

### SMA/DO-214AC

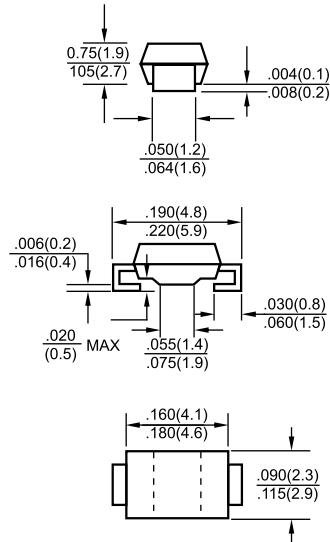


### Features

- ✧ For surface mounted application
- ✧ Glass passivated junction chip
- ✧ Built-in strain relief, ideal for automated placement
- ✧ Plastic material used carries Underwriters Laboratory Classification 94V-0
- ✧ Fast switching for high efficiency
- ✧ High temperature soldering: 260°C/ 10 seconds at terminals

### Mechanical Data

- ✧ Cases: Molded plastic
- ✧ Terminals: Pure tin plated, Lead free.
- ✧ Polarity: Indicated by cathode band
- ✧ Packing: 12mm tape
- ✧ Weight: 0.064 gram



Dimensions in inches and (millimeters)

### Maximum Ratings and Electrical Characteristics

Rating at 25 °C ambient temperature unless otherwise specified.

Single phase, half wave, 60 Hz, resistive or inductive load.

For capacitive load, derate current by 20%

| Type Number   | Symbol                             | FR1A        | FR1B | FR1D | FR1G | FR1J | FR1K | FR1M | Units                       |
|---|------------------------------------|-------------|------|------|------|------|------|------|-----------------------------|
| Maximum Recurrent 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<br>See Fig. 1 @ $T_L=90^\circ\text{C}$                              | $I_{(AV)}$                         | 1.0         |      |      |      |      |      |      | A                           |
| Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method)            | $I_{FSM}$                          | 30          |      |      |      |      |      |      | A                           |
| Maximum Instantaneous Forward Voltage @ 1.0A  | $V_F$                              | 1.3         |      |      |      |      |      |      | V                           |
| Maximum DC Reverse Current @ $T_A=25^\circ\text{C}$<br>at Rated DC Blocking Voltage @ $T_A=125^\circ\text{C}$ | $I_R$                              | 5           |      |      |      |      |      |      | uA                          |
|   |                                    | 50          |      |      |      |      |      |      | uA                          |
| Maximum Reverse Recovery Time ( Note 1 )  | $T_{rr}$                           | 150         |      |      |      | 250  | 500  |      | nS                          |
| Typical Junction Capacitance ( Note 2 )   | $C_j$                              | 10          |      |      |      |      |      |      | pF                          |
| Typical Thermal Resistance (Note 3)   | $R_{\theta JA}$<br>$R_{\theta JL}$ | 105         |      |      |      |      |      |      | $^\circ\text{C} / \text{W}$ |
|   |                                    | 32          |      |      |      |      |      |      |                             |
| Operating Temperature Range   | $T_J$                              | -55 to +150 |      |      |      |      |      |      | $^\circ\text{C}$            |
| Storage Temperature Range   | $T_{STG}$                          | -55 to +150 |      |      |      |      |      |      | $^\circ\text{C}$            |

- Notes:
1. Reverse Recovery Test Conditions:  $I_F=0.5\text{A}$ ,  $I_R=1.0\text{A}$ ,  $I_{RR}=0.25\text{A}$
  2. Measured at 1 MHz and Applied  $V_R=4.0$  Volts
  3. Thermal Resistance from Junction to Ambient and from Junction to Lead Mounted on P.C.B. with 0.2"x0.2" ( 5.0 x 5.0 mm ) Copper Pad Areas.

### RATINGS AND CHARACTERISTIC CURVES (FR1A THRU FR1M)

FIG.1- MAXIMUM FORWARD CURRENT DERATING CURVE

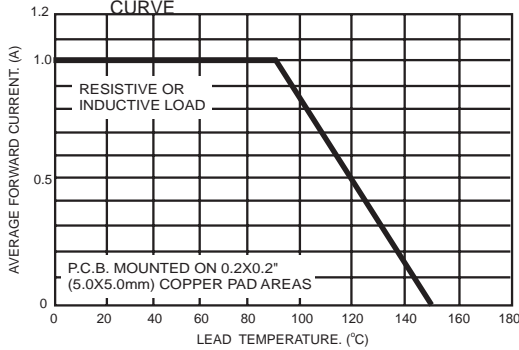


FIG.2- TYPICAL REVERSE CHARACTERISTICS

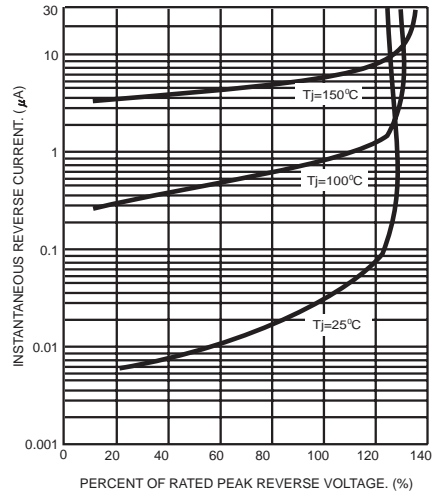


FIG.3- MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

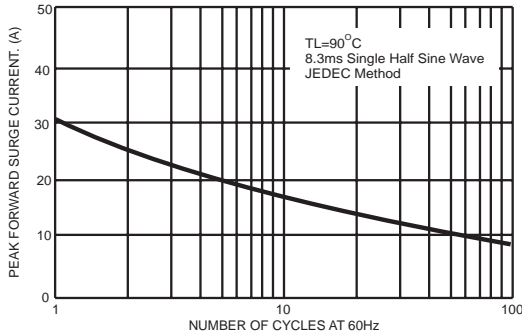


FIG.5- TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS PER LEG

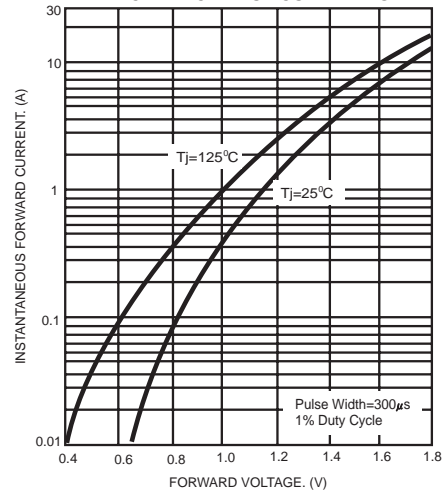


FIG.4- TYPICAL JUNCTION CAPACITANCE

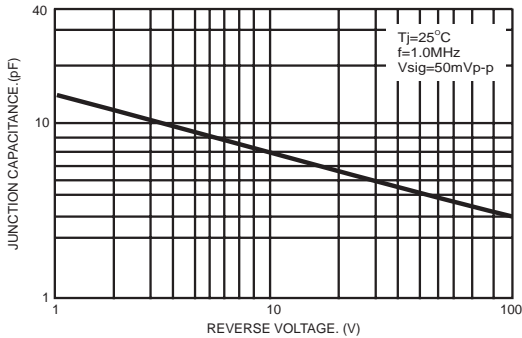


FIG.6- REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM

