

Pb Free Plating Product

## S1A thru S1M



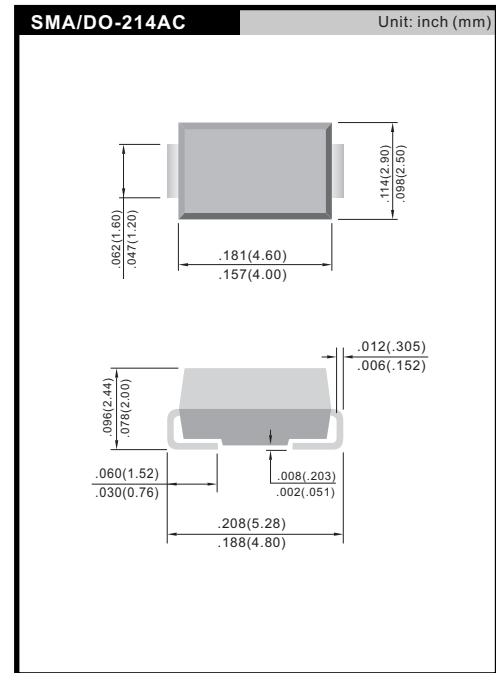
1.0 Ampere Surface Mount Glass Passivated General Purpose Rectifiers

## Features

- Glass passivated chip junction
- Ideal for automated placement
- Low forward voltage drop
- Moisture sensitivity level: level 1, per J-STD-020
- RoHS Compliant

## Mechanical Data

- Case: DO-214AC (SMA)
- Molding compound meets UL 94V-0 flammability rating
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 2 whisker test
- Polarity: Indicated by cathode band
- Weight: 0.060g (approximately)



## ABSOLUTE MAXIMUM RATINGS ( $T_A = 25^\circ\text{C}$ unless otherwise noted)

PARAMETER	SYMBOL	S1A	S1B	S1D	S1G	S1J	S1K	S1M	UNIT	
Marking code on the device	THINKI	S1A	S1B	S1D	S1G	S1J	S1K	S1M		
Repetitive peak reverse voltage	$V_{RRM}$	50	100	200	400	600	800	1000	V	
Reverse voltage, total rms value	$V_{R(RMS)}$	35	70	140	280	420	560	700	V	
Forward current	$I_F$	1								A
Peak forward surge current, 8.3ms single half sine wave superimposed on rated load	$I_{FSM}$	40							30	A
Non-repetitive peak reverse avalanche energy, $I_{AS} = 1A$ , $L = 10mH$	$E_{RSM}$	5								mJ
Junction temperature	$T_J$	- 55 to +175								$^\circ\text{C}$
Storage temperature	$T_{STG}$	- 55 to +175								$^\circ\text{C}$

THERMAL PERFORMANCE					
PARAMETER		SYMBOL	TYP	UNIT	
Junction-to-lead thermal resistance	S1A S1B S1D S1G S1J	$R_{\theta JL}$	27	°C/W	
	S1K S1M		30	°C/W	
Junction-to-ambient thermal resistance	S1A S1B S1D S1G S1J	$R_{\theta JA}$	75	°C/W	
	S1K S1M		85	°C/W	

ELECTRICAL SPECIFICATIONS ( $T_A = 25^\circ\text{C}$ unless otherwise noted)					
PARAMETER	CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage <sup>(1)</sup>	$I_F = 1\text{A}$ , $T_J = 25^\circ\text{C}$	$V_F$	0.95	1.1	V
Reverse current @ rated $V_R$ <sup>(2)</sup>	$T_J = 25^\circ\text{C}$	$I_R$	-	1	$\mu\text{A}$
	$T_J = 125^\circ\text{C}$		-	50	$\mu\text{A}$
Junction capacitance	1MHz, $V_R = 4.0\text{V}$	$C_J$	12	-	pF
Reverse recovery time	$I_F = 0.5\text{A}$ , $I_R = 1.0\text{A}$ , $I_{rr} = 0.25\text{A}$	$t_{rr}$	1500	-	ns

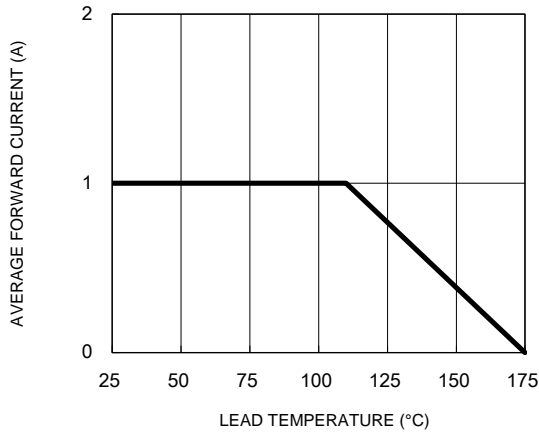
**Notes:**

1. Pulse test with PW = 0.3ms
2. Pulse test with PW = 30ms

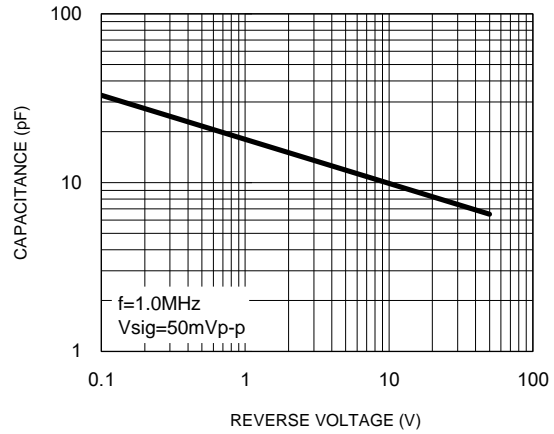
**CHARACTERISTICS CURVES**

( $T_A = 25^\circ\text{C}$  unless otherwise noted)

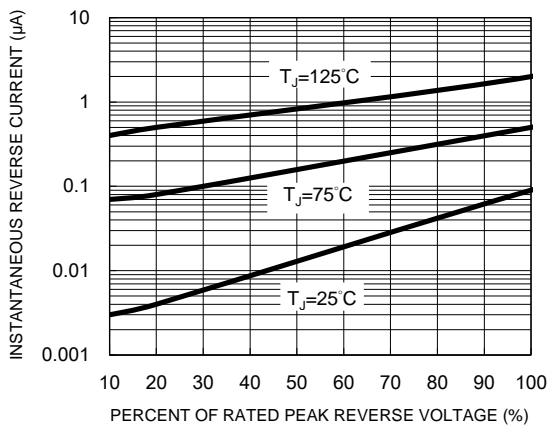
**Fig.1 Forward Current Derating Curve**



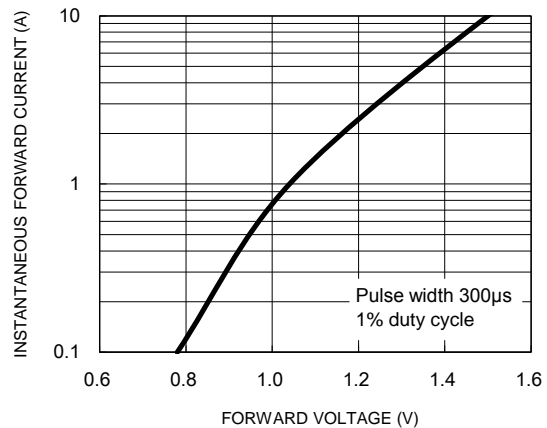
**Fig.2 Typical Junction Capacitance**



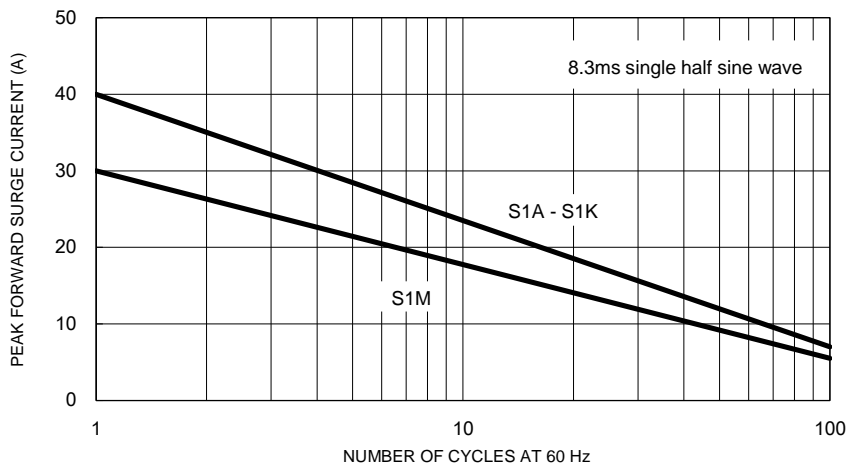
**Fig.3 Typical Reverse Characteristics**



**Fig.4 Typical Forward Characteristics**



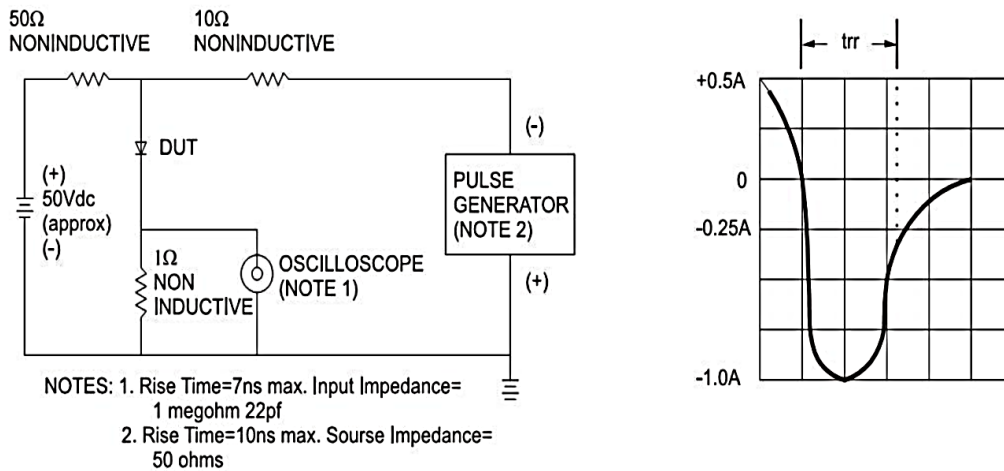
**Fig.5 Maximum Non-Repetitive Forward Surge Current**



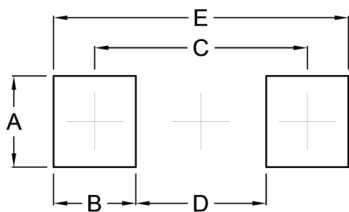
**CHARACTERISTICS CURVES**

( $T_A = 25^\circ\text{C}$  unless otherwise noted)

**Fig.6 Reverse Recovery Time Characteristic And Test Circuit Diagram**



**SUGGESTED PAD LAYOUT**



Symbol	Unit (mm)	Unit (inch)
A	1.68	0.066
B	1.52	0.060
C	3.93	0.155
D	2.41	0.095
E	5.45	0.215