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May 2015

S2A - S2M
General-Purpose Rectifiers (Glass Passivated)

Features

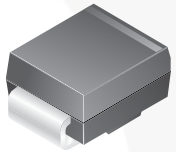
- High-Current Capability, 2 A Rated
- Fast Response: 2 µs T_{rr}
- Low-Forward Voltage Drop, 1.15 V V_F Max at 2 A
- High-Surge Current Capability, 50 A^2s I_{FSM}
- Glass Passivated Junction
- RoHS Compliant
- UL Certified, UL #E258596

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°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°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							°C
T_J	Operating Junction Temperature	-65 to +150							°C

Thermal Characteristics

Values are at T_A = 25°C unless otherwise noted.

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

Note:

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

Electrical Characteristics

Values are at T_A = 25°C unless otherwise noted.

Symbol	Parameter	Conditions	Value							Unit
			S2A	S2B	S2D	S2G	S2J	S2K	S2M	
V_F	Maximum Forward Voltage	I_F = 2.0 A	1.15							V
t_{rr}	Typical Reverse-Recovery Time	I_F = 0.5 A, I_R = 1.0 A, I_{rr} = 0.25 A	2.0							µs
I_R	Maximum Reverse Current at Rated V_R	T_A = 25°C	1.0							µA
		T_A = 125°C	125							
C_T	Typical Total Capacitance	V_R = 4.0 V, f = 1.0 MHz	30							pF

Typical Performance Characteristics

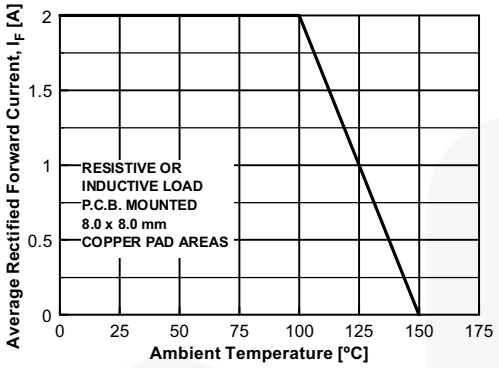


Figure 1. Forward Current Derating Curve

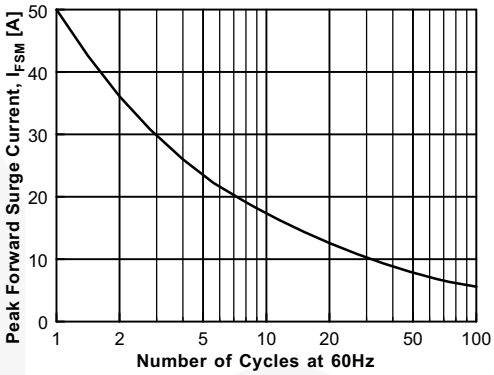


Figure 2. Non-Repetitive Surge Current

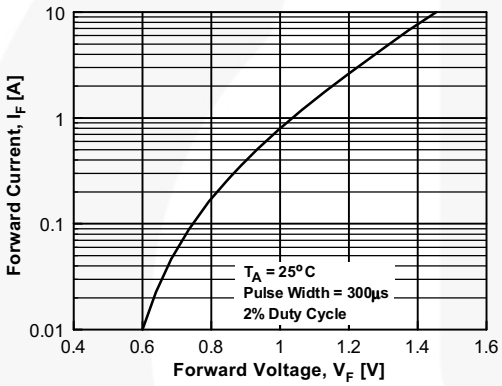


Figure 3. Forward Voltage Characteristics

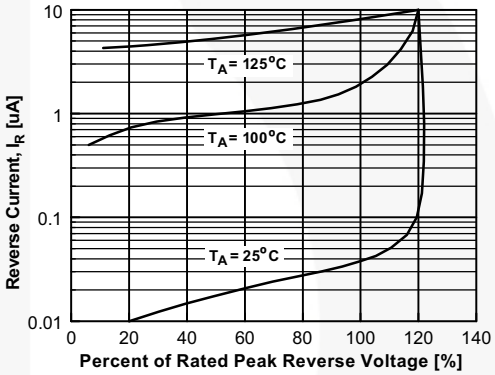


Figure 4. Reverse Current vs. Reverse Voltage

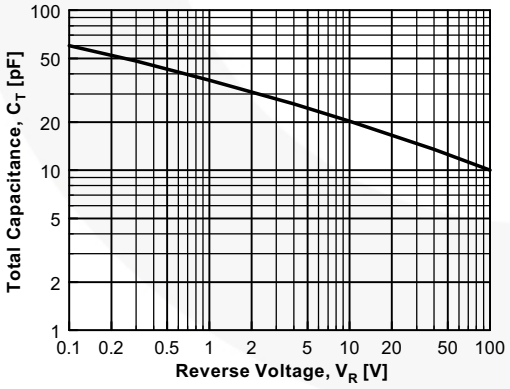
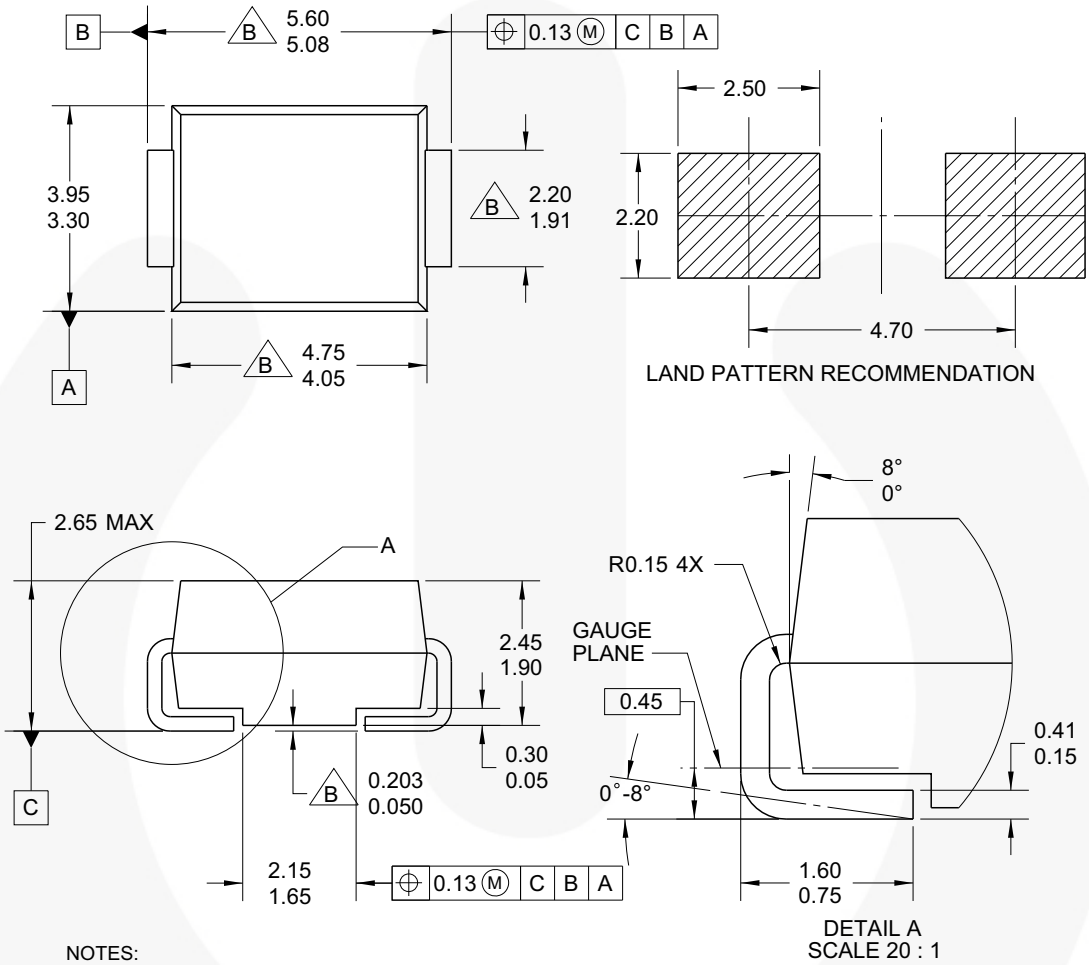


Figure 5. Total Capacitance

Physical Dimensions



NOTES:

A. EXCEPT WHERE NOTED CONFORMS TO JEDEC DO214 VARIATION AA.
B DOES NOT COMPLY JEDEC STD. VALUE.
C. ALL DIMENSIONS ARE IN MILLIMETERS.
D. DIMENSIONS ARE EXCLUSIVE OF BURRS, MOLD FLASH AND TIE BAR PROTRUSIONS.
E. DIMENSION AND TOLERANCE AS PER ASME Y14.5-1994.
F. LAND PATTERN STD. DIOM5336X240M.
G. DRAWING FILE NAME: DO214AAREV1

Figure 6. 2-LEAD, SMB, JEDEC DO-214, VARIATION AA

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Advance Information	Formative / In Design	Datasheet contains the design specifications for product development. Specifications may change in any manner without notice.
Preliminary	First Production	Datasheet contains preliminary data; supplementary data will be published at a later date. Fairchild Semiconductor reserves the right to make changes at any time without notice to improve design.
No Identification Needed	Full Production	Datasheet contains final specifications. Fairchild Semiconductor reserves the right to make changes at any time without notice to improve the design.
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