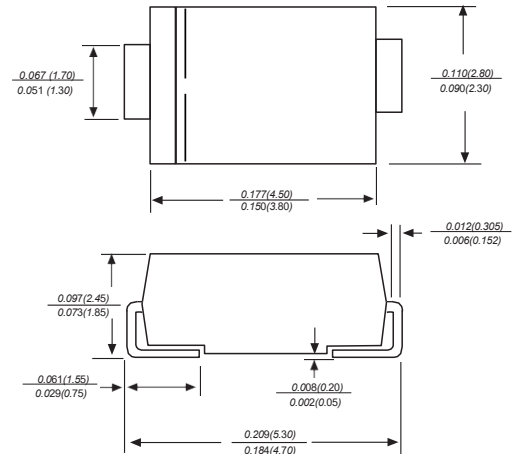


## SURFACE MOUNT ULTRA FAST RECTIFIER

### Features

- ◆ The plastic package carries Underwriters Laboratory Flammability Classification 94V-0
- ◆ For surface mounted applications
- ◆ Ultra fast switching for high efficiency
- ◆ Low reverse leakage
- ◆ Built-in strain relief, ideal for automated placement
- ◆ High forward surge current capability
- ◆ High temperature soldering guaranteed  
250 °C/10 seconds at terminals

### DO-214AC/SMA



Dimensions in inches and (millimeters)

### Maximum Ratings And Electrical Characteristics

Ratings at 25°C ambient temperature unless otherwise specified.

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

| Parameter                                                                                              | SYMBOLS                           | US1A        | US1B | US1D | US1G | US1J | US1K | US1M | UNITS |
|--------------------------------------------------------------------------------------------------------|-----------------------------------|-------------|------|------|------|------|------|------|-------|
| Marking Code                                                                                           |                                   |             |      |      |      |      |      |      |       |
| Maximum repetitive 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  | V     |
| Maximum DC blocking voltage                                                                            | V <sub>DC</sub>                   | 50          | 100  | 200  | 400  | 600  | 800  | 1000 | V     |
| Maximum average forward rectified current at TL=125°C                                                  | I <sub>(AV)</sub>                 | 1.0         |      |      |      |      |      |      | A     |
| Peak forward surge current<br>8.3ms single half sine-wave<br>superimposed on rated load (JEDEC Method) | I <sub>FSM</sub>                  | 30          |      |      |      |      |      |      | A     |
| Maximum instantaneous forward voltage at 1.0A                                                          | V <sub>F</sub>                    | 1.0         |      |      | 1.30 | 1.70 |      |      | V     |
| Maximum DC reverse current    TA=25°C<br>at rated DC blocking voltage    TA=125°C                      | I <sub>R</sub>                    | 5<br>100    |      |      |      |      |      |      | uA    |
| Maximum reverse recovery time    (NOTE 1)                                                              | t <sub>rr</sub>                   | 50          |      |      |      | 75   |      |      | ns    |
| Typical junction capacitance (NOTE 3)                                                                  | C <sub>J</sub>                    | 15.0        |      |      |      |      |      |      | pF    |
| Typical thermal resistance (NOTE 2)                                                                    | RθJA                              | 55.0        |      |      |      |      |      |      | °C/W  |
|                                                                                                        | RθJC                              | 11.0        |      |      |      |      |      |      |       |
| Operating junction and storage temperature range                                                       | T <sub>J</sub> , T <sub>STG</sub> | -55 to +150 |      |      |      |      |      |      | °C    |

**Note:** 1. Reverse recovery condition  $I_F=0.5\text{A}$ ,  $I_R=1.0\text{A}$ ,  $t_{rr}=0.25\text{A}$   
 2. P.C.B. mounted with 2.0x2.0" (5.0x5.0cm) copper pad areas.  
 3. Measured at 1MHz and applied reverse voltage of 4.0V D.C.

## Ratings And Characteristic Curves

Fig.1 Forward Current Derating Curve

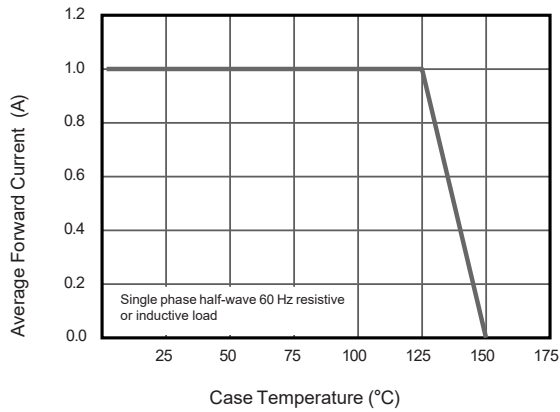


Fig.2 Typical Reverse Characteristics

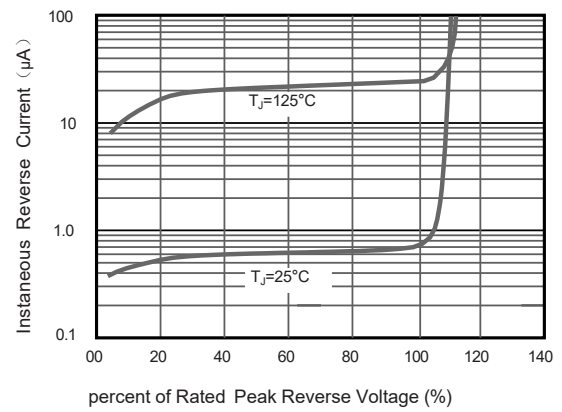


Fig.3 Typical Forward Characteristics

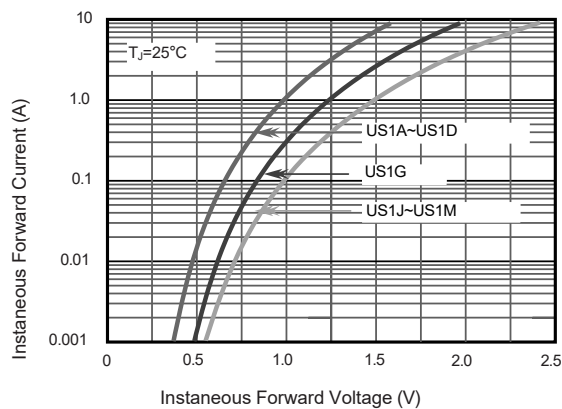


Fig.4 Maximum Non-Repetitive Peak Forward Surge Current

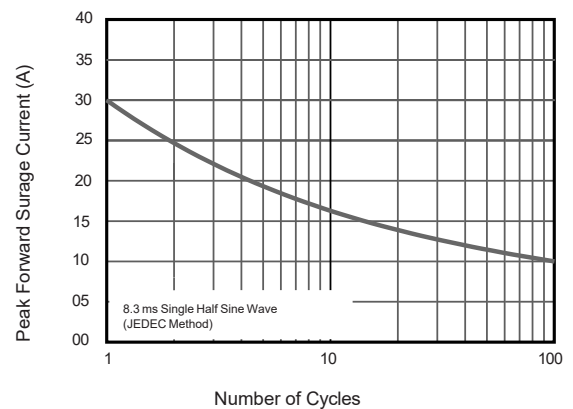


Fig.5- Typical Transient Thermal Impedance

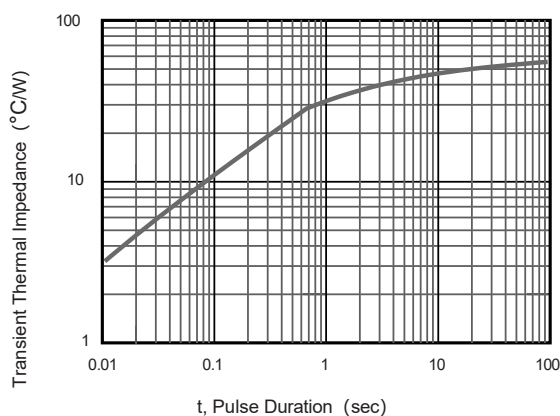
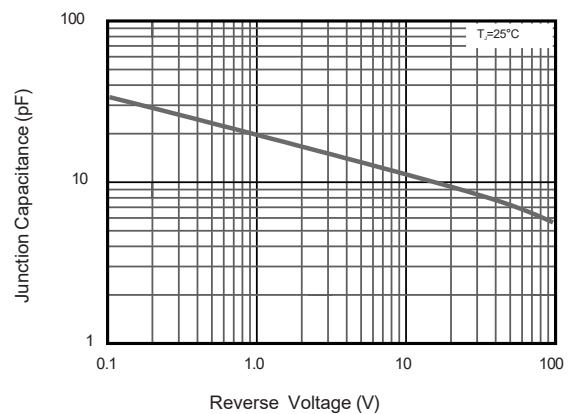


Fig.6 Typical Junction Capacitance



The curve above is for reference only.