

## Surface Mount Ultrafast Recovery Rectifier 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

## 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 %.

### PINNING

PIN	DESCRIPTION
1	Cathode
2	Anode



Parameter	Symbols	US2ABF	US2BBF	US2DBF	US2GBF	US2JBF	US2KBF	US2MBF	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 $T_a = 65^\circ\text{C}$	$I_{F(AV)}$	2							A
Peak Forward Surge Current 8.3 ms Single Half Sine Wave Superimposed on Rated Load (JEDEC Method)	$I_{FSM}$	55				50			A
Maximum Instantaneous Forward Voltage at 2A	$V_F$	1.0		1.3		1.6			V
Maximum DC Reverse Current at Rated DC Blocking Voltage $T_a = 25^\circ\text{C}$ $T_a = 125^\circ\text{C}$	$I_R$					5 100			$\mu\text{A}$
Typical Junction Capacitance <sup>1)</sup>	$C_j$	60							pF
Maximum Reverse Recovery Time <sup>2)</sup>	$t_{rr}$	50				75			ns
Typical Thermal Resistance <sup>3)</sup>	$R_{\theta JA}$ $R_{\theta JL}$					60 20			$^\circ\text{C}/\text{W}$
Operating and Storage Temperature Range	$T_j, T_{stg}$	-55 ~ +150							$^\circ\text{C}$

1) Measured at 1 MHz and applied reverse voltage of 4 V D.C. 2) Measured with  $I_F = 0.5\text{ A}$ ,  $I_R = 1\text{ A}$ ,  $I_{rr} = 0.25\text{ A}$

3) P.C.B. mounted with 0.5 X 0.5" (12.7 X 12.7 mm) copper pad areas.

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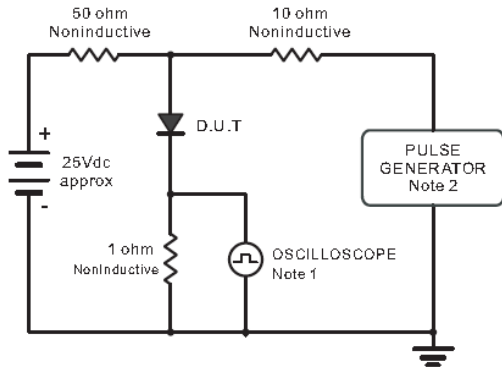
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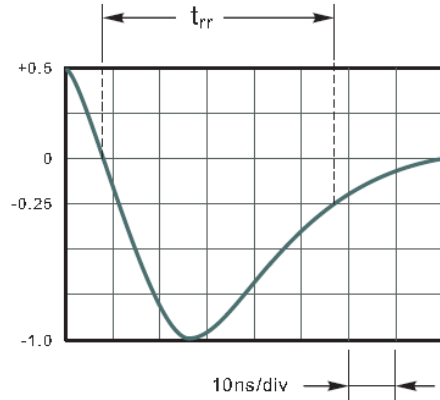


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**Fig.1 Reverse Recovery Time Characteristic And Test Circuit Diagram**

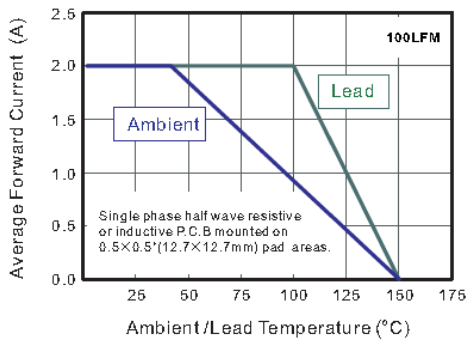


Note: 1. Rise Time = 7ns, max.  
Input Impedance = 1 megohm, 22pF.  
2. Rise Time = 10ns, max.  
Source Impedance = 50 ohms.

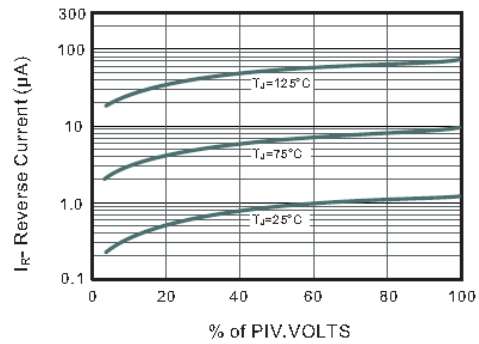


Set time Base for 10ns/div

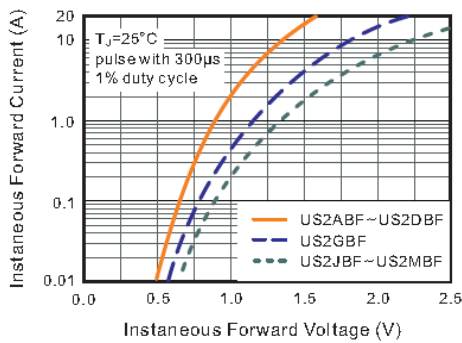
**Fig.2 Maximum Average Forward Current Rating**



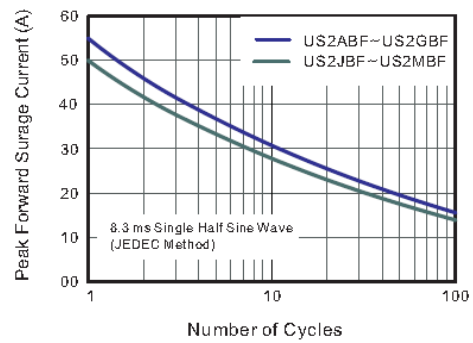
**Fig.3 Typical Reverse Characteristics**



**Fig.3 Typical Instantaneous Forward Characteristics**



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



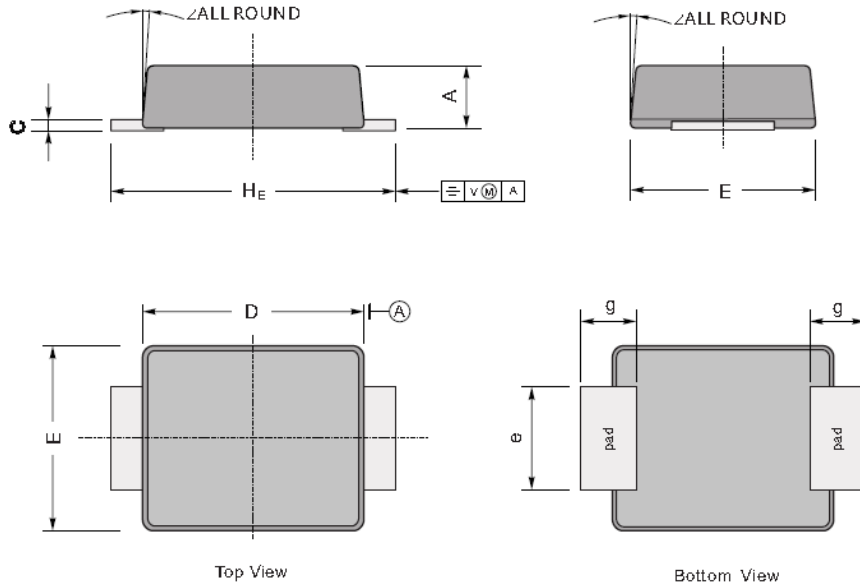
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## PACKAGE OUTLINE

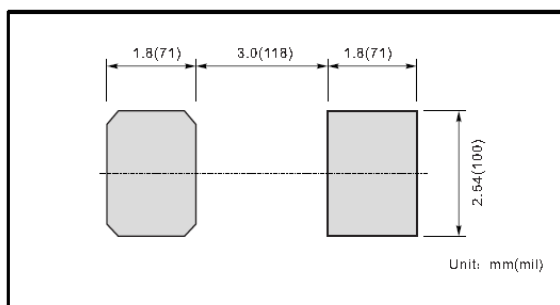
Plastic surface mounted package; 2 leads

SMBF



UNIT		A	C	D	E	$H_E$	e	g	$\angle$
mm	max	1.3	0.26	4.4	3.7	5.5	2.2	1.0	9°
	min	1.1	0.18	4.2	3.5	5.1	1.9		
mil	max	51	10	173	146	216	86	40	
	min	43	7	165	138	200	75		

### The recommended mounting pad size



### Marking

Type number	Marking code
US2ABF	U2AB
US2BBF	U2BB
US2DBF	U2DB
US2GBF	U2GB
US2JBF	U2JB
US2KBF	U2KB
US2MBF	U2MB

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