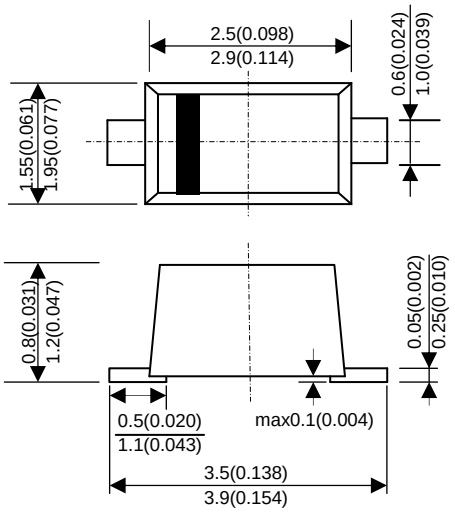
# SMR1A - SMR1M

## GLASS PASSIVATED JUNCTION FAST RECOVERY RECTIFIER

## PRV : 50 - 1000 Volts
## Io : 1.0 Ampere

### SOD-123FL




**Dimensions in millimeters**

### FEATURES :

* Glass passivated junction chip
* High current capability
* High reliability
* Low reverse current
* Low forward voltage drop
* Pb Free / RoHS Compliant

### MECHANICAL DATA :

* Case: JEDEC SOD-123FL, molded plastic over passivated chip
* Terminals: Solder Plated, solderable per MIL-STD-750, Method 2026
* Polarity: Color band denotes cathode end
* Mounting position : Any
* Weight: 0.02 gram (Approximate)

### 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%.

| RATING | SYMBOL | SMR1A | SMR1B | SMR1D | SMR1G | SMR1J | SMR1K | SMR1M | UNIT |
|---|---|---|---|---|---|---|---|---|---|
| Marking | | RA | RB | RD | RG | RJ | RK | RM | |
| 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 Current Ta = 55 °C | $I_{F(AV)}$ | 1.0 | | | | | | | A |
| Peak Forward Surge Current, 8.3ms Single half sine wave Superimposed on rated load (JEDEC Method) | $I_{FSM}$ | 35 | | | | | | | A |
| Maximum Peak Forward Voltage at $I_F$ = 1.0 A | $V_F$ | 1.3 | | | | | | | V |
| Maximum DC Reverse Current Ta = 25 °C | $I_R$ | 5 | | | | | | | µA |
| at Rated DC Blocking Voltage Ta = 100 °C | $I_{R(H)}$ | 50 | | | | | | | µA |
| Maximum Reverse Recovery Time (Note 1) | Trr | 150 | | | | 250 | 500 | | ns |
| Typical Junction Capacitance (Note 2) | $C_J$ | 50 | | | | | | | pF |
| Junction Temperature Range | $T_J$ | - 65 to + 150 | | | | | | | °C |
| Storage Temperature Range | $T_{STG}$ | - 65 to + 150 | | | | | | | °C |

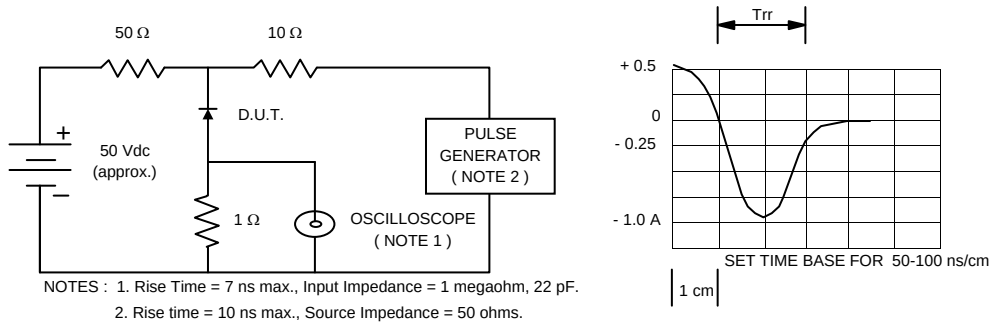
**Notes :**

( 1 ) Reverse Recovery Test Conditions : $I_F$ = 0.5 A, $I_R$ = 1.0 A, Irr = 0.25 A.

( 2 ) Measured at 1.0 MHz and applied reverse voltage of 4.0 $V_{DC}$

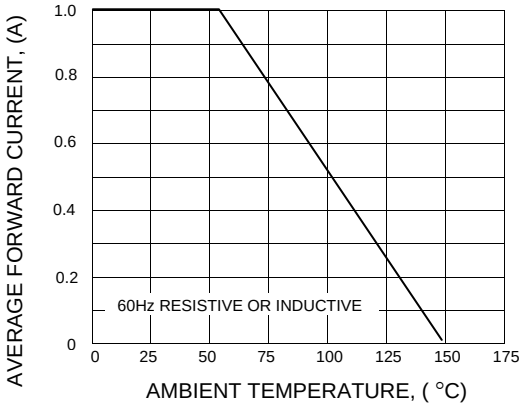
# RATING AND CHARACTERISTIC CURVES ( SMR1A - SMR1M )

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

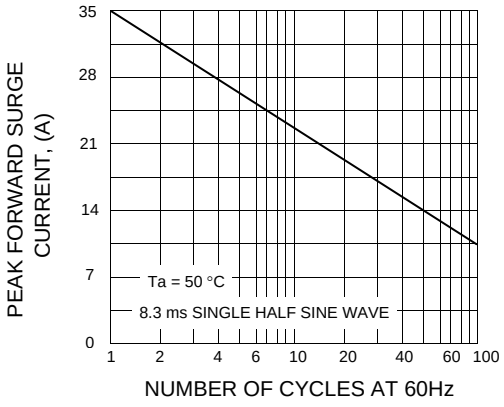



NOTES : 1. Rise Time = 7 ns max., Input Impedance = 1 megaohm, 22 pF.
2. Rise time = 10 ns max., Source Impedance = 50 ohms.
3. All Resistors = Non-inductive Types.

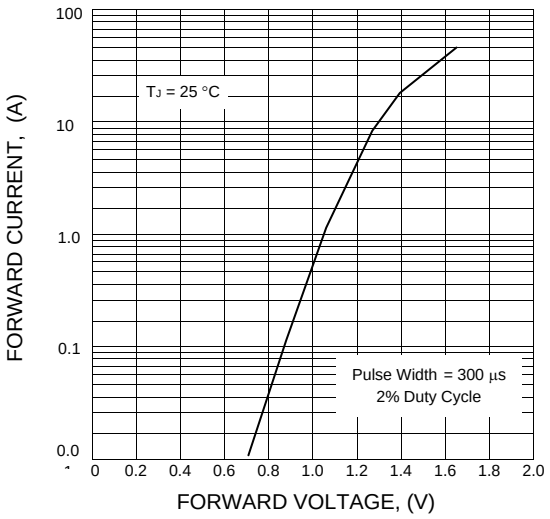
## FIG.2 - DERATING CURVE CURRENT




## FIG.3 - MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT




## FIG.4 - TYPICAL FORWARD CHARACTERISTICS




## FIG.5 - TYPICAL REVERSE CHARACTERISTICS