

**GLASS PASSIVATED SUPER FAST RECTIFIER**

**VOLTAGE RANGE 50 to 400 Volts CURRENT 1.0 Ampere**

**FEATURES**

- \* High reliability
- \* Low leakage
- \* Low forward voltage
- \* High current capability
- \* Super fast switching speed
- \* High surge capability
- \* Good for switching mode circuit

**MECHANICAL DATA**

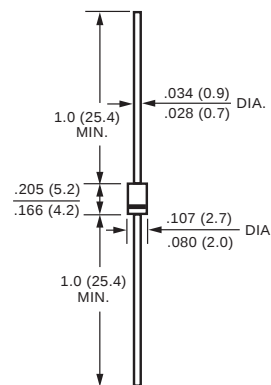
- \* Case: Molded plastic
- \* Epoxy: Device has UL flammability classification 94V-0
- \* Lead: MIL-STD-202E method 208C guaranteed
- \* Mounting position: Any
- \* Weight: 0.33 gram

**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, derate current by 20%.



**DO-41**



Dimensions in inches and (millimeters)

**MAXIMUM RATINGS** (At TA = 25°C unless otherwise noted)

| RATINGS                                                                                                                      | SYMBOL                            | SF11         | SF12 | SF13 | SF14 | SF15 | SF16 | UNITS |
|------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|--------------|------|------|------|------|------|-------|
| Maximum Recurrent Peak Reverse Voltage                                                                                       | V <sub>RRM</sub>                  | 50           | 100  | 150  | 200  | 300  | 400  | Volts |
| Maximum RMS Volts                                                                                                            | V <sub>RMS</sub>                  | 35           | 70   | 105  | 140  | 210  | 280  | Volts |
| Maximum DC Blocking Voltage                                                                                                  | V <sub>DC</sub>                   | 50           | 100  | 150  | 200  | 300  | 400  | Volts |
| Maximum Average Forward Current<br>at T <sub>A</sub> = 55°C                                                                  | I <sub>O</sub>                    | 1.0          |      |      |      |      |      | Amps  |
| Peak Forward Surge Current I <sub>FM</sub> (surge):8.3 ms single half<br>sine-wave superimposed on rated load (JEDEC method) | I <sub>FSM</sub>                  | 30           |      |      |      |      |      | Amps  |
| Typical Junction Capacitance (Note 2)                                                                                        | C <sub>J</sub>                    | 15           |      |      |      | 10   |      | pF    |
| Operating and Storage Temperature Range                                                                                      | T <sub>J</sub> , T <sub>STG</sub> | -65 to + 150 |      |      |      |      |      | °C    |

**ELECTRICAL CHARACTERISTICS** (At TA = 25°C unless otherwise noted)

| CHARACTERISTICS                        |                        | SYMBOL         | SF11 | SF12 | SF13 | SF14 | SF15 | SF16 | UNITS |
|----------------------------------------|------------------------|----------------|------|------|------|------|------|------|-------|
| Maximum Forward Voltage at 1.0A DC     |                        | V <sub>F</sub> | 0.95 |      |      |      | 1.25 |      | Volts |
| Maximum DC Reverse Current             | @T <sub>A</sub> = 25°C | I <sub>R</sub> | 5.0  |      |      |      |      |      | uAmps |
| at Rated DC Blocking Voltage           | @T <sub>A</sub> =150°C |                | 50   |      |      |      |      |      |       |
| Maximum Reverse Recovery Time (Note 1) |                        | trr            | 35   |      |      |      |      |      | nSec  |

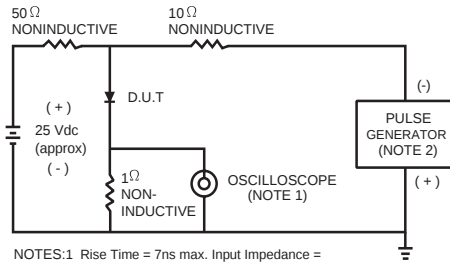
NOTES : 1. Test Conditions: IF=0.5A, IR=-1.0A, IRR=-0.25A.

2. Measured at 1 MHz and applied reverse voltage of 4.0 volts.

2001-5

## RATING AND CHARACTERISTIC CURVES ( SF11 THRU SF16 )

FIG. 1 - TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC



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

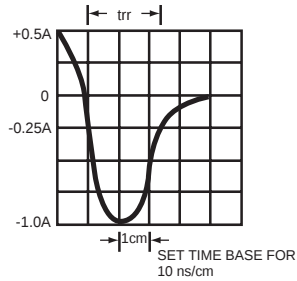


FIG. 2 - TYPICAL FORWARD CURRENT DERATING CURVE

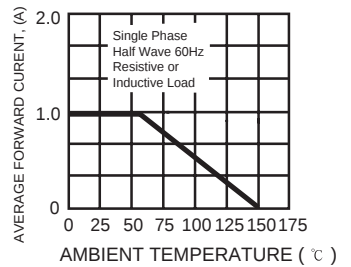


FIG. 3 - TYPICAL REVERSE CHARACTERISTICS

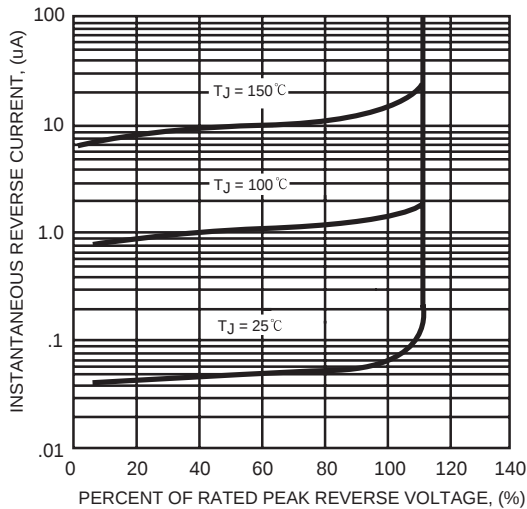


FIG. 4 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

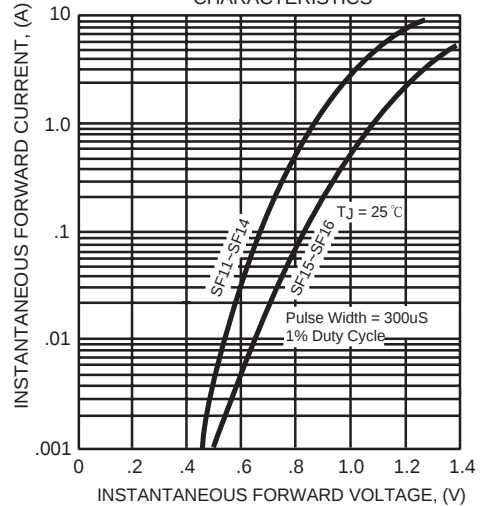


FIG. 5 - MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

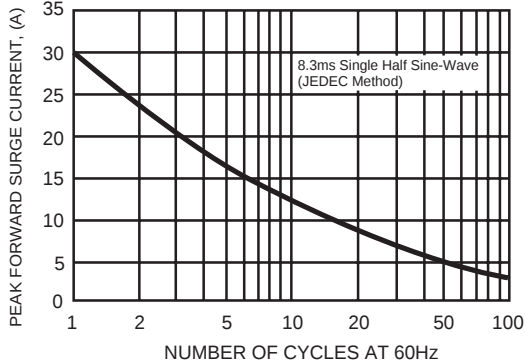


FIG. 6 - TYPICAL JUNCTION CAPACITANCE

