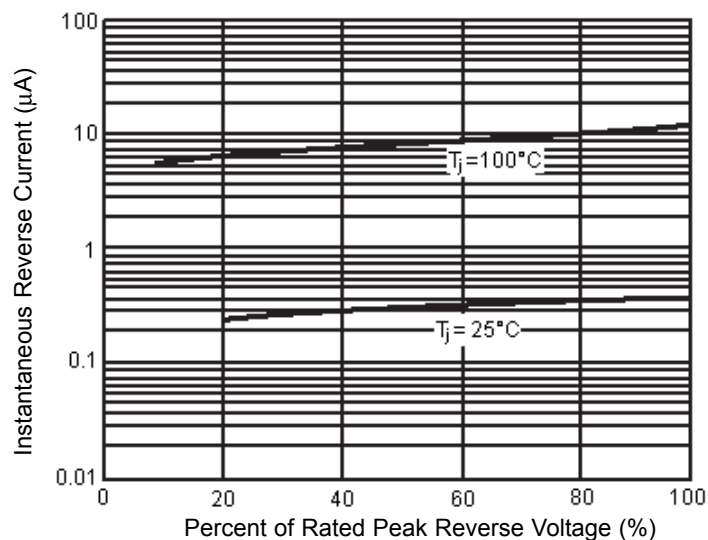
Maximum Non-Repetitive Forward Surge Current



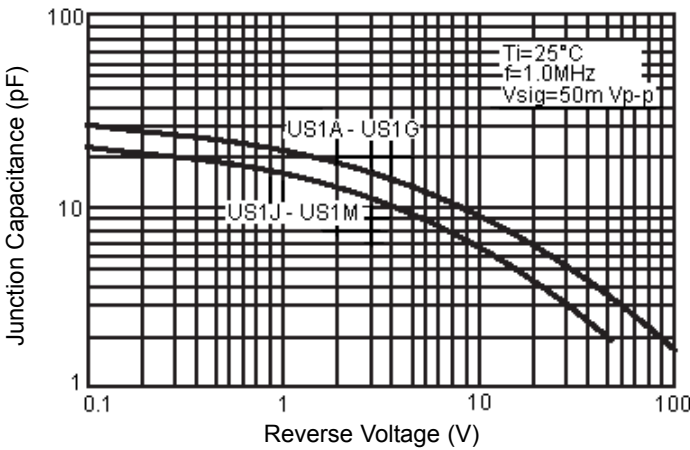
Typical Instantaneous Forward Characteristics



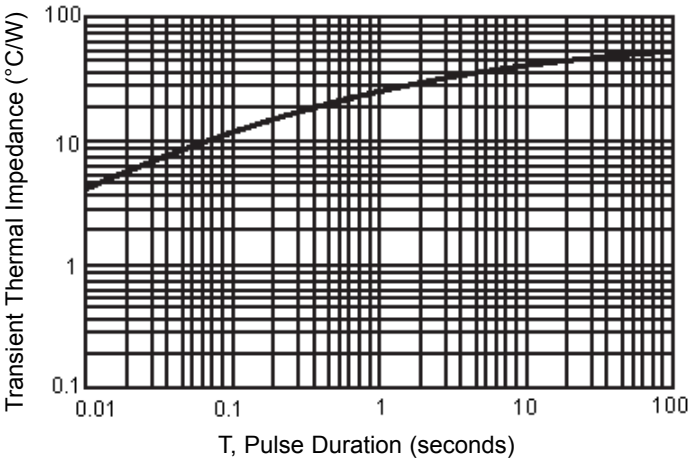
Typical Reverse Characteristics



Typical Junction Capacitance



Typical Transient Thermal



## Part Number Table

| Description                  | Part Number |
|------------------------------|-------------|
| Diode, Ultra-Fast, 1A, 50V   | US1A        |
| Diode, Ultra-Fast, 1A, 100V  | US1B        |
| Diode, Ultra-Fast, 1A, 200V  | US1D        |
| Diode, Ultra-Fast, 1A, 400V  | US1G        |
| Diode, Ultra-Fast, 1A, 600V  | US1J        |
| Diode, Ultra-Fast, 1A, 800V  | US1K        |
| Diode, Ultra-Fast, 1A, 1000V | US1M        |

## Notes:

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