

SILICON RECTIFIER

1 Amp

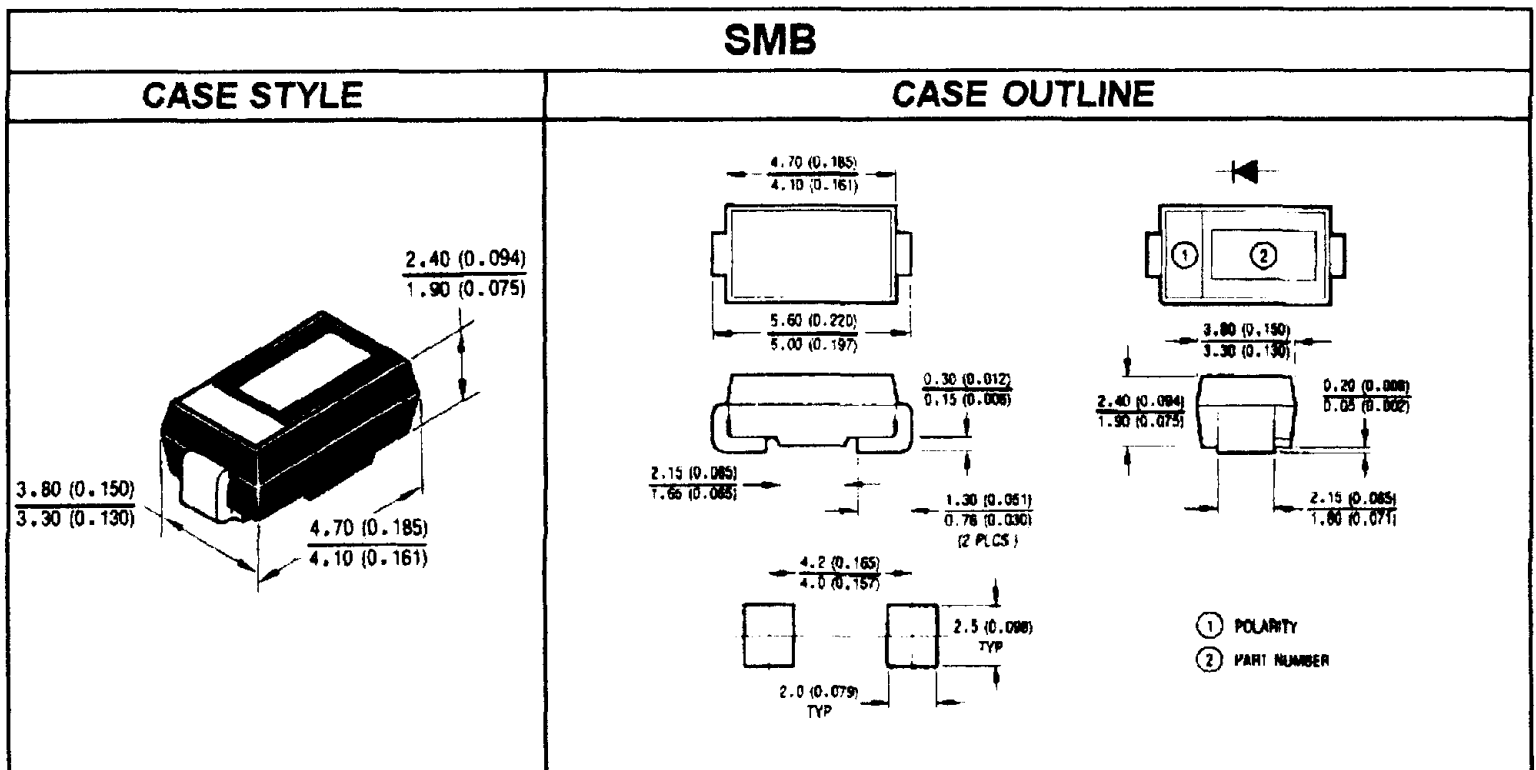
Major Ratings and Characteristics

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

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 $265^\circ C$ 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	μA	$T_J = 25^\circ\text{C}$	$V_R = \text{rated } V_R$
		50	μA	$T_J = 125^\circ\text{C}$	
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_{thJC}	Max. Thermal Resistance, Junction to Lead	30	$^\circ\text{C/W}$	DC operation
R_{thJC}	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