

**GLASS PASSIVATED SUPER FAST RECTIFIER**

**VOLTAGE RANGE 50 to 600 Volts CURRENT 16 Amperes**

**FEATURES**

- \* Low switching noise
- \* Low forward voltage drop
- \* Low thermal resistance
- \* High current capability
- \* Super fast switching speed
- \* High reliability
- \* Good for switching mode circuit

**MECHANICAL DATA**

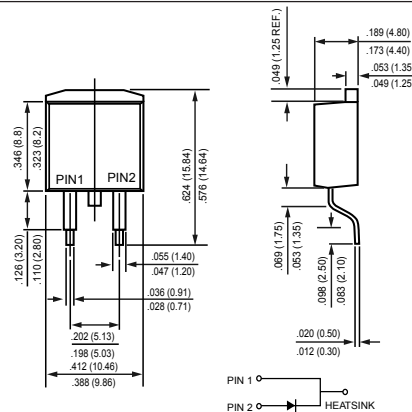
- \* Case: D2-PAK molded plastic
- \* Epoxy: Device has UL flammability classification 94V-O
- \* Lead: MIL-STD-202E method 208C guaranteed
- \* Mounting position: Any
- \* Weight: 1.35 grams

**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%.



**D2-PAK**



Dimensions in inches and (millimeters)

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

| RATINGS                                                                                           | SYMBOL                            | SF161S       | SF162S | SF163S | SF164S | SF165S | SF166S | SF167S | UNITS |
|---------------------------------------------------------------------------------------------------|-----------------------------------|--------------|--------|--------|--------|--------|--------|--------|-------|
| Maximum Recurrent Peak Reverse Voltage                                                            | V <sub>RRM</sub>                  | 50           | 100    | 150    | 200    | 300    | 400    | 600    | Volts |
| Maximum RMS Voltage                                                                               | V <sub>RMS</sub>                  | 35           | 70     | 105    | 140    | 210    | 280    | 420    | Volts |
| Maximum DC Blocking Voltage                                                                       | V <sub>DC</sub>                   | 50           | 100    | 150    | 200    | 300    | 400    | 600    | Volts |
| Maximum Average Forward Rectified Current at T <sub>C</sub> = 100°C                               | I <sub>O</sub>                    | 16.0         |        |        |        |        |        |        | Amps  |
| Peak Forward Surge Current 8.3 ms single half sine-wave superimposed on rated load (JEDEC method) | I <sub>FSM</sub>                  | 300          |        |        |        |        |        |        | Amps  |
| Typical Thermal Resistance (Note 4)                                                               | R <sub>θJA</sub>                  | 16           |        |        |        |        |        |        | °C/W  |
|                                                                                                   | R <sub>θJC</sub>                  | 1.2          |        |        |        |        |        |        |       |
| Typical Junction Capacitance (Note 2)                                                             | C <sub>J</sub>                    | 400          |        |        |        |        |        |        | pF    |
| Operating and Storage Temperature Range                                                           | T <sub>J</sub> , T <sub>STG</sub> | -55 to + 150 |        |        |        |        |        |        | °C    |

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

| CHARACTERISTICS                                            |                         | SYMBOL          | SF161S | SF162S | SF163S | SF164S | SF165S | SF166S | SF167S | UNITS |
|------------------------------------------------------------|-------------------------|-----------------|--------|--------|--------|--------|--------|--------|--------|-------|
| Maximum Instantaneous Forward Voltage at 16.0A DC          |                         | V <sub>F</sub>  | 1.0    |        |        |        | 1.35   |        | 1.70   | Volts |
| Maximum DC Reverse Current<br>at Rated DC Blocking Voltage | @T <sub>A</sub> = 25°C  | I <sub>R</sub>  | 10     |        |        |        |        |        |        | μAmps |
|                                                            | @T <sub>A</sub> = 100°C |                 | 500    |        |        |        |        |        |        |       |
| Maximum Reverse Recovery Time (Note 1)                     |                         | t <sub>rr</sub> | 35     |        |        |        | 50     |        | nSec   |       |

NOTES : 1. Test Conditions: I<sub>F</sub> = 0.5A, I<sub>R</sub> = -1.0A, I<sub>RR</sub> = -0.25A  
2. Measured at 1 MHz and applied reverse voltage of 4.0 volts.  
3. Suffix "R" for Reverse Polarity.  
4. Typical Thermal Resistance : Heat-sink mounted.  
5. "Fully ROHS complaint", "100% Sn plating (Pb-free)"

RATING AND CHARACTERISTICS CURVES ( SF161S THRU SF167S )

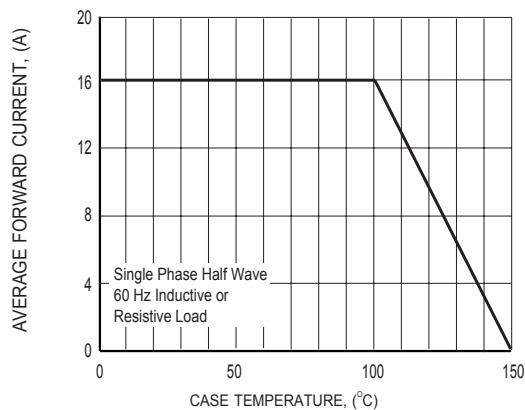


FIG.1 TYPICAL FORWARD CURRENT DERATING CURVE

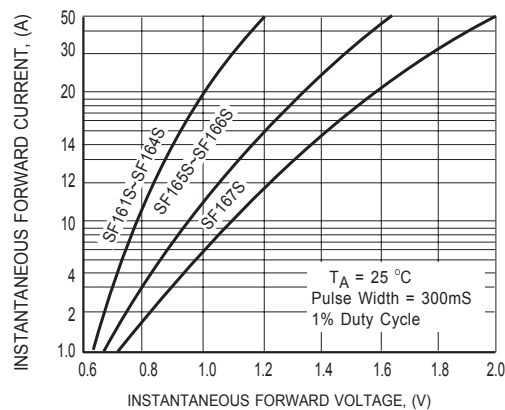


FIG.2 TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

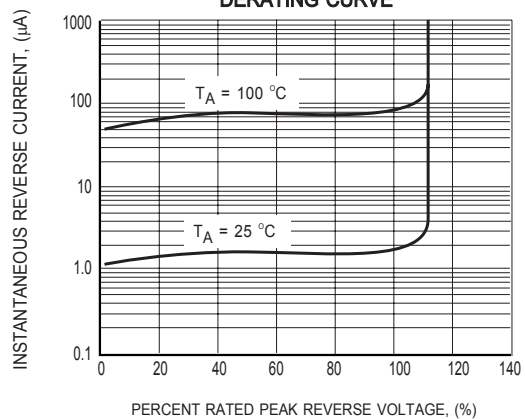


FIG.3 TYPICAL REVERSE CHARACTERISTICS

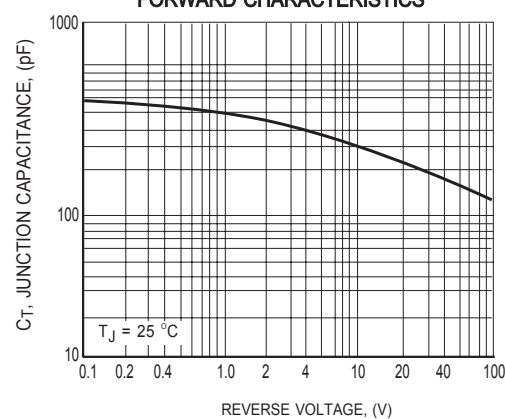


FIG.4 TYPICAL JUNCTION CAPACITANCE

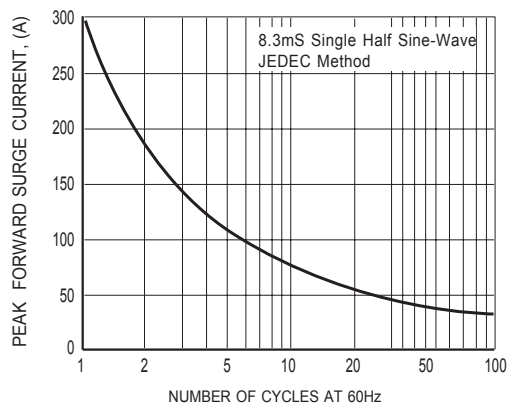


FIG.5 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

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