

### SILICON RECTIFIER

1 Amp

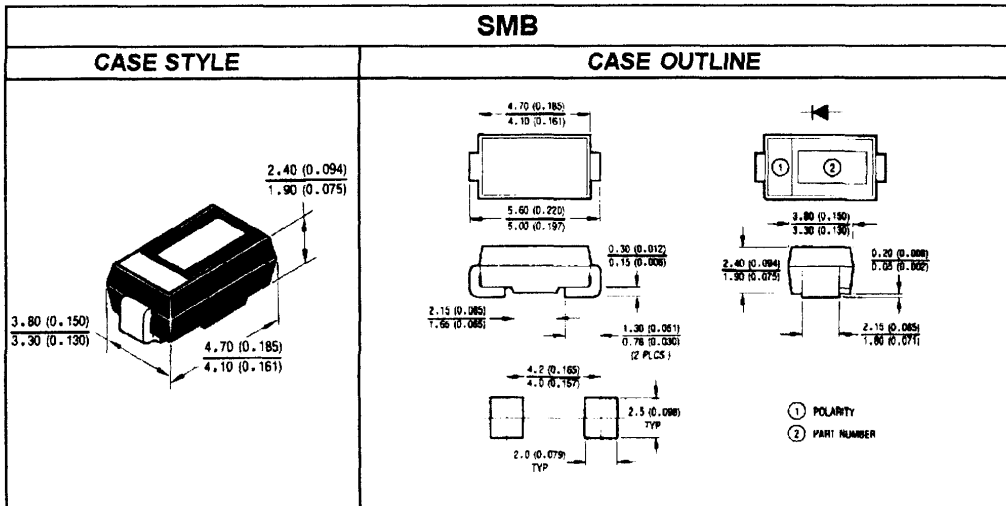
#### Major Ratings and Characteristics

Characteristics	SM4000	Units
$I_{F(AV)}$ Rectangular waveform	1.0	A
$V_{RRM}$	50-1000	V
$I_{FSM}$ @ $t_p = 8.3\text{ms}$ half-sine	30	A
$V_F$ @ 1.0Apk, $T_J = 125^\circ\text{C}$	0.49	V
$T_J$	-55 to 150	$^\circ\text{C}$

#### Description / Features

The SM400X Series surface-mount silicon rectifier has been designed for applications requiring a very small foot print on PC boards. Typical applications are in disk drives, PDA's, laptop and notebook computers, switching power supplies, converters, free-wheeling diodes, battery charging and reverse battery protection.

- Small footprint, surface mountable
- High temperature, metallurgically bonded, no compression contacts
- Glass passivated junction
- Submersible to  $265^\circ\text{C}$  for 10 seconds in solder bath
- UL94V-0 flammability rating



## Voltage Ratings

Part number	4001	4002	4003	4004	4005	4006	4007
$V_R$ Max. DC Reverse Voltage (V)	50	100	200	400	600	800	1000
$V_{RWM}$ Max. Working Peak Reverse Voltage (V)							

## Absolute Maximum Ratings

Parameters	SM4000	Units	Conditions
$I_{F(AV)}$ Max. Average Forward Current	1	A	50% duty cycle @ $T_C = 75^\circ\text{C}$ , rectangular waveform
$I_{FSM}$ Max. Peak Forward Surge Current	30	A	8.3 ms half-sine wave pulse superimposed on load

## Electrical Specifications

Parameters	SM4000	Units	Conditions	
$V_{FM}$ Max. Forward Voltage Drop	1.10	V	@ 1A	$T_J = 25^\circ\text{C}$
$I_{RM}$ Max. Reverse Leakage Current	10	$\mu\text{A}$	$T_J = 25^\circ\text{C}$	$V_R = \text{rated } V_R$
	50	$\mu\text{A}$	$T_J = 125^\circ\text{C}$	
$C_T$ Max. Junction Capacitance	15	pF	$V_R = 4V_{DC}$	$f = 1\text{MHz}$

## Thermal-Mechanical Specifications

Parameters	SM4000	Units	Conditions
$T_J$ Max. Junction Temperature Range	-65 to 175	$^\circ\text{C}$	
$T_{STG}$ Max. Storage Temperature Range	-65 to 175	$^\circ\text{C}$	
$R_{\theta JC}$ Max. Thermal Resistance, Junction to Lead	30	$^\circ\text{C/W}$	DC operation
$R_{\theta JA}$ Max. Thermal Resistance, Junction to Ambient	75	$^\circ\text{C/W}$	DC operation
wt Approximate Weight	0.1	g	
Case Style	SMB		Similar to DO-214AA