

***SM493X SERIES***

***SURFACE MOUNT FAST RECOVERY RECTIFIER***

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# SM4933 THRU SM4937

## ***SURFACE MOUNT FAST RECOVERY RECTIFIER***

**REVERSE VOLTAGE:** 50 to 600 VOLTS  
**FORWARD CURRENT:** 1.0 AMPERE

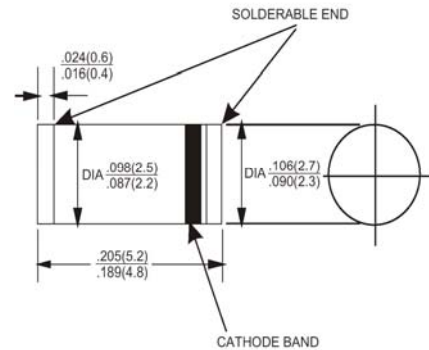
### ***FEATURES***

- Plastic package has Underwriters Laboratory Flammability Classification 94V-O
- For surface mounted applications
- High temperature metallurgically bonded construction
- Fast switching for high efficiency
- Cavity-free glass passivated junction
- Capable of meeting environmental standards of MIL-S-19500
- High temperature soldering : 250°C /10 seconds at terminals

### ***MECHANICAL DATA***

Case: Molded plastic, MELF  
 Epoxy: UL 94V-O rate flame retardant  
 Terminals: Solder plated, solderable per MIL-STD-750, method 208 guaranteed  
 Polarity: Color band denotes cathode end  
 Mounting position: Any  
 Weight: 0.005 ounce, 0.12 gram

### **MELF**



**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, derate current by 20%.

	Symbols	SM4933	SM4934	SM4935	SM4936	SM4937	Units
Maximum Recurrent Peak Reverse Voltage	$V_{RRM}$	50	100	200	400	600	Volts
Maximum RMS Voltage	$V_{RMS}$	35	70	140	280	420	Volts
Maximum DC Blocking Voltage	$V_{DC}$	50	100	200	400	600	Volts
Maximum Average Forward Rectified Current at $T_A=55^\circ\text{C}$	$I_{(AV)}$	1.0					Amp
Peak Forward Surge Current, 8.3ms single half-sine-wave superimposed on rated load (JEDEC method)	$I_{FSM}$	30					Amp
Maximum Forward Voltage at 1.0A DC	$V_F$	1.2					Volts
Maximum Reverse Current at $T_A=25^\circ\text{C}$ at Rated DC Blocking Voltage $T_A=125^\circ\text{C}$	$I_R$	5.0 100					$\mu\text{Amp}$
Typical Junction Capacitance (Note 1)	$C_J$	15					pF
Typical Thermal Resistance (Note 2)	$R_{\theta JA}$	75					$^\circ\text{C/W}$
Typical Thermal Resistance (Note 3)	$R_{\theta JT}$	30					$^\circ\text{C/W}$
Maximum Reverse Recovery Time (Note 4)	$T_{RR}$	200					nS
Operating and Storage Temperature Range	$T_J, T_{stg}$	-55 to +175					$^\circ\text{C}$

#### **NOTES:**

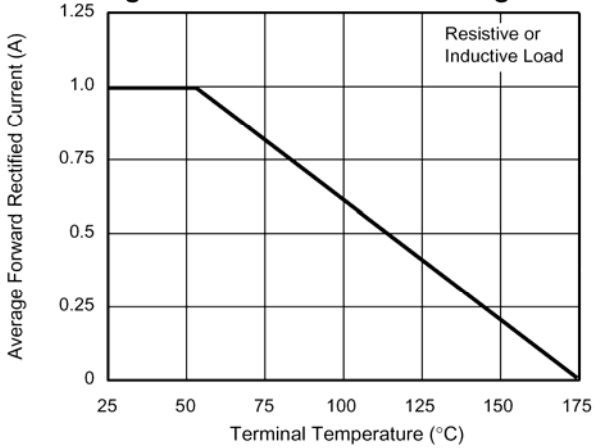
- 1- Measured at 1 MHz and applied reverse voltage of 4.0 VDC.
- 2- Thermal resistance from junction to ambient, 0.24 x 0.24" (6.0 x 6.0mm) copper pads to each terminal
- 3- Thermal resistance from junction to terminal, 0.24 x 0.24" (6.0 x 6.0mm) copper pads to each terminal
- 4- Reverse Recovery Test Conditions:  $I_F = 1.0\text{A}$ ,  $V_R = 30\text{V}$ .

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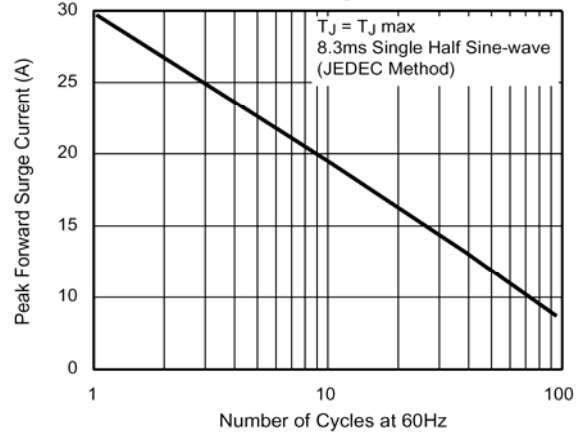
## SURFACE MOUNT FAST RECOVERY RECTIFIER

### RATINGS AND CHARACTERISTIC CURVES

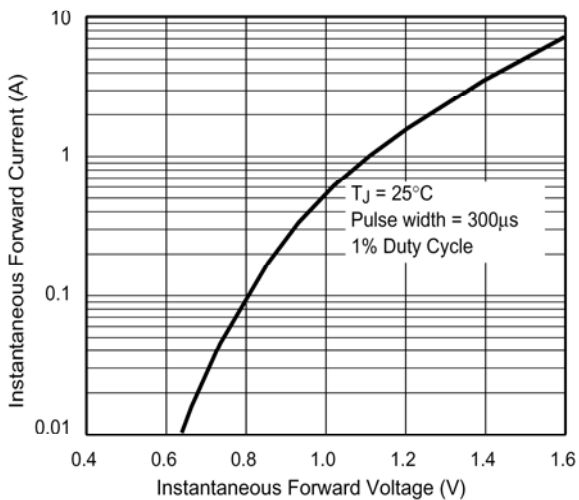
**Fig 1 – Forward Current Derating Curve**



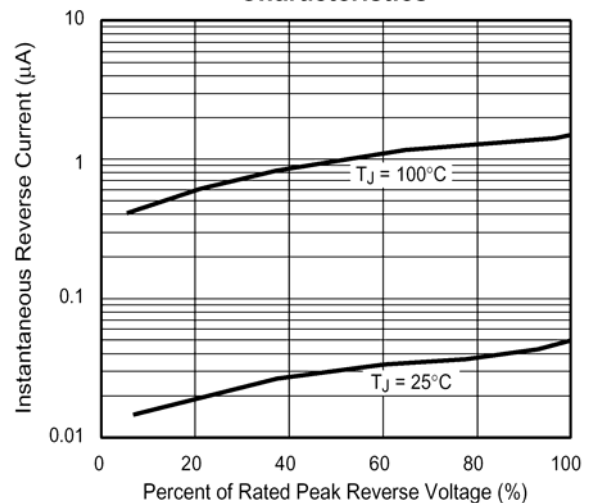
**Fig 2 – Maximum Non-repetitive Peak Forward Surge Current**



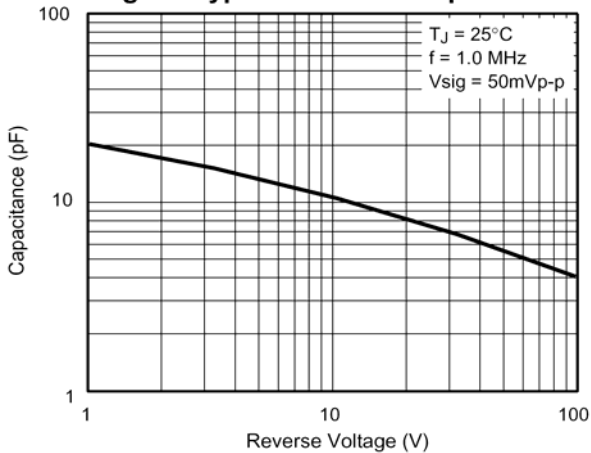
**Fig 3 – Typical Instantaneous Forward Characteristics**



**Fig 4 – Typical Reverse Characteristics**



**Fig 5 – Typical Junction Capacitance**



**Fig. 6 – Typical Transient Thermal Impedance**

