



# US1ABF THRU US1MBF

## Surface Mount Ultra Fast Rectifiers

Reverse Voltage – 50V~1000 V

Forward Current – 1.0 A

### FEATURES

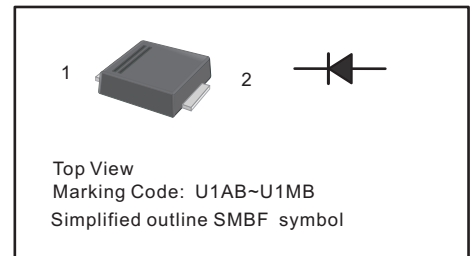
- For surface mounted applications
- Low profile package
- Glass Passivated Chip Junction
- Superfast reverse recovery time
- Lead free in comply with EU RoHS 2011/65/EU directives

### MECHANICAL DATA

- Case: SMBF
- Terminals: Solderable per MIL-STD-750, Method 2026
- Approx. Weight: 57mg / 0.002oz

### PINNING

PIN	DESCRIPTION
1	Cathode
2	Anode



### Maximum Ratings and Electrical characteristics

Ratings at 25 °C ambient temperature unless otherwise specified.

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

Parameter	Symbols	US1ABF	US1BBF	US1DBF	US1GBF	US1JBF	US1KBF	US1MBF	Units	
Maximum Repetitive Peak Reverse Voltage	$V_{RRM}$	50	100	200	400	600	800	1000	V	
Maximum RMS voltage	$V_{RMS}$	35	70	140	280	420	560	700	V	
Maximum DC Blocking Voltage	$V_{DC}$	50	100	200	400	600	800	1000	V	
Maximum Average Forward Rectified Current at $T_c = 125^\circ\text{C}$	$I_{F(AV)}$	1							A	
Peak Forward Surge Current 8.3 ms Single Half Sine Wave Superimposed on Rated Load	$I_{FSM}$	30							A	
Maximum Instantaneous Forward Voltage at 1 A	$V_F$	1.0		1.3		1.65			V	
Maximum DC Reverse Current $T_a = 25^\circ\text{C}$ at Rated DC Blocking Voltage $T_a = 125^\circ\text{C}$	$I_R$	5 100							$\mu\text{A}$	
Maximum Reverse Recovery Time <sup>(1)</sup>	$t_{rr}$	50				75				ns
Typical Thermal Resistance <sup>(2)</sup>	$R_{\theta JA}$	75							$^\circ\text{C}/\text{W}$	
Operating and Storage Temperature Range	$T_j, T_{stg}$	-55 ~ +150							$^\circ\text{C}$	

( 1 ) Measured with  $I_F = 0.5\text{ A}$ ,  $I_R = 1\text{ A}$ ,  $I_r = 0.25\text{ A}$ .

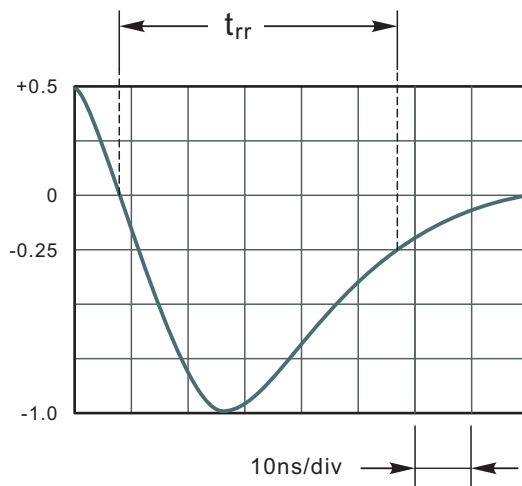
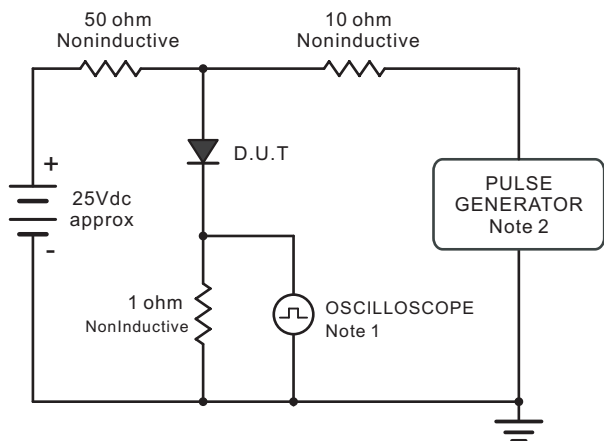
( 2 ) P.C.B. mounted with 2.0" X 2.0" (5 X 5 cm) copper pad areas.



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## Characteristic Curves ( $T_A=25^\circ\text{C}$ unless otherwise noted)

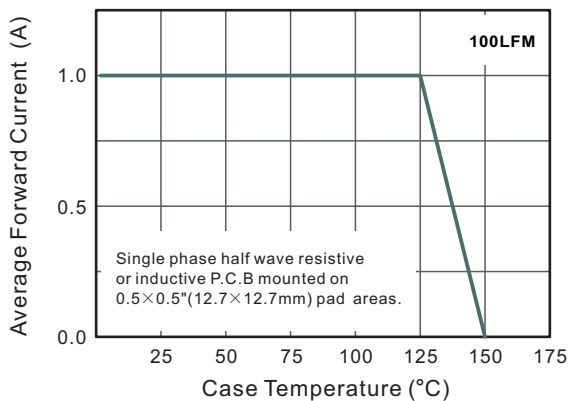
**Fig.1 Reverse Recovery Time Characteristic And Test Circuit Diagram**



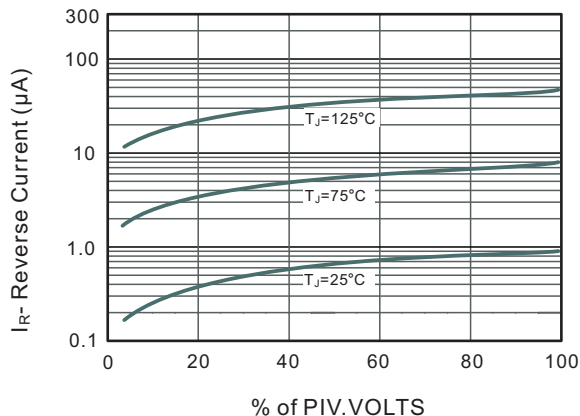
Note: 1. Rise Time = 7ns, max.  
Input Impedance = 1megohm, 22pF.  
2. Rises Time = 10ns, max.  
Source Impedance = 50 ohms.

Set time Base for 10ns/div

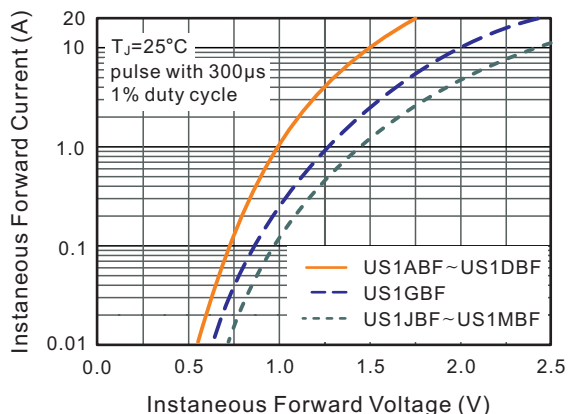
**Fig.2 Maximum Average Forward Current Rating**



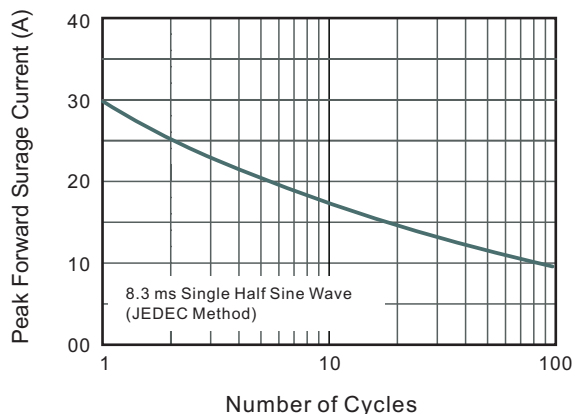
**Fig.3 Typical Reverse Characteristics**



**Fig.3 Typical Instantaneous Forward Characteristics**



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





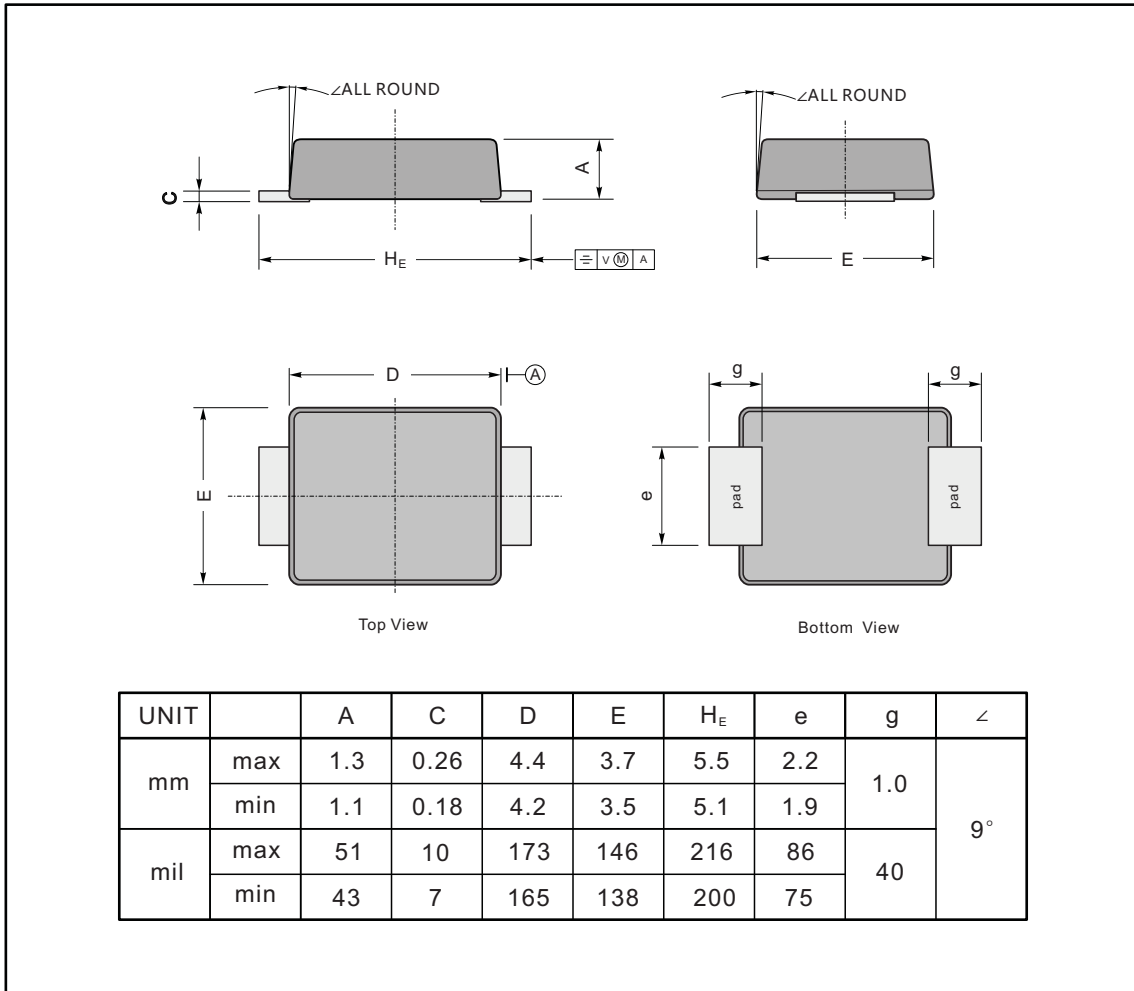
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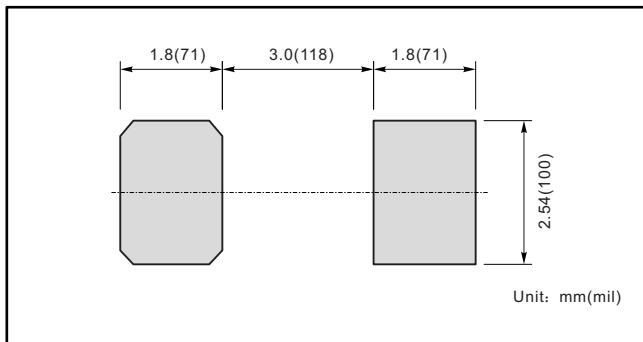
### PACKAGE OUTLINE

Plastic surface mounted package; 2 leads

SMBF



### The recommended mounting pad size



### Marking

Type number	Marking code
US1ABF	U1AB
US1BBF	U1BB
US1DBF	U1DB
US1GBF	U1GB
US1JBF	U1JB
US1KBF	U1KB
US1MBF	U1MB