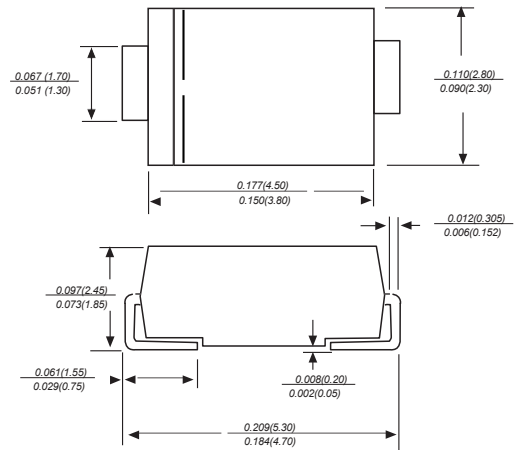


## SURFACE MOUNT SUPER FAST RECOVERY RECTIFIER

### Features

- ◆ The plastic package carries Underwriters Laboratory Flammability Classification 94V-0
- ◆ For surface mounted applications
- ◆ 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
- ◆ Glass passivated chip junction

### DO-214AC/SMA



Dimensions in inches and (millimeters)

### Maximum Ratings And Electrical Characteristics

Ratings at 25°C ambient temperature unless otherwise specified.

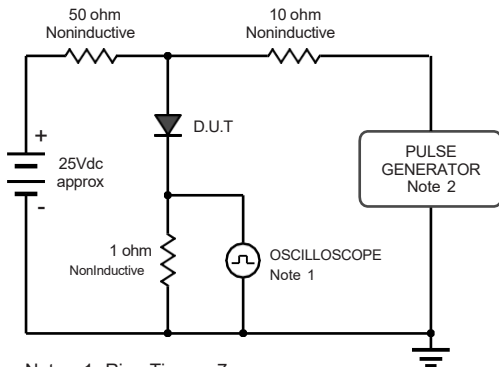
Single phase half-wave 60Hz, resistive or inductive load, for capacitive load current derate by 20%.

| Parameter                                                                                                     | SYMBOLS                           | ES1A        | ES1B | ES1C | ES1D | ES1E | ES1G | ES1J | UNITS |
|---------------------------------------------------------------------------------------------------------------|-----------------------------------|-------------|------|------|------|------|------|------|-------|
| Marking Code                                                                                                  |                                   |             |      |      |      |      |      |      |       |
| Maximum repetitive peak reverse voltage                                                                       | V <sub>RRM</sub>                  | 50          | 100  | 150  | 200  | 300  | 400  | 600  | V     |
| Maximum RMS voltage                                                                                           | V <sub>RMS</sub>                  | 35          | 70   | 105  | 140  | 210  | 280  | 420  | V     |
| Maximum DC blocking voltage                                                                                   | V <sub>DC</sub>                   | 50          | 100  | 150  | 200  | 300  | 400  | 600  | V     |
| Maximum average forward rectified current                                                                     | I <sub>(AV)</sub>                 | 1.0         |      |      |      |      |      |      | A     |
| Peak forward surge current<br>8.3ms single half sine-wave<br>superimposed on rated load (JEDEC Method)        | I <sub>FSM</sub>                  | 30          |      |      |      |      |      |      | A     |
| Maximum instantaneous forward voltage at 1.0A                                                                 | V <sub>F</sub>                    | 1           |      |      |      | 1.25 |      | 1.7  | V     |
| Maximum DC reverse current      T <sub>A</sub> =25℃<br>at rated DC blocking voltage      T <sub>A</sub> =125℃ | I <sub>R</sub>                    | 5<br>100    |      |      |      |      |      |      | uA    |
| Maximum reverse recovery time      (NOTE 1)                                                                   | t <sub>rr</sub>                   | 35          |      |      |      |      |      |      | ns    |
| Typical junction capacitance (NOTE 2)                                                                         | C <sub>J</sub>                    | 15.0        |      |      |      |      |      |      | pF    |
| Typical thermal resistance (NOTE 3)                                                                           | R <sub>θJA</sub>                  | 75.0        |      |      |      |      |      |      | ℃/W   |
| Operating junction and storage temperature range                                                              | T <sub>J</sub> , T <sub>STG</sub> | -55 to +150 |      |      |      |      |      |      | ℃     |

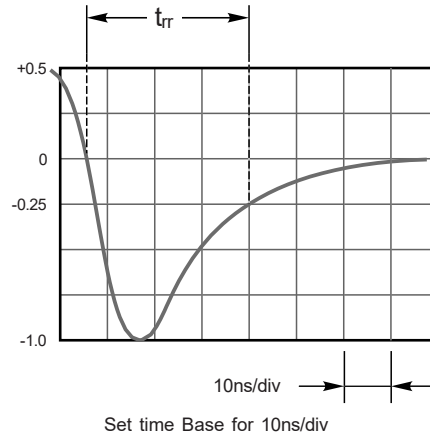
**Note:** 1. Reverse recovery condition  $I_F=0.5A, I_R=1.0A, I_{rr}=0.25A$   
 2. Measured at 1MHz and applied reverse voltage of 4.0V D.C.  
 3. P.C.B. mounted with 1.0"x1.0" (2.54x2.54cm) copper pad areas

## Ratings And Characteristic Curves

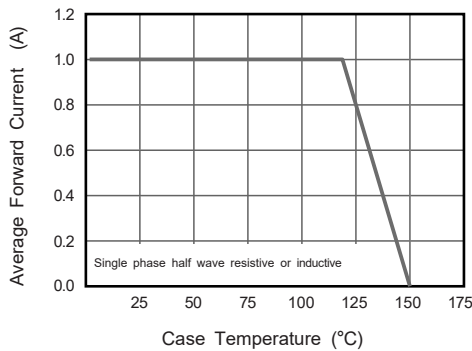
**Fig.1 Reverse Recovery Time Characteristic And Test Circuit Diagram**



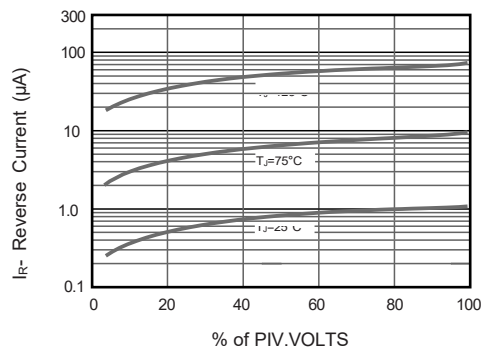
Note: 1. Rise Time = 7ns, max.  
Input Impedance = 1megohm, 22pF.  
2. Rise Time = 10ns, max.  
Source Impedance = 50 ohms.



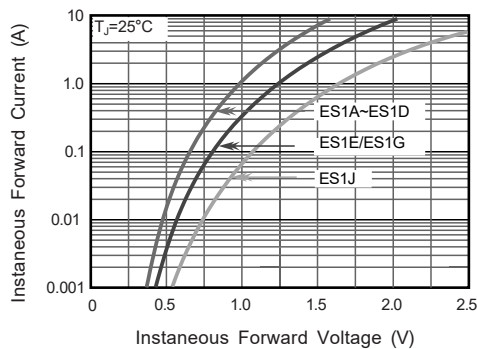
**Fig.2 Maximum Average Forward Current Rating**



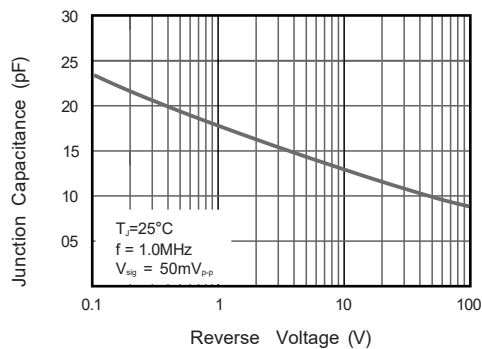
**Fig.3 Typical Reverse Characteristics**



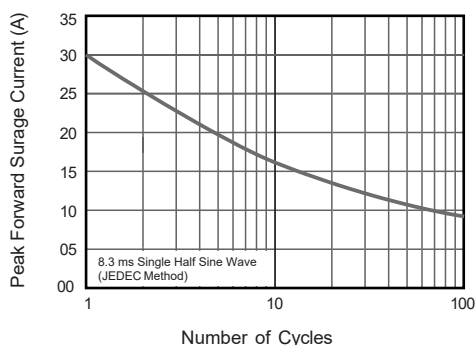
**Fig.4 Typical Forward Characteristics**



**Fig.5 Typical Junction Capacitance**



**Fig.6 Maximum Non-Repetitive Peak Forward Surge Current**



The curve above is for reference only.