



**SURFACE MOUNT ULTRAFAST RECOVERY RECTIFIER**

**Reverse Voltage - 50 to 1000 V**

**Forward Current - 1 A**

**FEATURES**

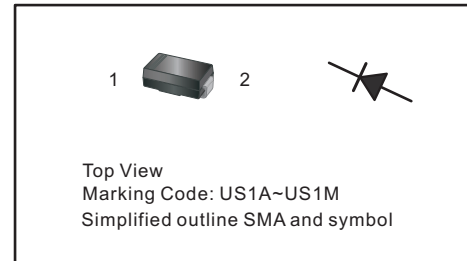
- For surface mounted applications
- Low profile package
- Glass Passivated Chip Junction
- Easy to pick and place
- High efficiency
- Lead free in comply with EU RoHS 2011/65/EU directives

**MECHANICAL DATA**

- Case: SMA
- Terminals: Solderable per MIL-STD-750, Method 2026
- Approx. Weight: 0.055g / 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         | US1A       | US1B | US1D | US1G | US1J | US1K | US1M | 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 $T_c = 125\text{ }^\circ\text{C}$   | $I_{F(AV)}$     | 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 at Rated DC Blocking Voltage<br>$T_a = 25\text{ }^\circ\text{C}$<br>$T_a = 125\text{ }^\circ\text{C}$ | $I_R$           | 5<br>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         |      |      |      |      |      |      | $^\circ\text{C}/\text{W}$ |
| Typical Junction Capacitance <sup>(3)</sup>  | $C_j$           | 15         |      |      |      |      |      |      | pF                        |
| Operating and Storage Temperature Range  | $T_j, T_{stg}$  | -55 ~ +150 |      |      |      |      |      |      | $^\circ\text{C}$          |

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

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

( 3 ) Measured at 1 MHz and applied reverse voltage of 4 V D.C



Fig.1 Forward Current Derating Curve

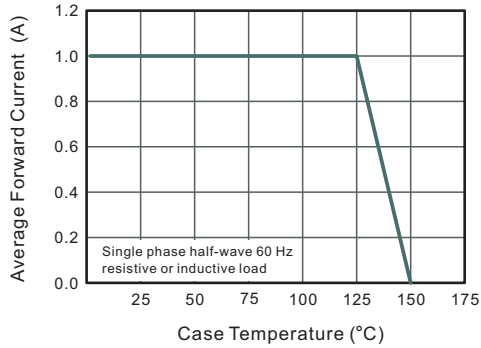


Fig.2 Typical Reverse Characteristics

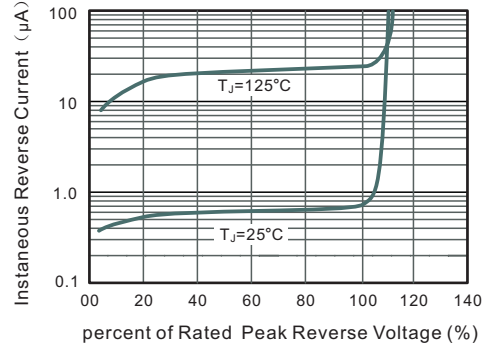


Fig.3 Typical Forward Characteristics

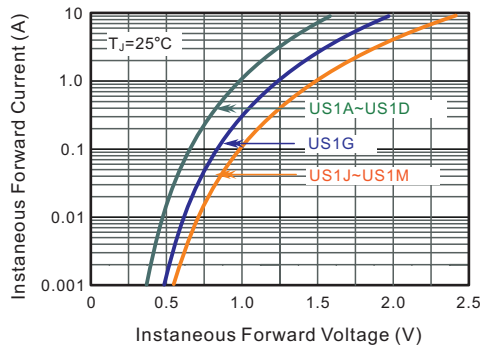


Fig.4 Maximum Non-Repetitive Peak Forward Surge Current

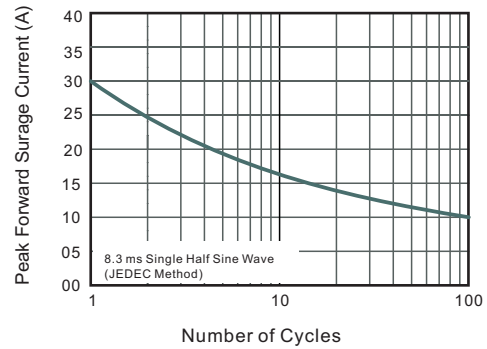


Fig.5- Typical Transient Thermal Impedance

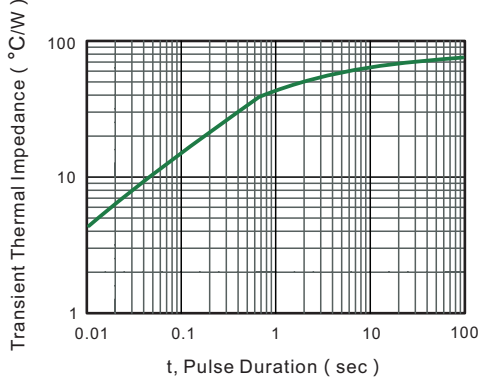
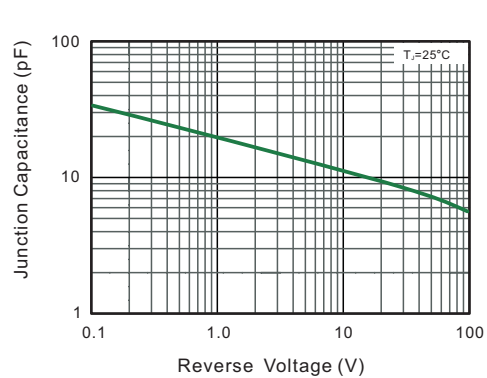


Fig.6 Typical Junction Capacitance

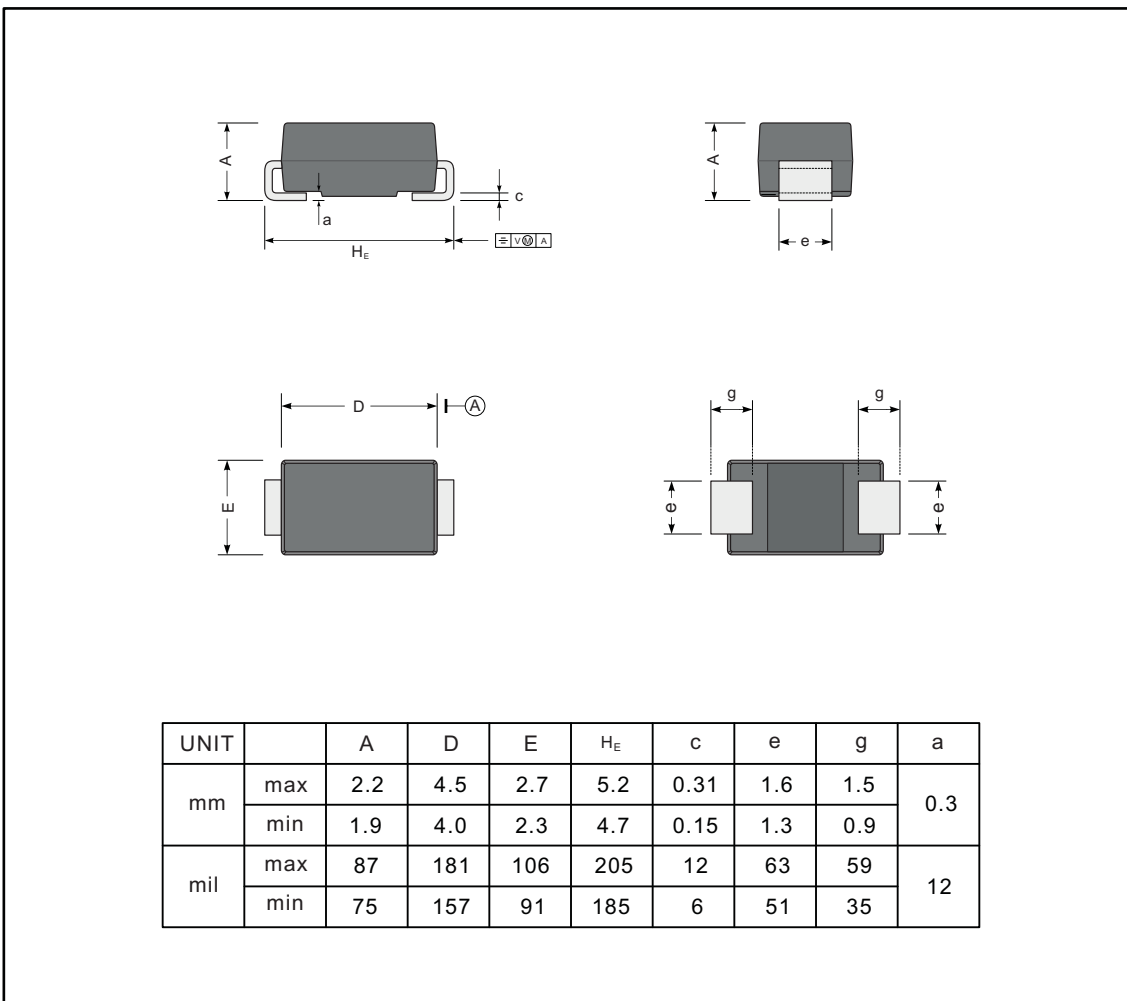




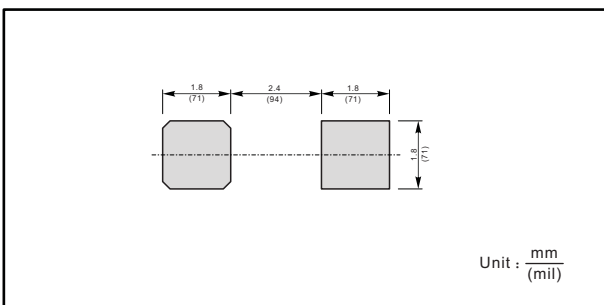
**PACKAGE OUTLINE**

Plastic surface mounted package; 2 leads

SMA



**The recommended mounting pad size**



**Marking**

| Type number | Marking code |
|-------------|--------------|
| US1A        | US1A         |
| US1B        | US1B         |
| US1D        | US1D         |
| US1G        | US1G         |
| US1J        | US1J         |
| US1K        | US1K         |
| US1M        | US1M         |