SMC
DIODE SOLUTIONS

S1A-S1M

Technical Data
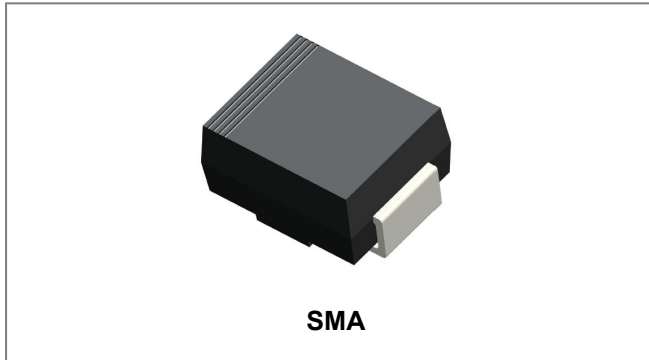**Data Sheet N0560, Rev. B**

RoHS Pb

S1A THRU S1M
1.0A SURFACE MOUNT GLASS PASSIVATED RECTIFIER

SMA

Features

- **Glass Passivated Die Construction**
- **Ideally Suited for Automatic Assembly**
- **Low Forward Voltage Drop**
- **Low Power Loss**
- **Built-in Strain Relief**
- **Plastic Case Material has UL Flammability Classification Rating 94V-0**
- **This is a Pb − Free Device**
- **All SMC parts are traceable to the wafer lot**
- **Additional testing can be offered upon request**

Circuit Diagram

Cathode ○ ◄| ○ Anode

Mechanical Data

- **Case: SMA molded plastic body**
- **Terminals: Solder plated, solderable per MIL-STD-750, Method 2026**
- **Polarity: Color band denotes cathode end**
- **Mounting Position: Any**
- **Weight: 0.06 grams**

Maximum Ratings and Electrical Characteristics @T_A=25°C unless otherwise specified

Type Number	Symbol	S1A	S1B	S1D	S1G	S1J	S1K	S1M	Units
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	50	100	200	400	600	800	1000	V
Maximum RMS voltage	V_{RMS}	35	70	140	280	420	560	700	V
Average Rectified Output Current @T_L= 100°C	I_O	1.0							A
Non-Repetitive Peak Forward Surge Current 8.3ms Single half sine-wave superimposed on rated load (JEDEC Method)	I_{FSM}	30							A
Forward Voltage @ I_F = 1.0 A	V_F	1.10							V
Peak Reverse Current @T_A = 25°C At Rated DC Blocking Voltage @T_A = 125°C	I_{RM}	5.0 200							µA
Reverse Recovery Time(Note1)	t_{rr}	2.5							µS
Typical Junction Capacitance(Note2)	C_J	15							pF
Typical Thermal Resistance Junction to Lead (Note 3)	$R_{\theta JL}$	30							°C/W
Operating and Storage Temperature Range	T_J,T_{STG}	-65 to +175							°C

Note: 1. Reverse recovery condition IF=0.5A, IR=1.0A, Irr=0.25A
2. Measured at 1MHz and applied reverse voltage of 4.0V D.C.
3. Mounted on P.C.B.with 8.0mm² land areas.
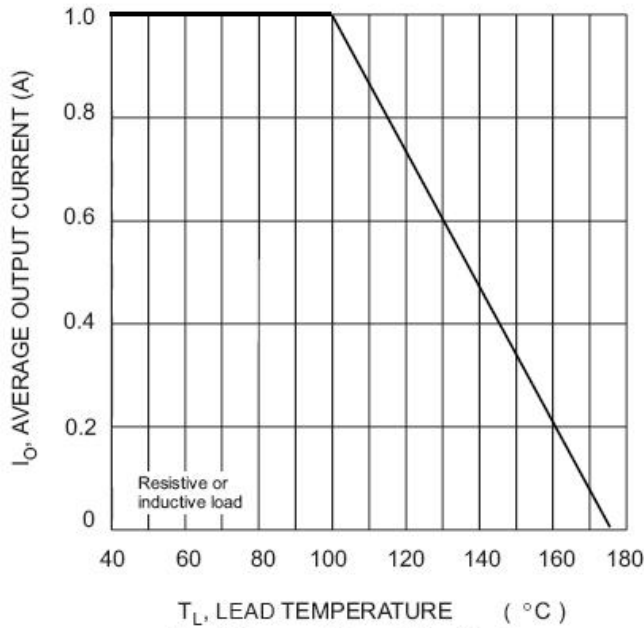
Ratings and Characteristics Curves
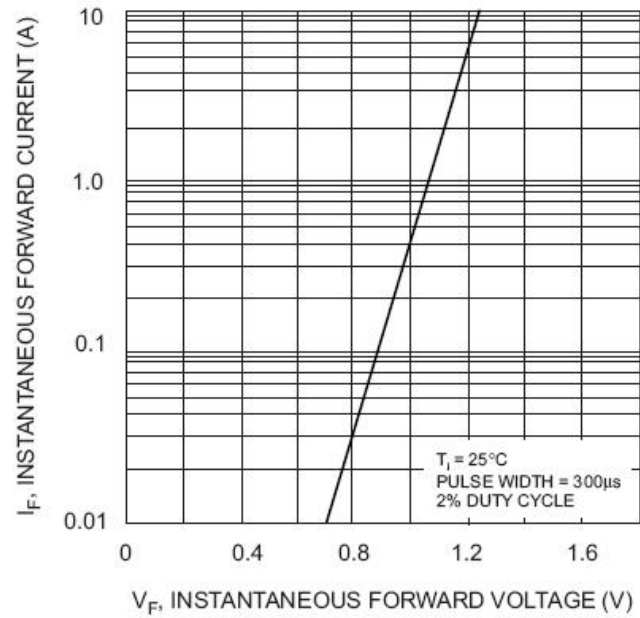

Fig. 1 Forward Current Derating Curve

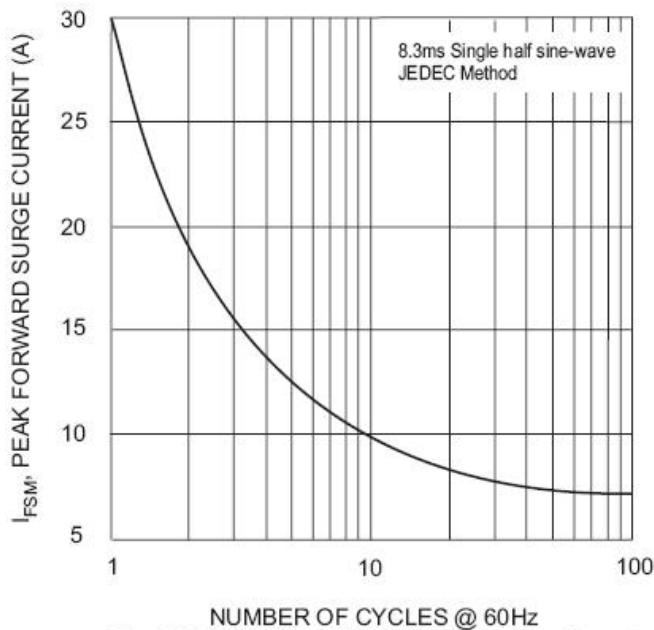I_O, AVERAGE OUTPUT CURRENT (A) vs T_L, LEAD TEMPERATURE (°C)

Resistive or inductive load

Fig. 2 Typical Forward Characteristics

I_F, INSTANTANEOUS FORWARD CURRENT (A) vs V_F, INSTANTANEOUS FORWARD VOLTAGE (V)

$T_j = 25°C$
PULSE WIDTH = 300µs
2% DUTY CYCLE

Fig. 3 Max Non-Repetitive Peak Fwd Surge Current

I_{FSM}, PEAK FORWARD SURGE CURRENT (A) vs NUMBER OF CYCLES @ 60Hz

8.3ms Single half sine-wave JEDEC Method
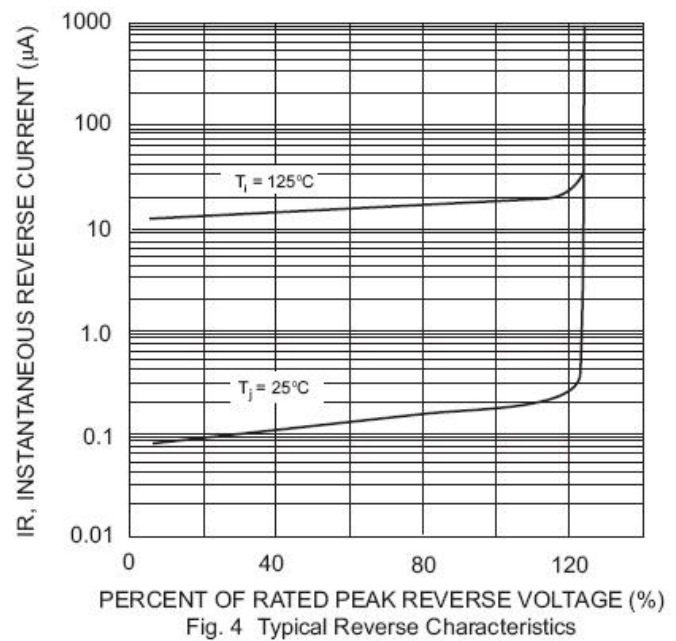
Fig. 4 Typical Reverse Characteristics

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

$T_j = 125°C$

$T_j = 25°C$

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RoHS

Mechanical Dimensions SMA
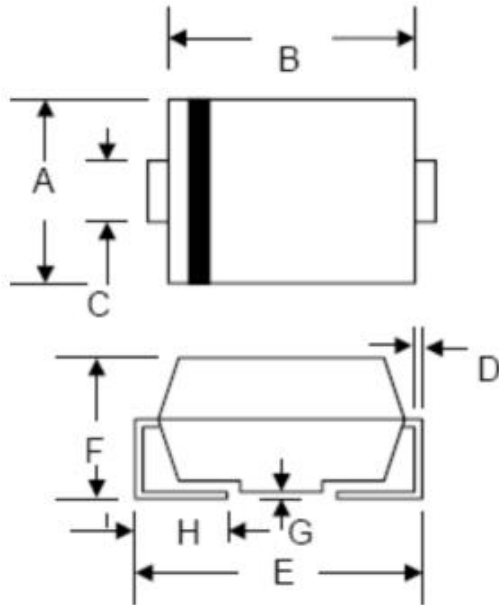
SYMBOL	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	2.40	2.84	0.094	0.112
B	3.99	4.75	0.157	0.187
C	1.05	1.70	0.041	0.067
D	0.15	0.51	0.006	0.020
E	4.80	5.66	0.189	0.223
F	1.90	2.95	0.075	0.116
G	0.05	0.203	0.002	0.008
H	0.76	1.52	0.030	0.600

Ordering Information

Device	Package	Shipping
S1A-S1M	SMA (Pb-Free)	5000pcs / reel

For information on tape and reel specifications, including part orientation and tape sizes, please refer to our tape and reel packaging specification.
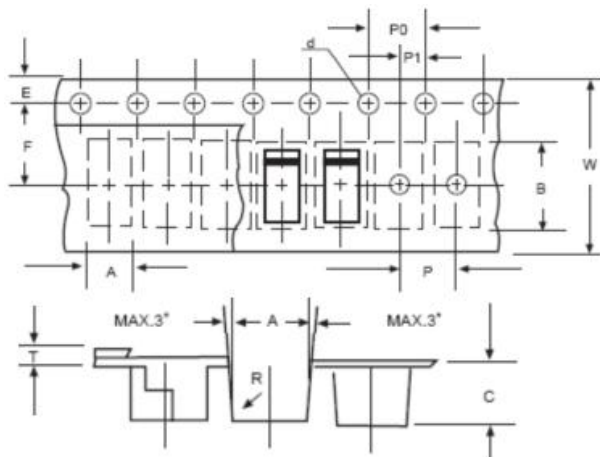
Marking Diagram

Where XXXXX is YYWWL

S1A	= Type Number
YY	= Year
WW	= Week
L	= Lot Number

Cautions：Molding resin
Epoxy resin UL:94V-0

Carrier Tape Specification SMA

SYMBOL	Millimeters	
	Min.	Max.
A	2.97	3.17
B	5.70	5.90
C	2.32	2.52
d	1.40	1.60
E	1.40	1.60
F	5.60	5.70
P	3.90	4.10
P0	3.90	4.10
P1	1.90	2.10
T	0.25	0.35
W	11.80	12.20

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