



# Ultra Fast Rectifier

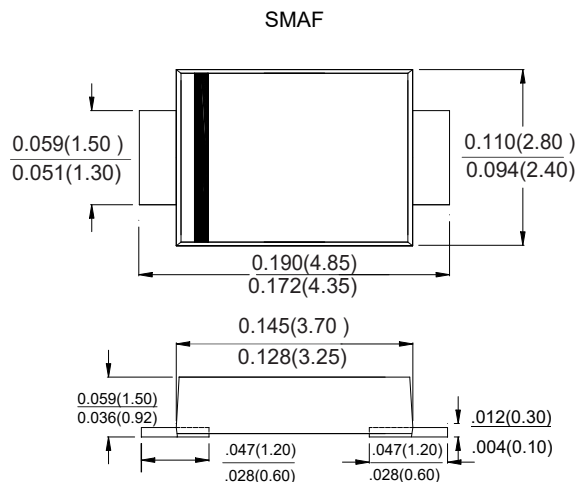
## US2AF-A THRU US2MF-A 50 to 1000 V 2.0A

### FEATURES

- For surface mounted applications
- Low profile package
- Built-in strain relief
- Easy pick and place
- Fast Recovery times for high efficiency
- Plastic package has Underwriters Laboratory
- Flammability Classification 94V-O
- High temperature soldering : 260°C /10 seconds at terminals

### MECHANICAL DATA

- Case: Molded plastic, SMAF
- Terminals: Solder Plated, Solderable per MIL-STD-750, Method 2026
- Polarity: Cathode Band or Cathode Notch
- Marking: Type Number



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, derate current by 20%.

| Type Number or marks                                                                                   | Symbols | US<br>2AF   | US<br>2BF | US<br>2CF | US<br>2DF | US<br>2J F | US<br>2KF | US<br>2MF | Units |
|--------------------------------------------------------------------------------------------------------|---------|-------------|-----------|-----------|-----------|------------|-----------|-----------|-------|
| Maximum Recurrent Peak Reverse Voltage                                                                 | VRRM    | 50          | 100       | 200       | 400       | 600        | 800       | 1000      | Volts |
| Maximum RMS Voltage                                                                                    | VRMS    | 35          | 70        | 140       | 280       | 420        | 560       | 700       | Volts |
| Maximum DC Blocking Voltage                                                                            | VDC     | 50          | 100       | 200       | 400       | 600        | 800       | 1000      | Volts |
| Maximum Average Forward Rectified Current.<br>Lead Length @Ta(Fig 1)                                   | I(AV)   | 2.0         |           |           |           |            |           |           | Amp   |
| Peak Forward Surge Current,8.3ms single<br>half-sine-wave superimposed on rated load<br>(JEDEC method) | IFSM    | 60          |           |           |           |            |           |           | Amp   |
| Maximum Forward Voltage at 2.0A                                                                        | VF      | 1.0         |           |           | 1.3       |            | 1.7       |           | Volts |
| Maximum DC reverse current at<br>rated DC blocking voltage per<br>Tj=25℃<br>Tj=100℃                    | IR      | 5.0<br>100  |           |           |           |            |           |           | uAmp  |
| Typical Thermal Resistance                                                                             | Rθ JA   | 60          |           |           |           |            |           |           | ℃/W   |
| Typical Junction capacitance (Note2)                                                                   | CJ      | 20          |           |           |           |            |           |           | pF    |
| Maximum Thermal Resistance (Note1)                                                                     | TRR     | 50          |           |           |           | 75         |           |           | nS    |
| Operating Temperature Range                                                                            | TJ      | -55 to +150 |           |           |           |            |           |           | ℃     |
| Storage Temperature Range                                                                              | TSTG    | -55 to +150 |           |           |           |            |           |           | ℃     |

### NOTES:

1. Measured with  $I_F = 0.5\text{A}$ ,  $I_R = 1\text{A}$ ,  $I_{RR} = 0.25\text{A}$ .
2. Measured at 1.0 MHz and applied reverse voltage of 4.0 V DC.
3. The typical data above is for reference only.



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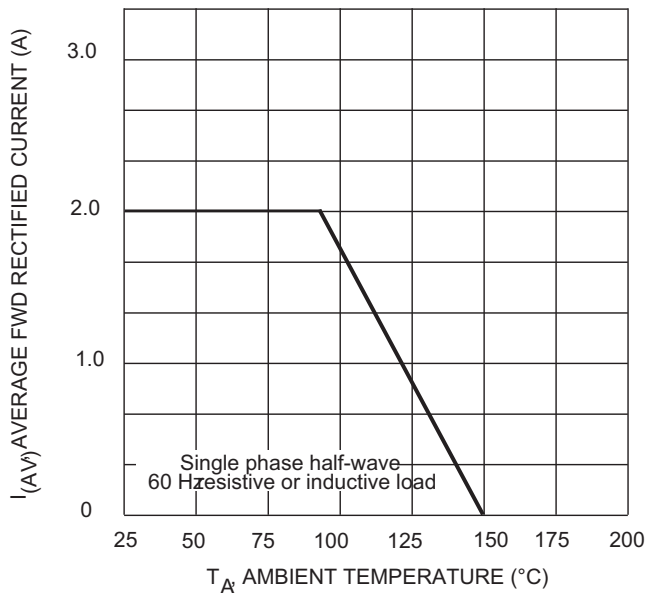


Fig. 1 Forward Derating Curve

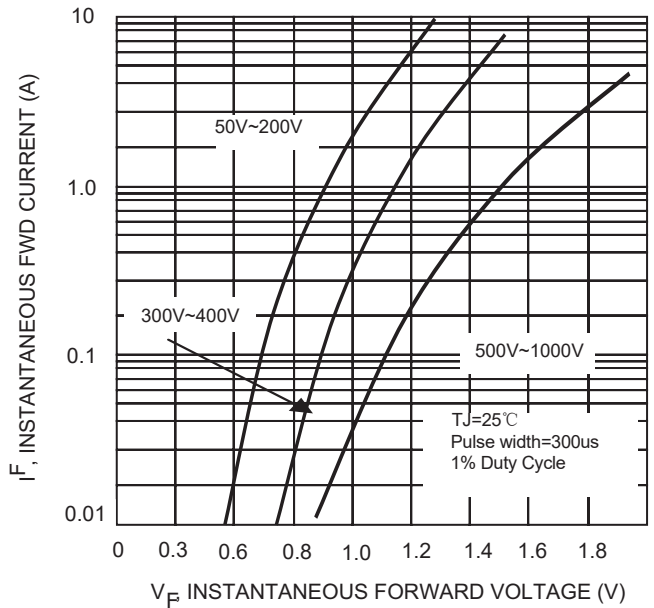


Fig. 2 Typical Forward Characteristics

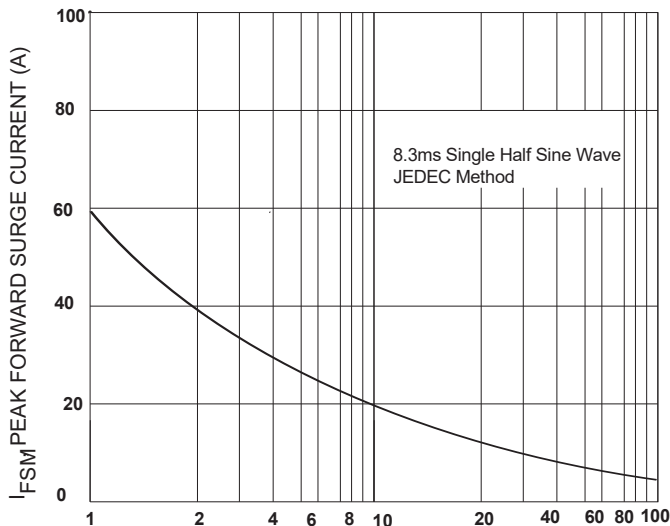


Fig. 3 Peak Forward Surge Current

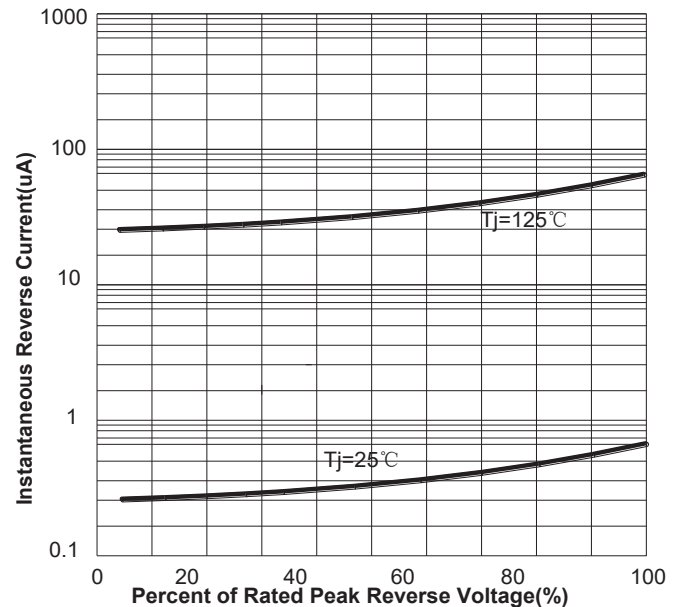
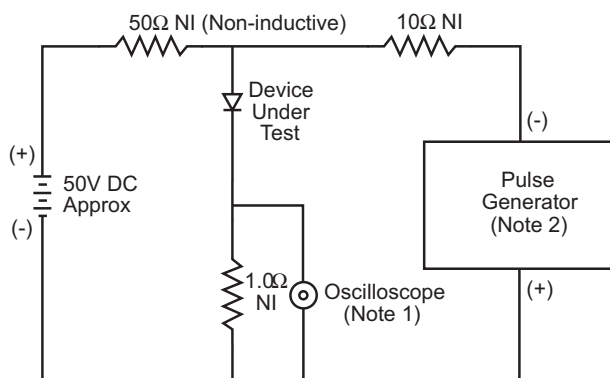


FIG4: Typical Reverse Characteristics



- Notes:
1. Rise Time=7ns max .Input Impedance=1MΩ 22pf
  2. Rise Time=10ns max.Source Impedance=50Ω

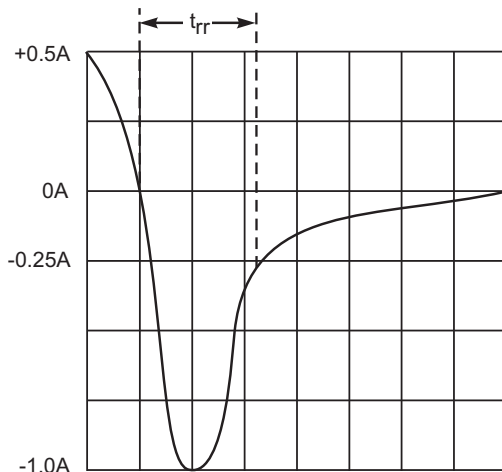


Fig. 5 Reverse Recovery Time Characteristic and Test Circuit