Chatsworth, CA
Microsemi
Progress Powered by Technology

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S1A THRU S1M

1 Amp Silicon Rectifier 50 to 1000 Volts

Features

- For Surface Mount Applications
- Extremely Low Thermal Resistance
- Easy Pick And Place
- High Temp Soldering: 250°C for 10 Seconds At Terminals

Maximum Ratings

- Operating Temperature: -65°C to +175°C
- Storage Temperature: -65°C to +175°C
- Maximum Thermal Resistance; 15°C/W Junction To Lead

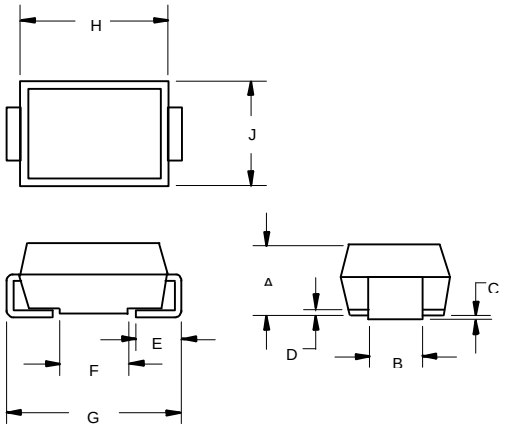
Microsemi Catalog Number	Device Marking	Maximum Reccurrent Peak Reverse Voltage	Maximum RMS Voltage	Maximum DC Blocking Voltage
SMB4001	S1A	50V	35V	50V
SMB4002	S1B	100V	70V	100V
SMB4003	S1D	200V	140V	200V
SMB4004	S1G	400V	280V	400V
SMB4005	S1J	600V	420V	600V
SMB4006	S1K	800V	560V	800V
SMB4007	S1M	1000V	700V	1000V

Electrical Characteristics @ 25°C Unless Otherwise Specified

Average Forward current	$I_{F(AV)}$	1.0A	T_J = 75°C
Peak Forward Surge Current	I_{FSM}	50A	8.3ms, half sine, T_J = 150°C
Maximum Instantaneous Forward Voltage	V_F	1.1V	I_{FM} = 1.0A; T_J = 25°C*
Maximum DC Reverse Current At Rated DC Blocking Voltage	I_R	10µA 50µA	T_J = 25°C T_J = 125°C
Maximum Reverse Recovery Time	T_{rr}	1.8µs	I_F=0.5A, I_R=1.0A, I_{rr}=0.25A
Typical Junction Capacitance	C_J	15pF	Measured at 1.0MHz, V_R=4.0V

*Pulse test: Pulse width 300 µsec, Duty cycle 2%

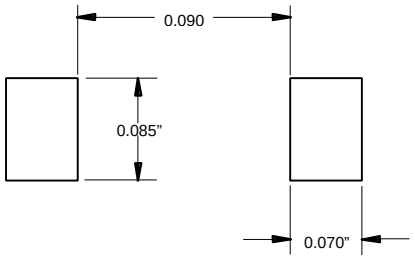
DO-214AA (SMBJ)



DIMENSIONS					
	INCHES		MM		
DIM	MIN	MAX	MIN	MAX	NOTE
A	.075	.115	1.90	2.92	1
B	.081	.087	2.06	2.21	
C	.004	.008	.10	.20	
D	---	.02	---	.51	
E	.030	.060	.76	1.52	
F	.065	.084	1.65	2.13	
G	.205	.220	5.21	5.59	
H	.160	.180	4.06	4.57	
J	.130	.155	3.30	3.94	

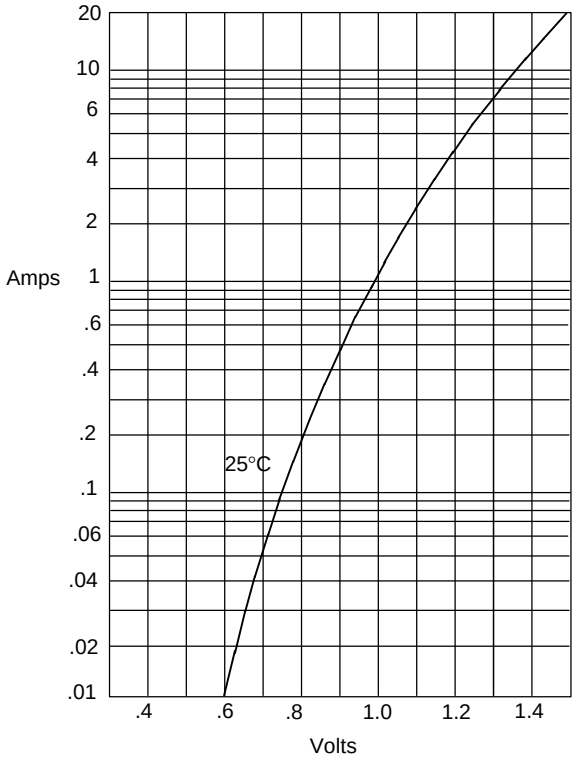
1) Maximum Jedec Spec is .096" or 2.44 MM

SUGGESTED SOLDER PAD LAYOUT



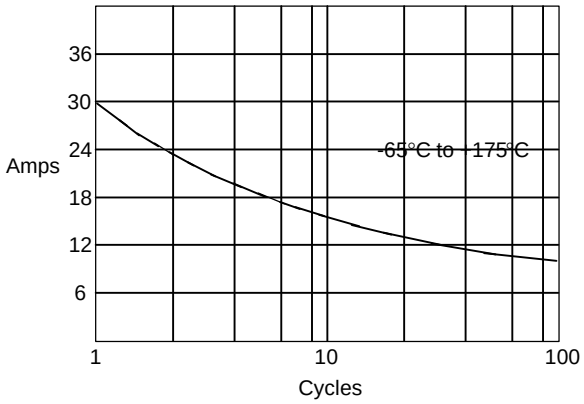
S1A thru S1M

Figure 1
Typical Forward Characteristics



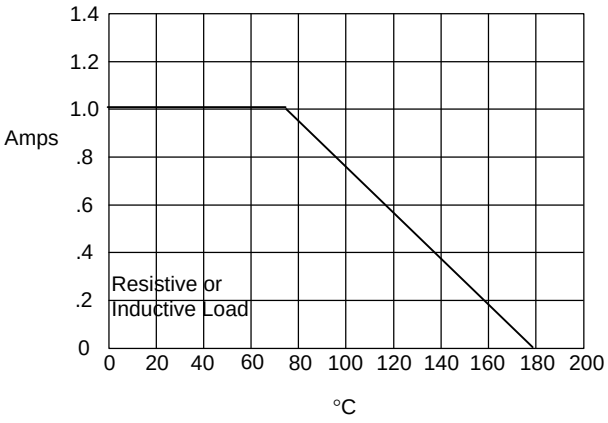
Instantaneous Forward Current - Amperes *versus*
Instantaneous Forward Voltage - Volts

Figure 3
Maximum Overload Surge Current



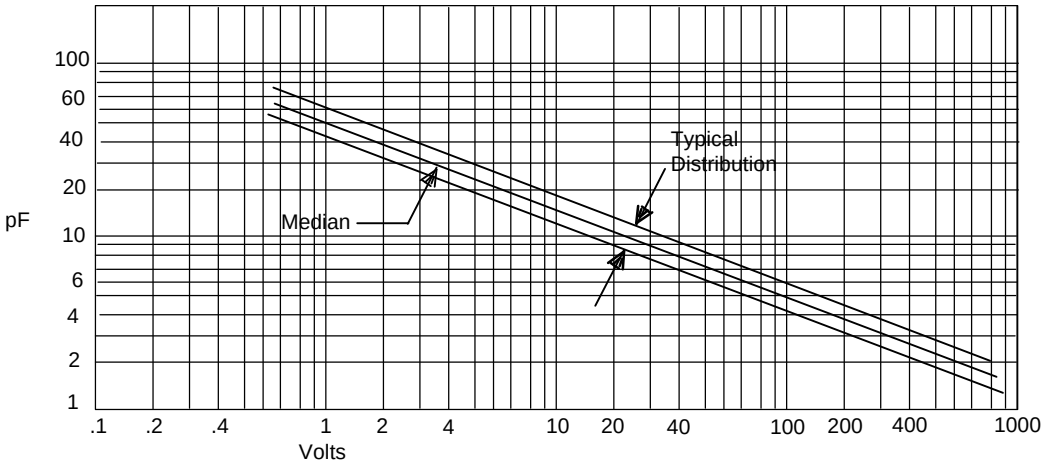
Peak Forward Current - Amperes *versus*
Number of Cycles at 60Hz

Figure 4
Forward Derating Curve



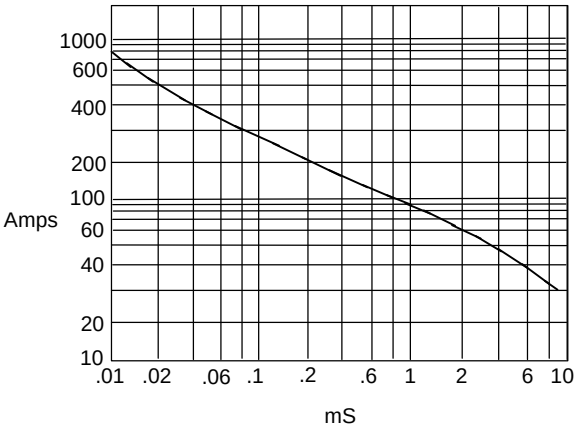
Average Forward Rectified Current - Amperes *versus*
Ambient Temperature -°C

Figure 2
Junction Capacitance



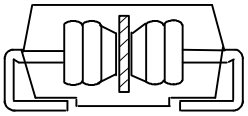
Junction Capacitance - pF *versus*
Reverse Junction Potential (Applied V + 0.7 Volts) - Volts

Figure 5
Peak Forward Surge Current



Peak Forward Surge Current - Amperes *versus*
Pulse Duration - Milliseconds (mS)

Figure 6
New SMB Assembly



Round Lead
Process