

## Surface Mount Ultrafast Recovery Rectifier FEATURES

Reverse Voltage – 50V~1000 V

Forward Current – 3.0 A

- 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                            | US3ABF     | US3BBF | US3DBF | US3GBF | US3JBF | US3KBF | US3MBF | 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 $T_a = 65^\circ\text{C}$  | $I_{F(AV)}$                        | 3          |        |        |        |        |        |        | A                  |    |
| Peak Forward Surge Current 8.3 ms Single Half Sine Wave Superimposed on Rated Load (JEDEC Method)                | $I_{FSM}$                          | 100        |        |        |        |        |        |        | A                  |    |
| Maximum Instantaneous Forward Voltage at 3 A   | $V_F$                              | 1.0        |        | 1.3    |        | 1.6    |        |        | V                  |    |
| Maximum DC Reverse Current at Rated DC Blocking Voltage<br>$T_a = 25^\circ\text{C}$<br>$T_a = 125^\circ\text{C}$ | $I_R$                              | 5<br>100   |        |        |        |        |        |        | $\mu\text{A}$      |    |
| Typical Junction Capacitance <sup>1)</sup>   | $C_j$                              | 75         |        |        |        |        |        |        | pF                 |    |
| Maximum Reverse Recovery Time <sup>2)</sup>  | $t_{rr}$                           | 50         |        |        |        | 75     |        |        |                    | ns |
| Typical Thermal Resistance <sup>3)</sup>   | $R_{\theta JA}$<br>$R_{\theta JL}$ | 55<br>16   |        |        |        |        |        |        | $^\circ\text{C/W}$ |    |
| 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.

SHIKE MAKE CONSCIOUS PRODUCT

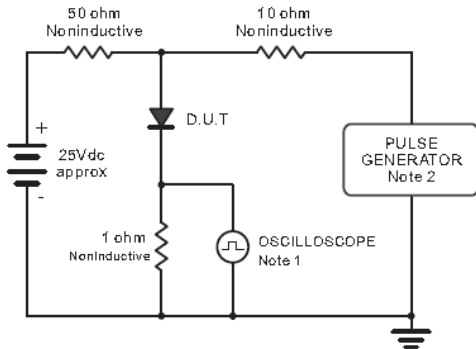
CONSCIOUS PRODUCTS BEGIN WITH CONSCIOUS PEOPLE

REV.07

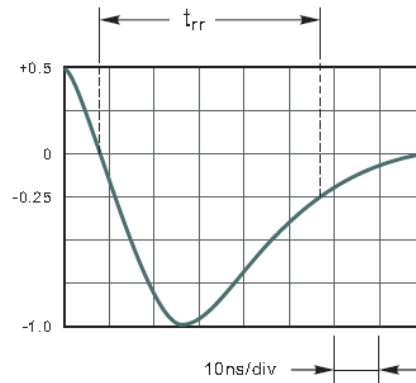


www.shike.tw

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

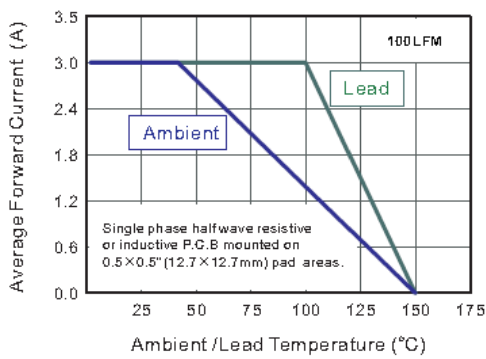


Note: 1. Rise Time = 7ns, max.  
Input Impedance = 1megohm, 22pF.  
2. Rises Time = 10ns, max.  
Source Impedance = 50 ohms.

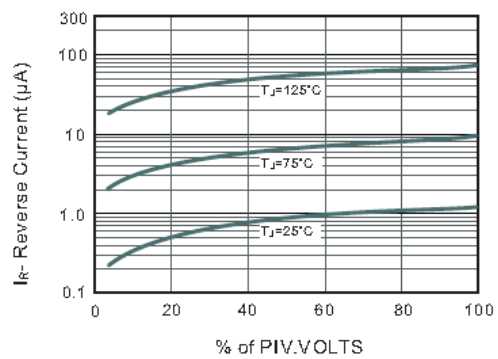


Set time Base for 10ns/div

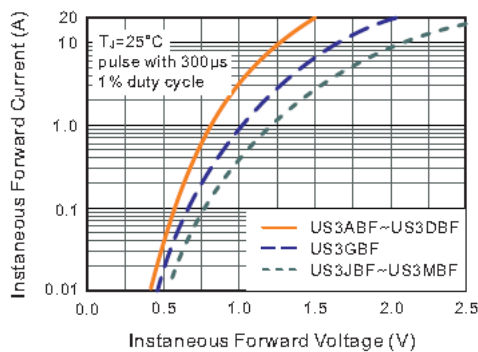
**Fig.2 Maximum Average Forward Current Rating**



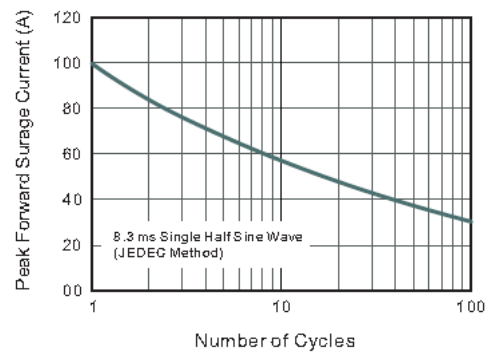
**Fig.3 Typical Reverse Characteristics**



**Fig.3 Typical Instantaneous Forward Characteristics**



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



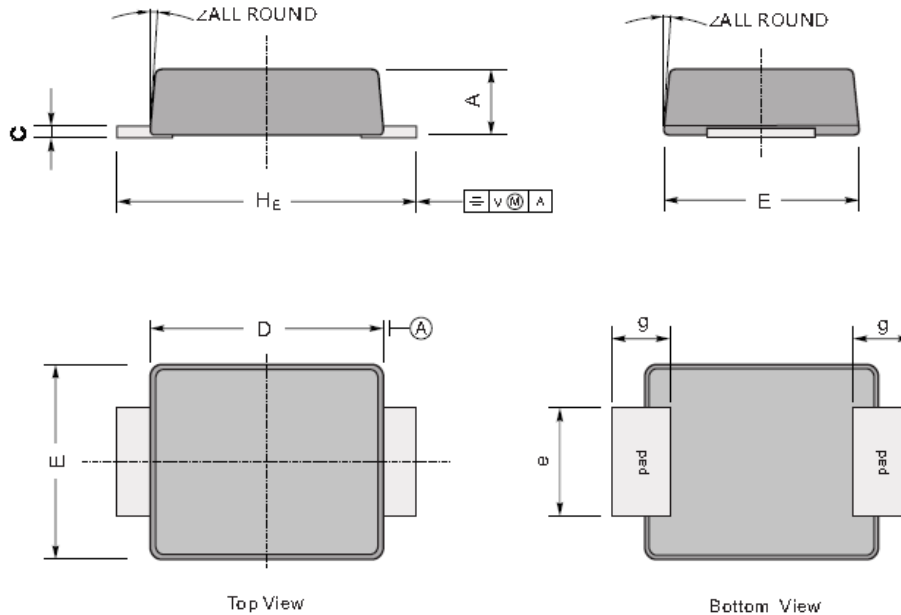
SHIKE MAKE CONSCIOUS PRODUCT  
CONSCIOUS PRODUCTS BEGIN WITH CONSCIOUS PEOPLE



## PACKAGE OUTLINE

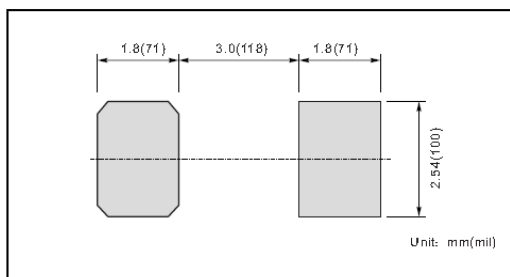
Plastic surface mounted package; 2 leads

SMBF



| UNIT |     | A   | C    | D   | E   | H <sub>E</sub> | e   | g   | ∠  |
|------|-----|-----|------|-----|-----|----------------|-----|-----|----|
| 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 |
|-------------|--------------|
| US3ABF      | U3AB         |
| US3BBF      | U3BB         |
| US3DBF      | U3DB         |
| US3GBF      | U3GB         |
| US3JBF      | U3JB         |
| US3KBF      | U3KB         |
| US3MBF      | U3MB         |

SHIKE MAKE CONSCIOUS PRODUCT  
CONSCIOUS PRODUCTS BEGIN WITH CONSCIOUS PEOPLE

REV.07



www.shike.tw

## X-ON Electronics

Largest Supplier of Electrical and Electronic Components

*Click to view similar products for [Rectifiers](#) category:*

*Click to view products by [Shikues](#) manufacturer:*

Other Similar products are found below :

[70HFR40](#) [FR105 R0](#) [RL252-TP](#) [DLA11C-TR-E](#) [DSA17G](#) [150KR30A](#) [1N5397](#) [1N4002G](#) [1N4005-TR](#) [UFS120Je3/TR13](#) [JANS1N6640US](#)  
[481235F](#) [RRE02VS6SGTR](#) [067907F](#) [MS306](#) [70HF40](#) [T110HF60](#) [T85HFL60S02](#) [US2JFL-TP](#) [A1N5404G-G](#) [CRS04\(T5L,TEMQ\)](#)  
[CRS12\(T5L,TEMQ\)](#) [ACGRB207-HF](#) [CLH07\(TE16L,Q\)](#) [CLH03\(TE16L,Q\)](#) [ACGRC307-HF](#) [ACEFC304-HF](#) [NTE6356](#) [NTE6359](#) [85HFR60](#)  
[40HFR60](#) [70HF120](#) [85HFR80](#) [D126A45C](#) [SCF7500](#) [D251N08B](#) [SCHJ22.5K](#) [SM100](#) [SCPA2](#) [SDHD5K](#) [VS-12FL100S10](#) [ACGRA4001-](#)  
[HF](#) [ACURA107-HF](#) [D1821SH45T PR](#) [D1251S45T](#) [NTE6358](#) [NTE5850](#) [NTE5819](#) [NTE5837](#) [NTE5892](#)