S1AB THRU S1MB

1.0 AMP. Surface Mount Rectifiers

TSC

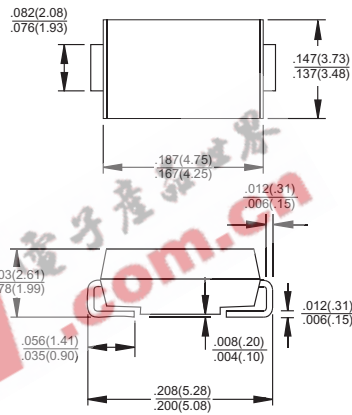Voltage Range
50 to 1000 Volts
Current
1.0 Ampere

SMB/DO-214AA

Features

◇ For surface mounted application
◇ Glass passivated junction chip.
◇ Low forward voltage drop
◇ High current capability
◇ Easy pick and place
◇ High surge current capability
◇ Plastic material used carries Underwriters
  Laboratory Classification 94V-O
◇ High temperature soldering:
  260°C / 10 seconds at terminals

Mechanical Data

◇ Case: Molded plastic
◇ Terminals: Solder plated
◇ Polarity: Indicated by cathode band
◇ Packaging: 12mm tape per EIA STD RS-481
◇ Weight: 0.093 gram

.082(2.08)
.076(1.93)

.147(3.73)
.137(3.48)

.187(4.75)
.167(4.25)

.012(.31)
.006(.15)

.103(2.61)
.078(1.99)

.056(1.41)
.035(0.90)

.008(.20)
.004(.10)

.012(.31)
.006(.15)

.208(5.28)
.200(5.08)

Dimensions in inches and (millimeters)

Maximum Ratings and Electrical Characteristics

Rating at 25℃ ambient temperature unless otherwise specified.

Single phase, half wave, 60 Hz, resistive or inductive load.

For capacitive load, derate current by 20%

Type Number	Symbol	S1 AB	S1 BB	S1 DB	S1 GB	S1 JB	S1 KB	S1 MB	Units
Maximum Recurrent Peak Reverse Voltage	V_{RRM}	50	100	200	400	600	800	1000	V
Maximum RMS Voltage	V_{RMS}	35	70	140	280	420	560	700	V
Maximum DC Blocking Voltage	V_{DC}	50	100	200	400	600	800	1000	V
Maximum Average Forward Rectified Current @T_L =110℃	$I_{(AV)}$	1.0							A
Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method)	I_{FSM}	30							A
Maximum Instantaneous Forward Voltage @ 1.0A	V_F	1.1							V
Maximum DC Reverse Current @ T_A =25℃ at Rated DC Blocking Voltage @ T_A=125℃	I_R	5 50							uA uA
Typical Thermal Resistance (Note 2)	$R\theta_{JL}$	30							℃/W
Typical Junction Capacitance (Note 1)	C_j	12							pF
Operating Temperature Range	T_J	-55 to +150							℃
Storage Temperature Range	T_{STG}	-55 to +150							℃

Notes: 1. Measured at 1 MHz and Applied V_R=4.0 Volts
   2. Measured on P.C. Board with 0.27 x 0.27" (7.0 x 7.0mm) Copper Pad Areas.

RATINGS AND CHARACTERISTIC CURVES (S1AB THRU S1MB)

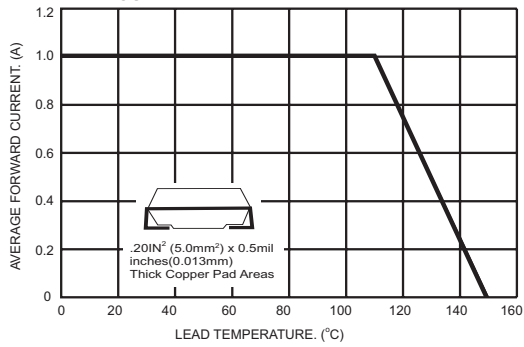## FIG.1- MAXIMUM FORWARD CURRENT DERATING CURVE

AVERAGE FORWARD CURRENT. (A) vs LEAD TEMPERATURE. (°C)
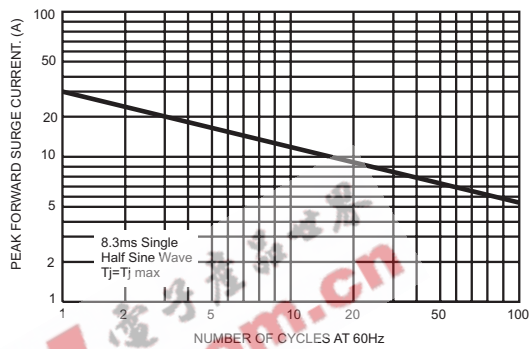
.20IN² (5.0mm²) x 0.5mil inches(0.013mm) Thick Copper Pad Areas

FIG.2- MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

PEAK FORWARD SURGE CURRENT. (A) vs NUMBER OF CYCLES AT 60Hz

8.3ms Single Half Sine Wave
Tj=Tj max

FIG.3- TYPICAL FORWARD CHARACTERISTICS

INSTANTANEOUS FORWARD CURRENT. (A) vs FORWARD VOLTAGE. (V)
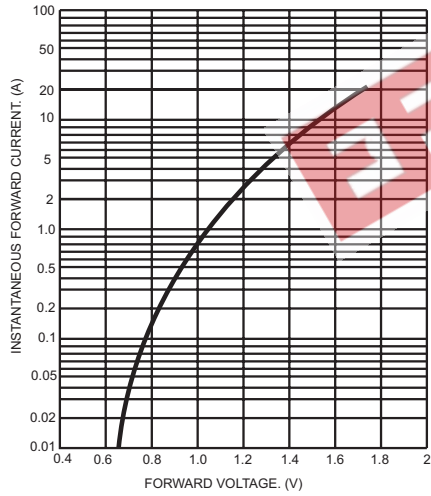
FIG.4- TYPICAL REVERSE CHARACTERISTICS

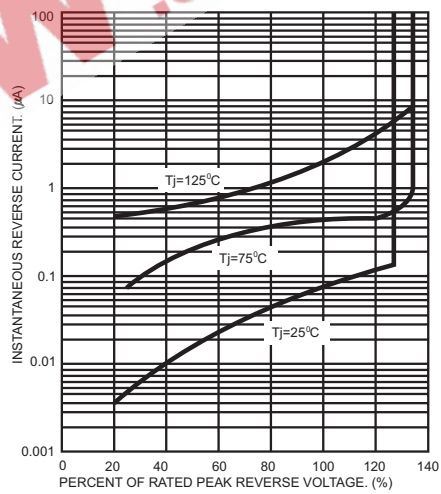INSTANTANEOUS REVERSE CURRENT. (μA) vs PERCENT OF RATED PEAK REVERSE VOLTAGE. (%)

Tj=125°C
Tj=75°C
Tj=25°C

FIG.5- TYPICAL JUNCTION CAPACITANCE

JUNCTION CAPACITANCE. (pF) vs REVERSE VOLTAGE. (V)

Tj=25°C
f=1.0MHz
Vsig=50mVp-p