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May 2015

# S2A - S2M

## General-Purpose Rectifiers (Glass Passivated)

### Features

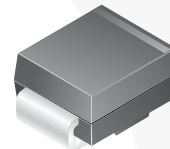
- High-Current Capability, 2 A Rated
- Fast Response:  $2 \mu\text{s}$   $T_{rr}$
- Low-Forward Voltage Drop, 1.15 V  $V_F$  Max at 2 A
- High-Surge Current Capability,  $50 \text{ A}^2\text{s}$   $I_{FSM}$
- Glass Passivated Junction
- RoHS Compliant
- UL Certified, UL #E258596

### Applications

- Power Supplies
- AC to DC Rectification
- Bypass Diodes

### Description

The S2 family of devices are general-purpose 2 A rated rectifiers with voltage ratings ranging from 50 to 1000 V. They are implemented in traditional SMB packages and are well known to the industry. For advanced or special requirements, please contact a Fairchild Semiconductor representative.



**SMB/DO-214AA**  
COLOR BAND DENOTES CATHODE

### Ordering Information

Part Number	Marking	Package	Packing Method
S2A	S2A	DO-214AA (SMB)	Tape and Reel
S2B	S2B		
S2D	S2D		
S2G	S2G		
S2J	S2J		
S2K	S2K		
S2M	S2M		

## Absolute Maximum Ratings

Stresses exceeding the absolute maximum ratings may damage the device. The device may not function or be operable above the recommended operating conditions and stressing the parts to these levels is not recommended. In addition, extended exposure to stresses above the recommended operating conditions may affect device reliability. The absolute maximum ratings are stress ratings only. Values are at  $T_A = 25^\circ\text{C}$  unless otherwise noted.

Symbol	Parameter	Value							Unit
		S2A	S2B	S2D	S2G	S2J	S2K	S2M	
$V_{RRM}$	Maximum Repetitive Reverse Voltage	50	100	200	400	600	800	1000	V
$I_{F(AV)}$	Average Rectified Forward Current at $T_A = 100^\circ\text{C}$	2.0							A
$I_{FSM}$	Non-Repetitive Peak Forward Surge Current 8.3 ms Single Half-Sine Wave	50							A
$T_{STG}$	Storage Temperature Range	-65 to +150							$^\circ\text{C}$
$T_J$	Operating Junction Temperature	-65 to +150							$^\circ\text{C}$

## Thermal Characteristics

Values are at  $T_A = 25^\circ\text{C}$  unless otherwise noted.

Symbol	Parameter	Value	Unit
$P_D$	Power Dissipation	2.35	W
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient <sup>(1)</sup>	53	$^\circ\text{C}/\text{W}$

### Note:

1. Device mounted on FR-4 PCB 0.013 mm.

## Electrical Characteristics

Values are at  $T_A = 25^\circ\text{C}$  unless otherwise noted.

Symbol	Parameter	Conditions	Value						Unit
			S2A	S2B	S2D	S2G	S2J	S2K	
$V_F$	Maximum Forward Voltage	$I_F = 2.0\text{ A}$	1.15						V
$t_{rr}$	Typical Reverse-Recovery Time	$I_F = 0.5\text{ A}$ , $I_R = 1.0\text{ A}$ , $I_{rr} = 0.25\text{ A}$	2.0						$\mu\text{s}$
$I_R$	Maximum Reverse Current at Rated $V_R$	$T_A = 25^\circ\text{C}$	1.0						$\mu\text{A}$
		$T_A = 125^\circ\text{C}$	125						
$C_T$	Typical Total Capacitance	$V_R = 4.0\text{ V}$ , $f = 1.0\text{ MHz}$	30						pF

### Typical Performance Characteristics

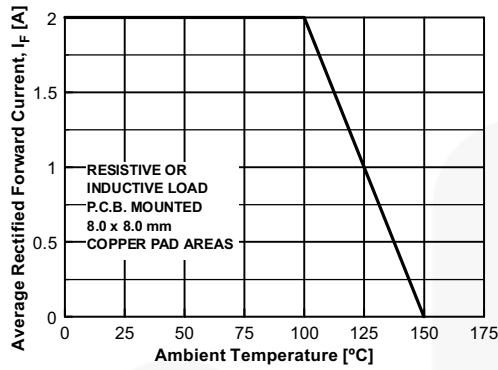


Figure 1. Forward Current Derating Curve

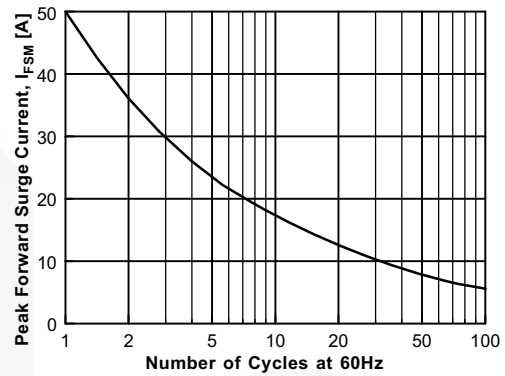


Figure 2. Non-Repetitive Surge Current

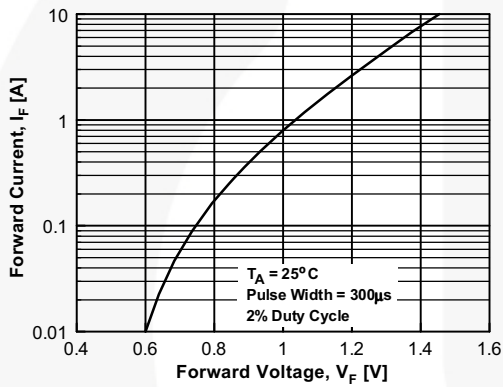


Figure 3. Forward Voltage Characteristics

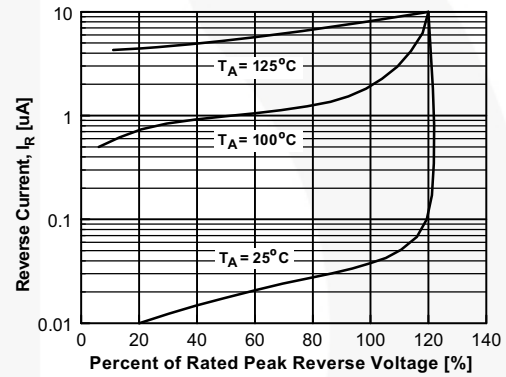


Figure 4. Reverse Current vs. Reverse Voltage

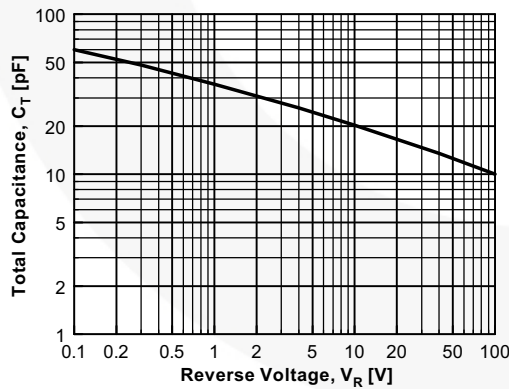







Figure 5. Total Capacitance





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