

# S1A THRU S1M (DO-214AC)

**SURFACE MOUNT RECTIFIERS**  
 Reverse Voltage – 50 to 1000 Volts  
 Forward Current – 1.0 Ampere

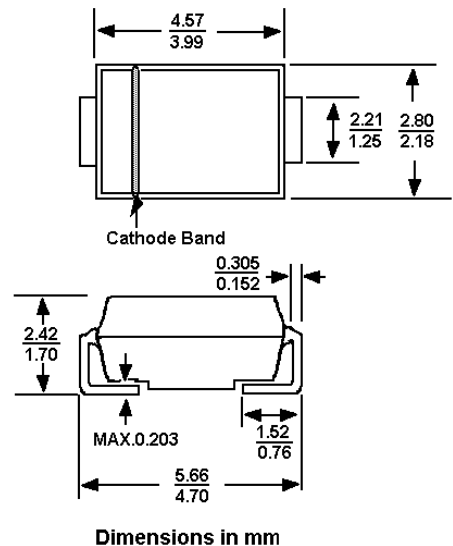
## Features

- Plastic package has Underwriters Laboratories Flammability Classification 94V-0
- Glass passivated chip junction
- For surface mount application
- Low profile package
- Built-in strain relief, ideal for automated placement

## Mechanical Data

- Case: JEDEC DO-214AC, molded plastic over passivated chip
- Terminals: Solder plated, solderable per MIL-STD-750, Method 2026
- High temperature solder: 250° /10 seconds at terminals
- Polarity: Color band denotes cathode end

SMA DO-214AC

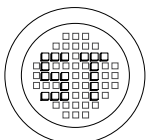


## Absolute Maximum Ratings and Characteristics

Ratings at 25°C ambient temperature unless otherwise specified.

	Symbols	S1A	S1B	S1D	S1G	S1J	S1K	S1M	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	$I_{F(AV)}$	1.0							A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method) $T_L = 110^\circ\text{C}$	$I_{FSM}$	40					30		A
Maximum Instantaneous forward voltage at 1.0A	$V_F$	1.1							V
Maximum DC reverse current at $T_A = 25^\circ\text{C}$ at rated DC blocking voltage at $T_A = 125^\circ\text{C}$	$I_R$ $I_R$	1.0					5.0		$\mu\text{A}$
Typical Junction Capacitance at $V_R = 4.0\text{V}$ , $f = 1\text{MHz}$	$C_{tot}$	12							pF
Typical Reverse Recovery Time at $I_F = 0.5\text{A}$ , $I_R = 1.0\text{A}$ , $I_{rr} = 0.25\text{A}$	$t_{rr}$	1.8							$\mu\text{s}$
Typical thermal resistance (Note 1)	$R_{\theta JA}$ $R_{\theta JL}$	75 27					85 30		$^\circ\text{C/W}$
Operating junction and storage temperature range	$T_J, T_S$	-55 to +150							$^\circ\text{C}$

Notes: 1. Thermal resistance from junction to ambient from junction to lead mounted on P.C.B. with 0.2 x 0.2" (5.0 x 5.0mm<sup>2</sup>) copper pad areas



®

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# S1A THRU S1M (DO-214AC)

FIG.1-FORWARD DERATING CURVE

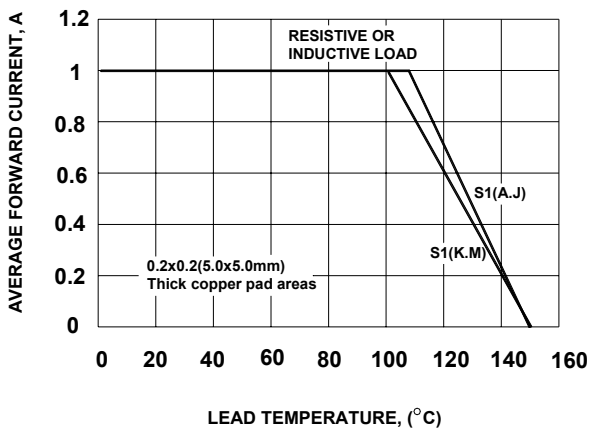


FIG.2- PEAK FORWARD SURGE CURRENT

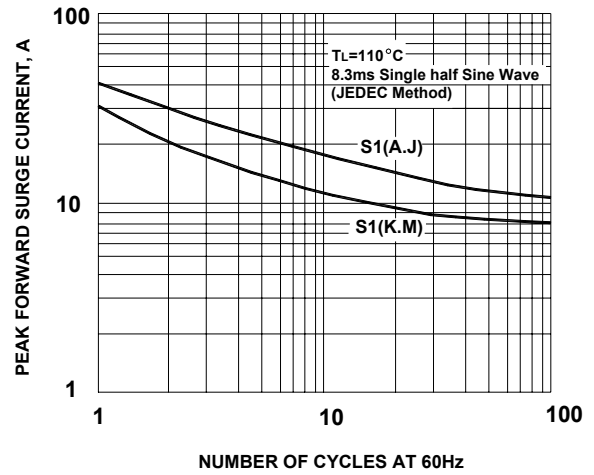


FIG.3-TYPICAL FORWARD CHARACTERISTICS

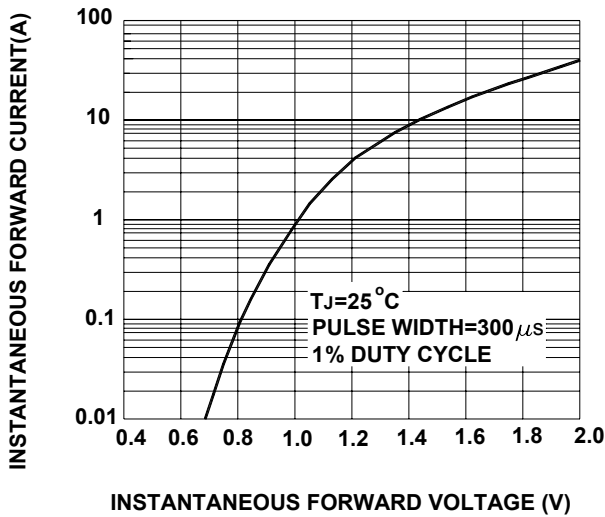


FIG.4-TYPICAL REVERSE CHARACTERISTICS

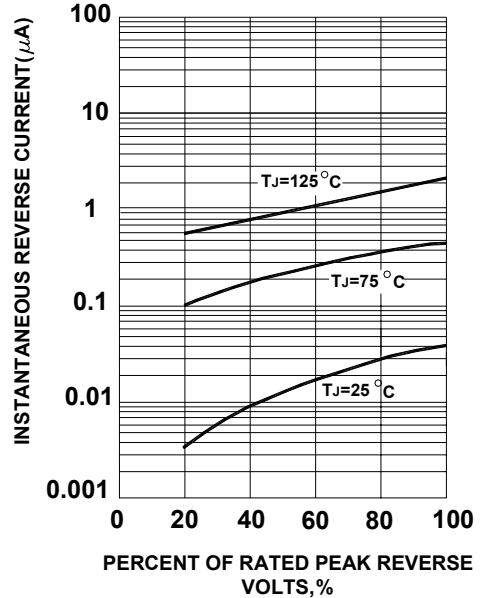


FIG.5- TYPICAL JUNCTION CAPACITANCE

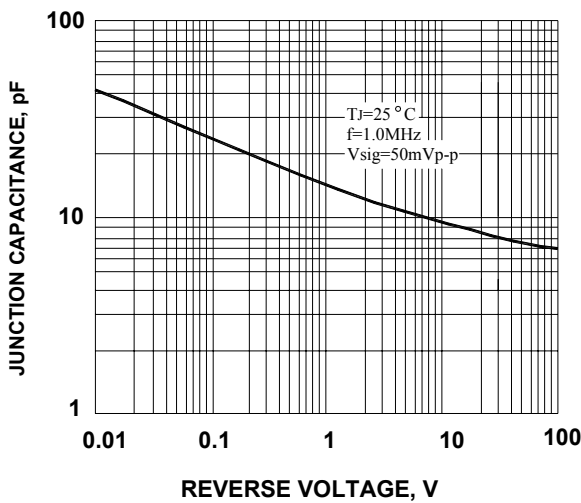
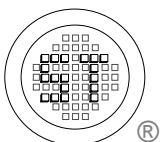
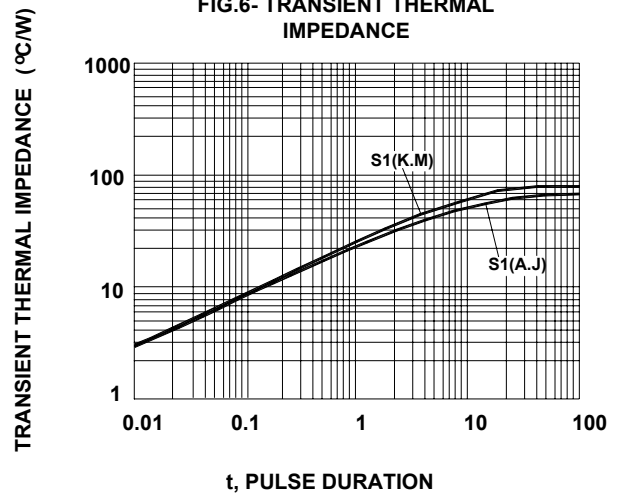


FIG.6- TRANSIENT THERMAL IMPEDANCE



**SEMTECH ELECTRONICS LTD.**

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ISO/TS 16949 : 2002  
Certificate No. 05103



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ISO 9001 : 2000  
Certificate No. 055-1964-00-04