

# S1A thru S1M SERIES

## SURFACE MOUNT RECTIFIER



**CHENG-YI  
ELECTRONIC**



### FEATURES

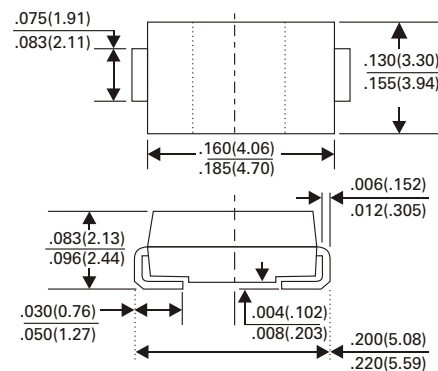
- For surface mounted applications
- High temperature metallurgically bonded-no compression contacts as found in other diode-constructed rectifiers
- Glass passivated junction
- Built-in strain relief
- Easy pick and place
- Plastic package has Underwrites Laboratory Flamability Classification 94V-O
- Complete device submersible temperature of 260°C for 10 seconds solder bath

### MECHANICAL DATA

- Case: JEDEC DO-214AA molded plastic
- Terminals: Solder plated solderable per MIL-STD-750, Method 2026
- Polarity: Indicated by cathode band
- Standard Packaging: 12mm tape (EIA STD EIA-481)
- Weight: 0.003 ounce, 0.093 gram

VOLTAGE RANGE 50 TO 1000 Volts  
CURRENT 1.0 Amperes

### SMB/DO-214AA



Dimensions in inches and (millimeters)

### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.  
Single phase, half wave, 60Hz, resistive or inductive load.  
For capacitive load, derate current by 20%.

RATINGS	SYMBOL	S1A	S1B	S1D	S1G	S1J	S1K	S1M	UNITS
Maximum Recurrent Peak Reverse Voltage	$V_{RRM}$	50	100	200	400	600	800	1000	Volts
Maximum RMS Voltage	$V_{RMS}$	35	70	140	280	420	560	700	Volts
Maximum DC Blocking Voltage	$V_{DC}$	50	100	200	400	600	800	1000	Volts
Maximum Average Forward Rectified Current, at $T_L=100^\circ\text{C}$	$I_{(AV)}$	1.0							Amps
Peak Forward Surge Current 8.3 ms single half sine-wave superimposed on rated load (JEDEC method)	$I_{FSM}$	30.0							Amps
Maximum Instantaneous Forward Voltage at 1.0A	$V_F$	1.10							Volts
Maximum DC Reverse Current at Rated DC Blocking Voltage	$I_R$	5.0							$\mu\text{A}$
		200							
Maximum Reverse Recovery Time (Note 1)	$T_{RR}$	2.5							$\mu\text{S}$
Typical Junction Capacitance (Note 2)	$C_J$	15.0							pF
Maximum Thermal Resistance (Note 3)	$R_{\theta JL}$	30.0							$^\circ\text{C} / \text{W}$
Operating and Storage Temperature Range	$T_J$ $T_{STG}$	-50 to +150							$^\circ\text{C}$

Notes : 1. Reverse Recovery Test Conditions:  $I_F=0.5\text{A}$ ,  $I_R=1.0\text{A}$ ,  $I_{rr}=0.25\text{A}$   
2. Measured at 1 MHz and Applied  $V_r= 4.0$  volts  
3. 8.0mm<sup>2</sup>(0.13mm thick) land areas

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### RATING AND CHARACTERISTICS CURVES S1A THRU S1M

Fig.1 - FORWARD CURRENT DERATING CURVE

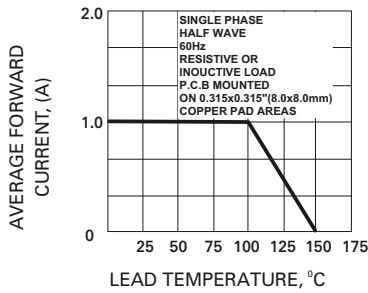


Fig.2 - MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

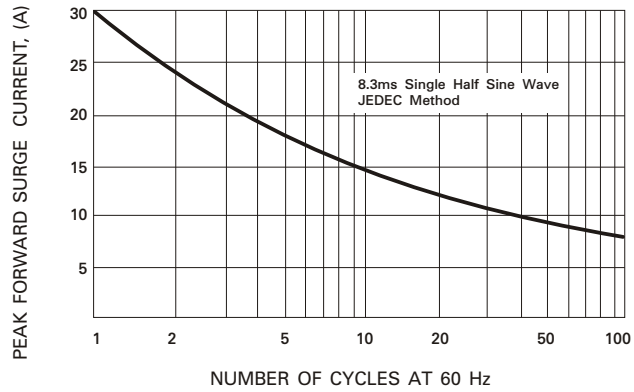


Fig.3 - TYPICAL REVERSE CHARACTERISTICS

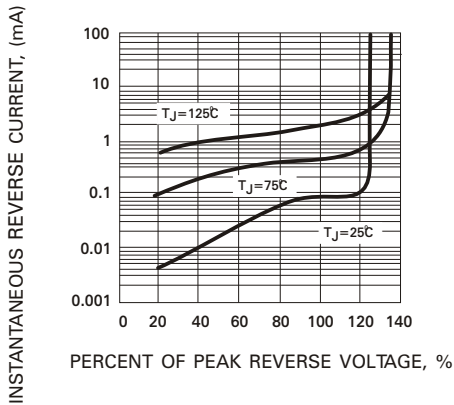


Fig.4 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

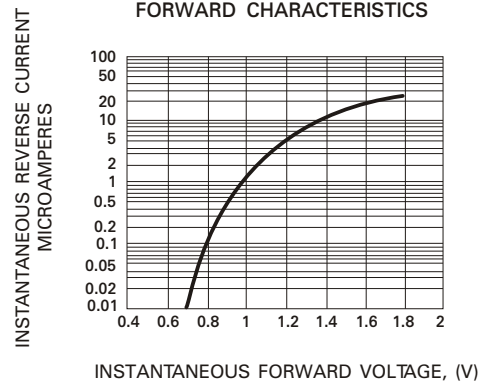


Fig.5 - TRANSIENT THERMAL IMPEDANCE

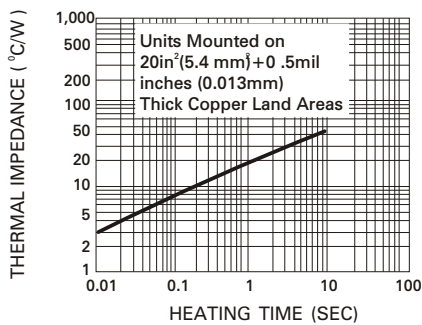


Fig.6 - TYPICAL JUNCTION CAPACITANCE

