

# SMF101 THRU SMF107



1.0 AMP SURFACE MOUNT FAST RECOVERY RECTIFIERS



## FEATURES

- \* Low forward voltage drop
- \* Low leakage current
- \* High reliability

## MECHANICAL DATA

- \* Case: Molded plastic
- \* Epoxy: UL 94V-0 rate flame retardant
- \* Metallurgically bonded construction
- \* Polarity: Color band denotes cathode end
- \* Mounting position: Any
- \* Weight: 0.015 grams

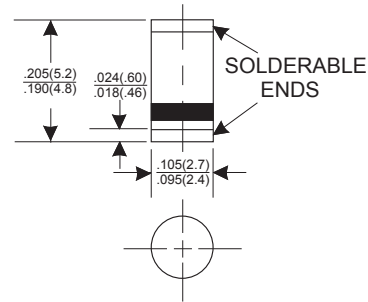
## VOLTAGE RANGE

50 to 1000 Volts

## CURRENT

1.0 Ampere

SM-1



Dimensions in inches and (millimeters)

## MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Rating 25°C ambient temperature unless otherwise specified.  
Single phase half wave, 60Hz, resistive or inductive load.  
For capacitive load, derate current by 20%.

| TYPE NUMBER  | SMF101 | SMF102 | SMF103 | SMF104 | SMF105 | SMF106 | SMF107 | UNITS      |    |
|--|--------|--------|--------|--------|--------|--------|--------|------------|----|
| Maximum Recurrent Peak Reverse Voltage   | 50     | 100    | 200    | 400    | 600    | 800    | 1000   | V          |    |
| Maximum RMS Voltage  | 35     | 70     | 140    | 280    | 420    | 560    | 700    | V          |    |
| Maximum DC Blocking Voltage  | 50     | 100    | 200    | 400    | 600    | 800    | 1000   | V          |    |
| Maximum Average Forward Rectified Current  |        |        |        |        |        |        |        |            |    |
| See Fig. 2   |        |        |        |        |        |        |        | 1.0        | A  |
| Peak Forward Surge Current, 8.3 ms single half sine-wave superimposed on rated load (JEDEC method) |        |        |        |        |        |        |        | 30         | A  |
| Maximum Instantaneous Forward Voltage at 1.0A  |        |        |        |        |        |        |        | 1.3        | V  |
| Maximum DC Reverse Current Ta=25°C   |        |        |        |        |        |        |        | 5.0        | μA |
| at Rated DC Blocking Voltage Ta=100°C  |        |        |        |        |        |        |        | 100        | μA |
| Maximum Reverse Recovery Time (Note 1)   |        |        |        | 150    | 250    | 500    |        |            | nS |
| Typical Junction Capacitance (Note 2)  |        |        |        |        |        |        |        | 15         | pF |
| Operating and Storage Temperature Range T <sub>J</sub> , T <sub>STG</sub>                          |        |        |        |        |        |        |        | -65 — +175 | °C |

### NOTES:

- Reverse Recovery Time test condition: IF=0.5A, IR=1.0A, IRR=0.25A
- Measured at 1MHz and applied reverse voltage of 4.0V D.C.

## RATING AND CHARACTERISTIC CURVES (SMF101 THRU SMF107)

FIG.1-TYPICAL FORWARD CHARACTERISTICS

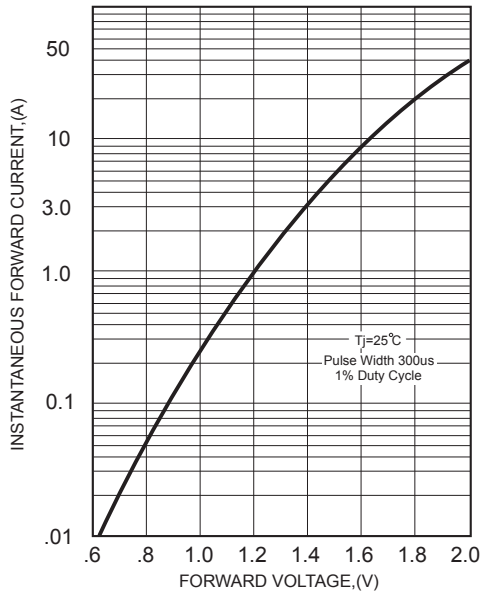


FIG.2-TYPICAL FORWARD CURRENT DERATING CURVE

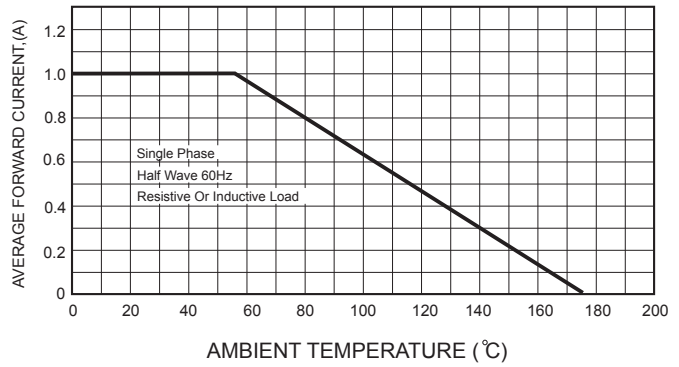
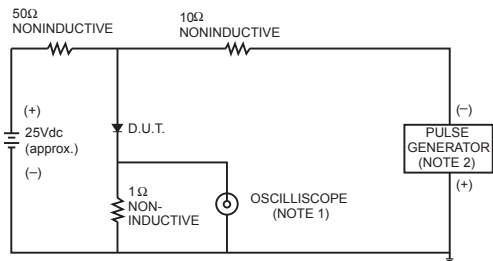


FIG.3- TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTICS



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

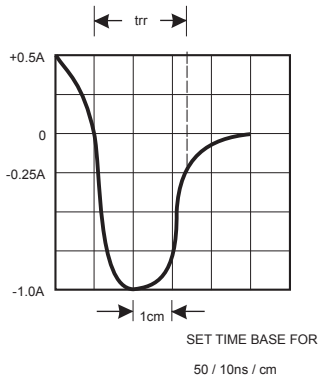


FIG.4-MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

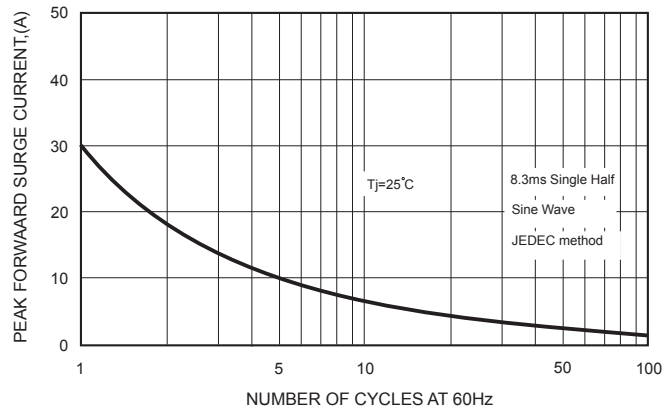


FIG.5-TYPICAL JUNCTION CAPACITANCE

