



# SF51G THRU SF58G

Reverse Voltage - 50 to 600 Volts Forward Current - 5.0 Ampere

## SUPER FAST GLASS PASSIVATED RECTIFIER

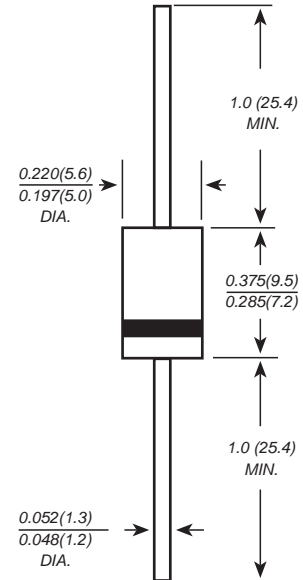
### Features

- ◆ The plastic package carries Underwriters Laboratory Flammability Classification 94V-0
- ◆ Idea for printed circuit board
- ◆ Super fast switching for high efficiency
- ◆ Low reverse leakage
- ◆ High forward surge current capability
- ◆ High temperature soldering guaranteed: 250°C / 10 seconds at terminals



### Mechanical Data

**Case** : JEDEC DO-201AD Molded plastic body  
**Terminals** : Solder plated, solderable per MIL-STD-750, Method 2026  
**Polarity** : Polarity symbol marking on body  
**Mounting Position** : Any  
**Weight** : 0.04 ounce, 1.10 grams



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         | SF51G       | SF52G     | SF53G     | SF54G     | SF55G     | SF56G     | SF58G     | UNITS                     |
|--|-----------------|-------------|-----------|-----------|-----------|-----------|-----------|-----------|---------------------------|
|  |                 | MDD SF51G   | MDD SF52G | MDD SF53G | MDD SF54G | MDD SF55G | MDD SF56G | MDD SF58G |                           |
| Maximum repetitive peak reverse voltage  | $V_{RRM}$       | 50          | 100       | 150       | 200       | 300       | 400       | 600       | V                         |
| Maximum RMS voltage  | $V_{RMS}$       | 35          | 70        | 105       | 140       | 210       | 280       | 420       | V                         |
| Maximum DC blocking voltage  | $V_{DC}$        | 50          | 100       | 150       | 200       | 300       | 400       | 600       | V                         |
| Maximum average forward rectified current at $T_A=55^\circ\text{C}$                                      | $I_{(AV)}$      | 5.0         |           |           |           |           |           |           | A                         |
| Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)         | $I_{FSM}$       | 150.0       |           |           |           |           |           |           | A                         |
| Maximum instantaneous forward voltage at 5.0A  | $V_F$           | 0.95        |           |           | 1.25      |           | 1.7       |           | V                         |
| Maximum DC reverse current at rated DC blocking voltage $T_A=25^\circ\text{C}$ / $T_A=100^\circ\text{C}$ | $I_R$           | 10.0 / 50.0 |           |           |           |           |           |           | $\mu\text{A}$             |
| Maximum reverse recovery time (NOTE 1)   | $t_{rr}$        | 35          |           |           |           |           |           |           | ns                        |
| Typical junction capacitance (NOTE 2)  | $C_J$           | 100.0       |           |           | 50.0      |           |           |           | pF                        |
| Typical thermal resistance (NOTE 3)  | $R_{\theta JA}$ | 30.0        |           |           |           |           |           |           | $^\circ\text{C}/\text{W}$ |
| Operating junction and storage temperature range   | $T_J, T_{STG}$  | -65 to +150 |           |           |           |           |           |           | $^\circ\text{C}$          |

**Note:** 1. Reverse recovery condition  $I_F=0.5\text{A}, I_R=1.0\text{A}, I_{rr}=0.25\text{A}$

2. Measured at 1MHz and applied reverse voltage of 4.0V D.C.

3. Thermal resistance from junction to ambient at 0.375" (9.5mm) lead length, P.C.B. mounted



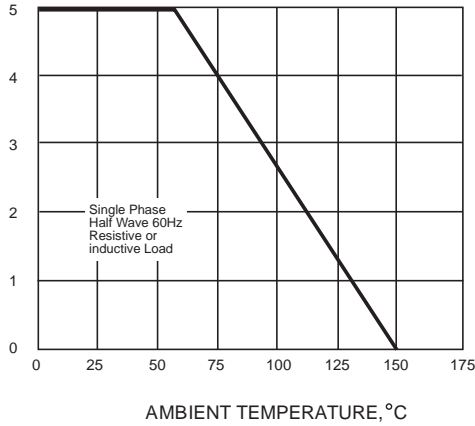
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## Ratings And Characteristic Curves

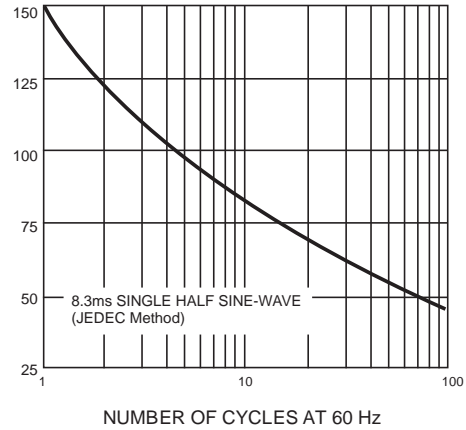
AVERAGE FORWARD RECTIFIED CURRENT, AMPERES

FIG. 1- FORWARD CURRENT DERATING CURVE



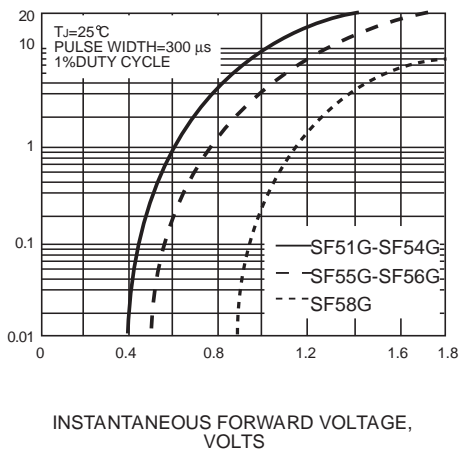
PEAK FORWARD SURGE CURRENT, AMPERES

FIG. 2- MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT



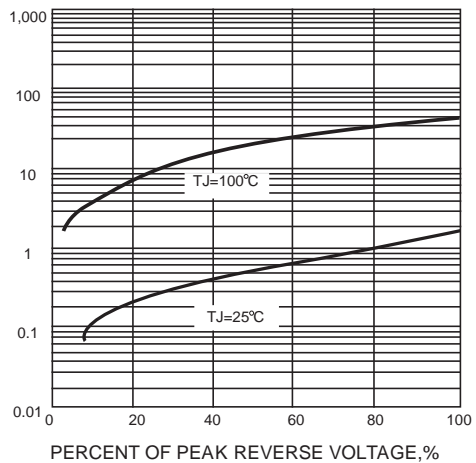
INSTANTANEOUS FORWARD CURRENT, AMPERES

FIG. 3- TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS



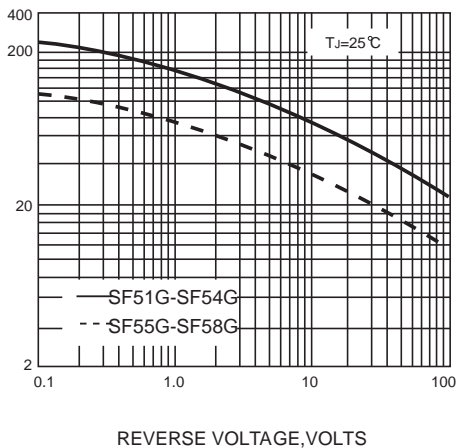
INSTANTANEOUS REVERSE CURRENT, MICROAMPERES

FIG. 4- TYPICAL REVERSE CHARACTERISTICS



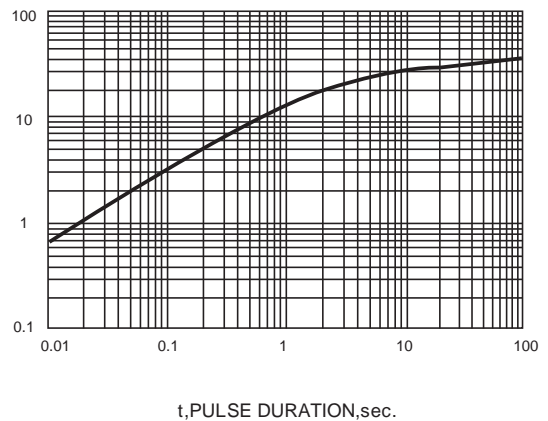
JUNCTION CAPACITANCE, pF

FIG. 5- TYPICAL JUNCTION CAPACITANCE



TRANSIENT THERMAL IMPEDANCE, °C/W

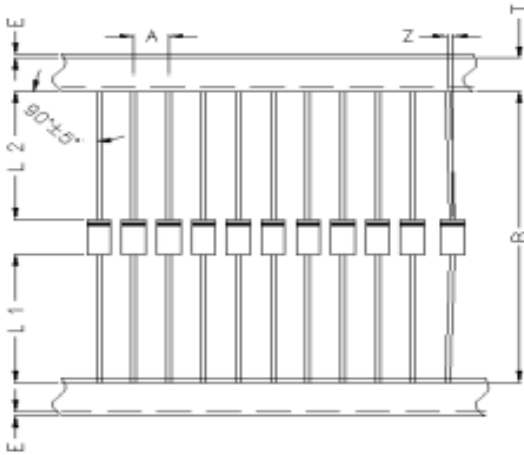
FIG. 6- TYPICAL TRANSIENT THERMAL IMPEDANCE



The curve above is for reference only.

## Package Information

### Taping Specifications



| Item                | Symbol | Specifications(mm) |
|---------------------|--------|--------------------|
| Component Pitch     | A      | 10.0±0.5           |
| Inner Tape Pitch    | B      | 52.4±1.5           |
| Component alignment | Z      | 1.2 Max            |
| Tape width          | T      | 6.0±0.5            |
| Exposed adhesive    | E      | 0.8 Max            |
| Body eccentricity   | L1-L2  | 1.0 Max            |

### Ammunition Package Specifications

| Package    | Inner Box Size (mm) | QTY/Box (pcs) | Carton Size (mm) | Q'TY/Carton (pcs) |
|------------|---------------------|---------------|------------------|-------------------|
| DO - 201AD | 255*74*145          | 1000          | 410*275*340      | 10000             |

### Bulk Package Specifications

| Package    | Inner Box Size (mm) | QTY/Box (pcs) | Carton Size (mm) | Q'TY/Carton (pcs) |
|------------|---------------------|---------------|------------------|-------------------|
| DO - 201AD | 198*86*21           | 200           | 460*220*250      | 10000             |

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