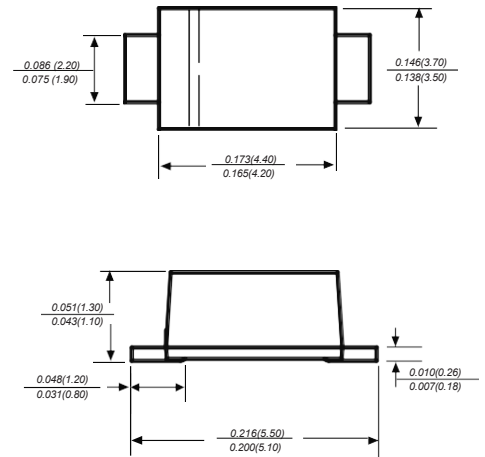


## SURFACE MOUNT ULTRA FAST RECTIFIER

### 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

### SMBF



Dimensions in inches and (millimeters)

### Maximum Ratings And Electrical Characteristics

Ratings at 25°C ambient temperature unless otherwise specified.

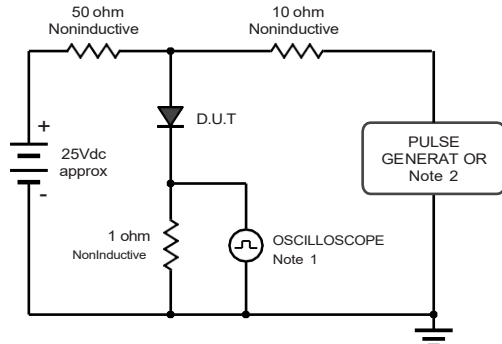
Single phase half-wave 60Hz, resistive or inductive load, for capacitive load current derate by 20%.

| Parameter                                                                                             | SYMBOLS           | US5ABF       | US5BBF | US5DBF | US5GBF | US5JBF | US5KBF | US5MBF | UNITS |
|-------------------------------------------------------------------------------------------------------|-------------------|--------------|--------|--------|--------|--------|--------|--------|-------|
| Marking Code                                                                                          |                   | U5AB         | U5BB   | U5DB   | U5GB   | U5JB   | U5KB   | U5MB   |       |
| 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=55°C                                                  | I <sub>(AV)</sub> | 5.0          |        |        |        |        |        |        | A     |
| Peak forward surge current<br>8.3ms single half sine-wave<br>superimposed onrated load (JEDEC Method) | I <sub>FSM</sub>  | 125          |        |        |        |        |        |        | A     |
| Maximum instantaneous forward voltage at 5.0A                                                         | V <sub>F</sub>    | 1.0          |        |        | 1.30   | 1.60   |        |        | V     |
| Maximum DC reverse current    TA=25°C<br>at rated DCblocking voltage    TA=125°C                      | I <sub>R</sub>    | 5.0<br>150.0 |        |        |        |        |        |        | μA    |
| Maximum reverse recovery time                                                                         | t <sub>rr</sub>   | 50           |        |        |        | 75     |        |        | ns    |
| Typical thermal resistance                                                                            | RθJA              | 56.0         |        |        |        |        |        |        | °C/W  |
| Operating junction and storage temperature range                                                      | TJ, TSTG          | -55 to +150  |        |        |        |        |        |        | °C    |

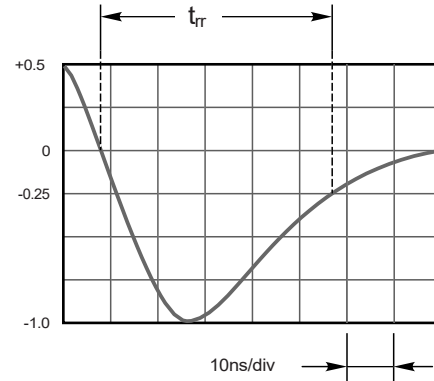
**Note:** 1. Reverse recovery condition  $I_F=0.5\text{A}, I_R=1.0\text{A}, t_{rr}=0.25\text{A}$   
 2. Measured at 1MHz and applied reverse voltage of 4.0V D.C.  
 3. P.C.B. mounted with 0.5x0.5" (12.5x12.7mm) copper pad areas

## Ratings And Characteristic Curves

**Fig.1 Reverse Recovery Time Characteristic And Test Circuit Diagram**

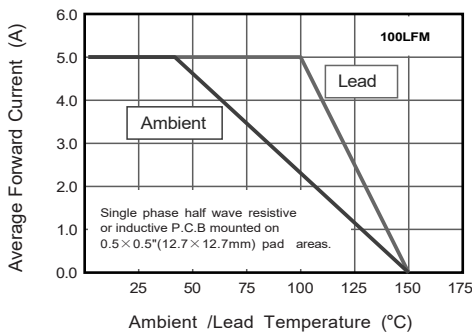


Note: 1. Rise Time = 7ns, max.  
Input Impedance = 1megohm, 22pF.  
2. Rise Time = 10ns, max.  
Source Impedance = 50 ohms.

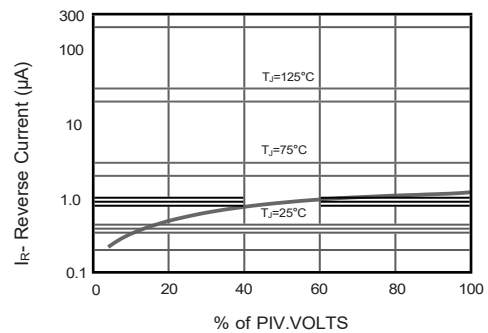


Set time Base for 10ns/div

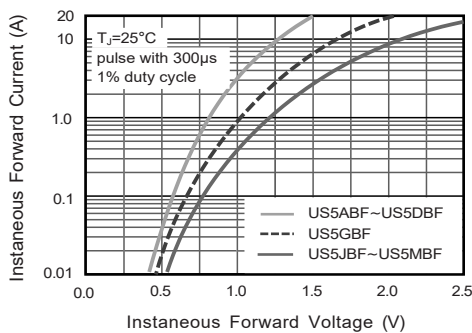
**Fig.2 Maximum Average Forward Current Rating**



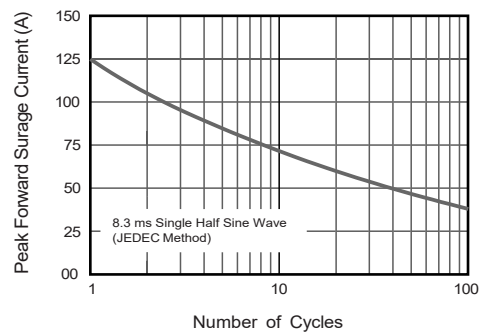
**Fig.3 Typical Reverse Characteristics**



**Fig.3 Typical Instantaneous Forward Characteristics**



**Fig.4 Maximum Non-Repetitive Peak Forward Surge Current**



The curve above is for reference only.