

## Standard Surface Mounted Rectifiers

Reverse Voltage - 1600 to 2000 V

Forward Current - 1.0 A

### FEATURES

- ◆ The plastic package carries Underwriters Laboratory Flammability Classification 94V-0
- ◆ Idea for printed circuit board
- ◆ Glass passivated Junction chip
- ◆ Low reverse leakage
- ◆ High forward surge current capability
- ◆ High temperature soldering guaranteed 250°C/10 seconds at terminals

### MECHANICAL DATA

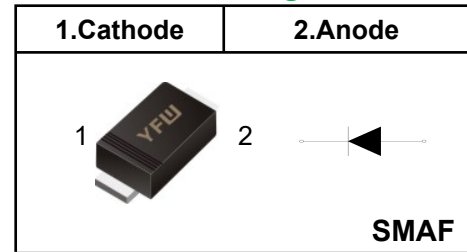
- ◆ Case : Molded plastic body
- ◆ Terminals : Solder plated, solderable per MIL-STD-750,Method 2026
- ◆ Polarity : Polarity symbol marking on body
- ◆ Mounting Position : Any
- ◆ Weight : 0.0014 ounce, 0.038 grams

### 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	SM513F	SM516F	SM520F	Units
Maximum Repetitive Peak Reverse Voltage	$V_{RRM}$	1600	1800	2000	V
Maximum RMS voltage	$V_{RMS}$	1120	1260	1400	V
Maximum DC Blocking Voltage	$V_{DC}$	1600	1800	2000	V
Maximum Average Forward Rectified Current at $T_L = 100^\circ\text{C}$	$I_{(AV)}$	1.0			A
Peak Forward Surge Current, 8.3ms Single Half Sine-wave Superimposed On Rated Load	$I_{FSM}$	30.0			A
Maximum Instantaneous Forward Voltage at 1.0 A	$V_F$	1.10			V
Maximum DC reverse current at rated DC blocking voltage $T_A = 25^\circ\text{C}$ $T_A = 100^\circ\text{C}$	$I_R$	10 500			uA
Typical junction capacitance (Note1)	$C_J$	18.0			pF
Typical Thermal Resistance	$R_{\theta JA}$	70			°C/W
Operating Junction Temperature Range	$T_j$	-55 ~ +150			°C
Storage Temperature Range	$T_{stg}$	-55 ~ +150			°C

### Pinning

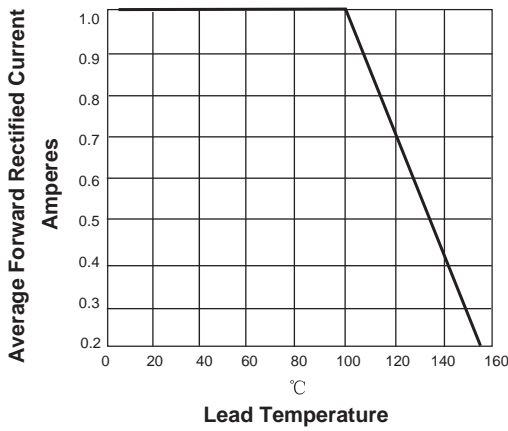


### Marking Code

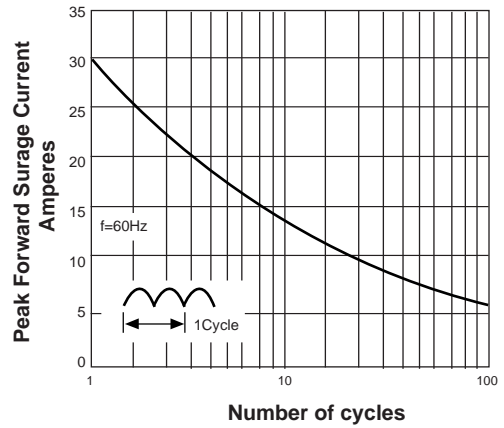
SM513F	SM513F
SM516F	SM516F
SM520F	SM520F

**Ratings And Characteristic Curves**

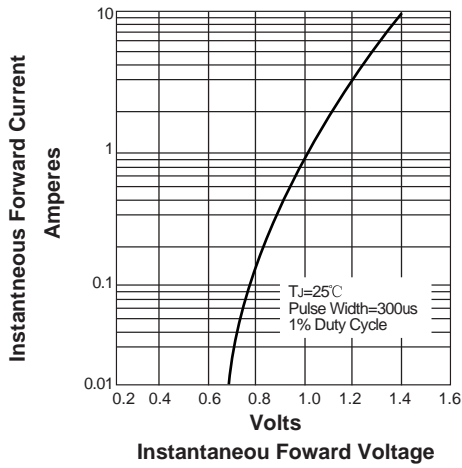
**FIG. 1- DERATING CURVE OUTPUT RECTIFIED CURRENT**



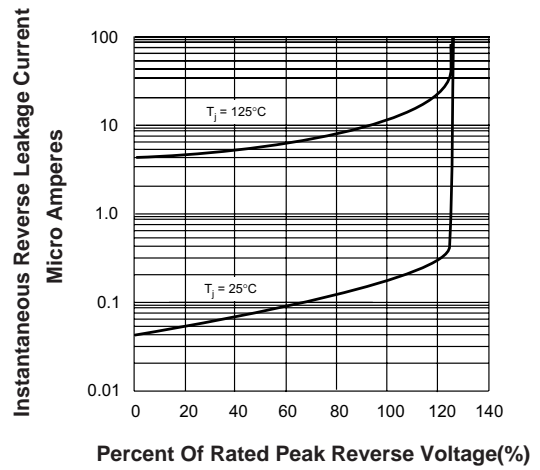
**FIG. 2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT PER LEG**



**FIG. 3-TYPICAL FORWARD VOLTAGE CHARACTERISTICS**

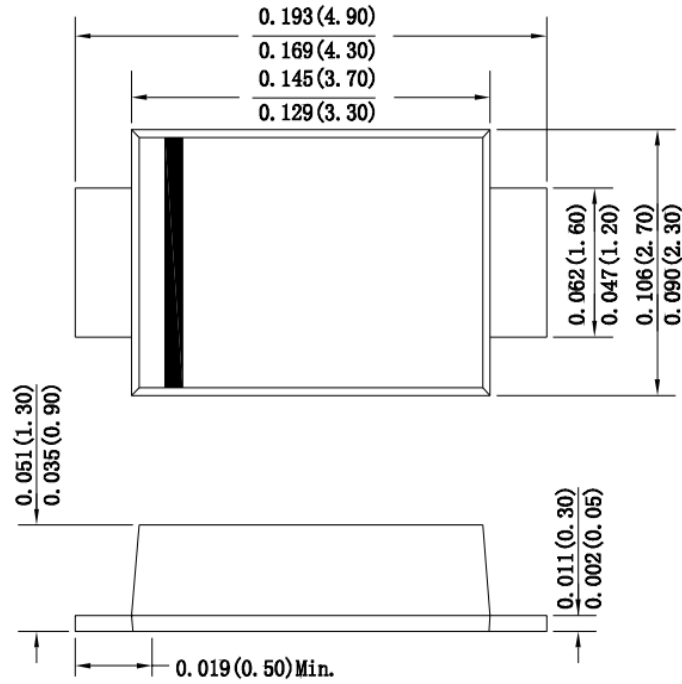


**FIG. 4-TYPICAL REVERSE LEAKAGE CHARACTERISTICS**



Package Outline

SMAF



Summary of Packing Options

Package	Packing Description	Packing Quantity	Industry Standard
SMAF	Tape/Reel,13"reel	10000	EIA-481-1
	Tape/Reel,7"reel	3000	EIA-481-1

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