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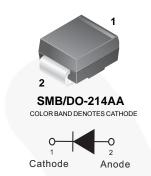


January 2016

S3AB - S3MB 3 A, 50 V - 1000 V Surface Mount Rectifiers

Features

- · Glass Passivated Chip Junction
- · High Surge Current Capacity
- Low Forward Voltage: 1.15 V Maximum
- UL Flammability 94V-0 Classification
- MSL 1 per J-STD-020
- · RoHS Compliant / Green Molding Compound
- Industrial Device Qualified per AEC-Q101 Standards
 - * See authorized use policy



Ordering Information

Part Number	Top Mark	Package	Packing Method		
S3AB	S3AB	DO-214AA (SMB)	Tape and Reel		
S3BB	S3BB	DO-214AA (SMB)	Tape and Reel		
S3DB	S3DB	DO-214AA (SMB)	Tape and Reel		
S3GB	S3GB	DO-214AA (SMB)	Tape and Reel		
S3JB	S3JB	DO-214AA (SMB)	Tape and Reel		
S3KB	S3KB	DO-214AA (SMB)	Tape and Reel		
S3MB	S3MB	DO-214AA (SMB)	Tape and Reel		

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
			S3BB	S3DB	S3GB	S3JB	S3KB	S3MB	Oiiit
V _{RRM}	Repetitive Peak Reverse Voltage		100	200	400	600	800	1000	V
V _{RMS}	RMS Reverse Voltage 35 70 140 280 4		420	560	700	V			
V _R	DC Blocking Voltage	ocking Voltage 50 100 200 400 600 800 1000		1000	V				
I _{F(AV)}	Average Forward Rectified Current				3				Α
I _{FSM}	Peak Forward Surge Current: 8.3 ms Single Half Sine-Wave Superimposed on Rated Load				80				А
TJ	Operating Junction Temperature Range			-5	55 to +15	50			°C
T _{STG}	Storage Temperature Range -55 to +150				°C				

Thermal Characteristics(1)

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

Symbol	Parameter	Value	Unit
$R_{\theta JA}$	Typical Thermal Resistance, Junction-to-Ambient	148	°C/W
ΨJL	Typical Thermal Characteristics, Junction-to-Lead	14	°C/W

Note:

1. Device mounted on FR-4 PCB, board size = 76.2 mm x 114.3 mm per JESD51-3.

Electrical Characteristics

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

Symbol	Parameter	Conditions	Min.	Тур.	Max.	Unit
V _F	Instantaneous Forward Voltage ⁽²⁾	I _F = 3 A			1.15	V
I _R	Reverse Current at Rated V _R	T _J = 25°C			10	μΑ
		T _J = 125°C			250	
T _{rr}	Reverse Recovery Time	I _F = 0.5 A, I _R = 1 A, I _{rr} = 0.25 A		1.5		μs
CJ	Junction Capacitance	V _R = 4 V, f = 1 MHz		40		pF

Note:

2. Pulse test with PW = $300 \mu s$, 1% duty cycle

Typical Performance Characteristics

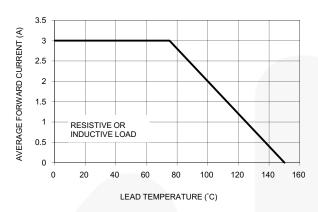


Figure 1. Forward Current Derating Curve

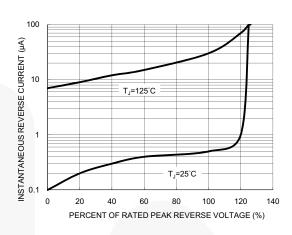


Figure 2. Typical Reverse Characteristics

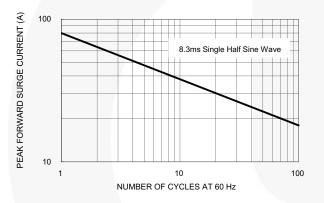


Figure 3. Maximum Non-Repetitive Forward Surge Current

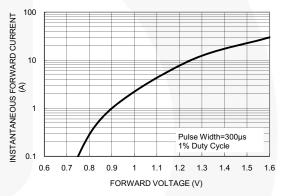


Figure 4. Typical Forward Characteristics

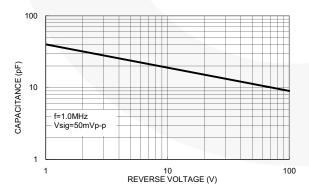


Figure 5. Typical Junction Capacitance

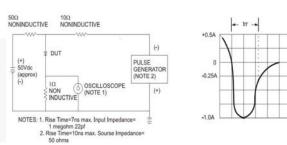
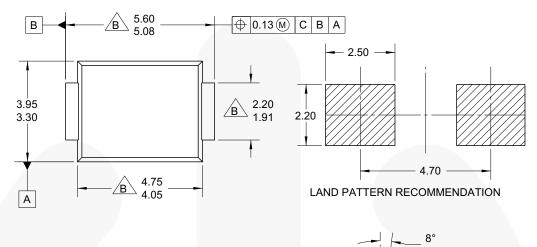
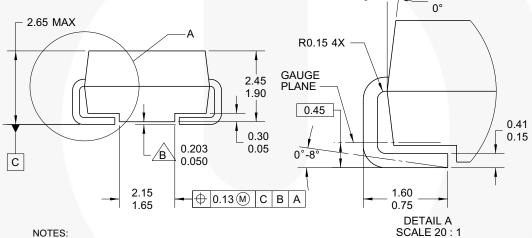


Figure 6. Reverse Recovery Time Characteristic and Test Circuit Diagram

Physical Dimensions





- 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.
- LAND PATTERN STD. DIOM5336X240M.
- G. DRAWING FILE NAME: DO214AAREV1

Figure 7. 2-LEAD, SMB, JEDEC DO-214, VARIATION AA





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Definition of Terms

Definition of Terms		
Datasheet Identification	Product Status	Definition
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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.
Obsolete	Not In Production	Datasheet contains specifications on a product that is discontinued by Fairchild Semiconductor. The datasheet is for reference information only.

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