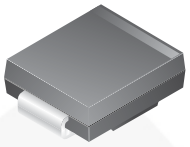
FAIRCHILD SEMICONDUCTOR®

October 2013

S3A - S3M
General Purpose Rectifiers

Features

- Low Profile Package.
- Glass Passivated Junction.



SMC/DO-214AB
COLOR BAND DENOTES CATHODE

Ordering Informations

Part Number	Top Mark	Package	Packing Method
S3A	S3A	DO-214AB (SMC)	Tape and Reel
S3B	S3B	DO-214AB (SMC)	Tape and Reel
S3D	S3D	DO-214AB (SMC)	Tape and Reel
S3G	S3G	DO-214AB (SMC)	Tape and Reel
S3J	S3J	DO-214AB (SMC)	Tape and Reel
S3K	S3K	DO-214AB (SMC)	Tape and Reel
S3M	S3M	DO-214AB (SMC)	Tape and Reel

Absolute Maximum Ratings(1)

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
		3A	3B	3D	3G	3J	3K	3M	
V_{RRM}	Maximum Repetitive Reverse Voltage	50	100	200	400	600	800	1000	V
$I_{F(AV)}$	Average Rectified Forward Current T_L = 105°C	3.0							A
I_{FSM}	Non-Repetitive Peak Forward Surge Current 8.3ms Single Half-Sine-Wave	100							A
T_{STG}	Storage Temperature Range	-55 to +150							°C
T_J	Operating Junction Temperature	-55 to +150							°C

Note:

1. These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.

Thermal Characteristics[2]

Symbol	Parameter	Value	Units
P_D	Power Dissipation	2.6	W
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	100	°C/W
Ψ_{JL}	Junction to Lead Thermal Characteristics (With Referenced to Anode Pin)	11	°C/W

Note:

2. Device mounted on FR-4 PCB 0.013mm.
   Land pattern size: Refer to the package drawing.
   Trace size: Force line = 50 mil & Sense line = 4 mil.

Electrical Characteristics

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

Symbol	Parameter	Conditions	Value							Units
			3A	3B	3D	3G	3J	3K	3M	
V_F	Forward Voltage at 3.0 A		1.2							V
t_{rr}	Reverse Recovery Time	I_F = 0.5 A, I_R = 1.0 A, I_{rr} = 0.25 A	2.5							µs
I_R	Reverse Current at rated V_R	T_A = 25°C	5.0							µA
		T_A = 125°C	250							µA
C_T	Total Capacitance	V_R = 4.0 V, f = 1.0 MHz	60							pF

Typical Performance Characteristics

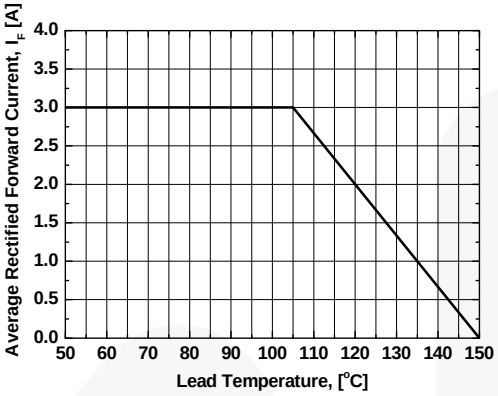


Figure 1. Forward Current Derating Curve

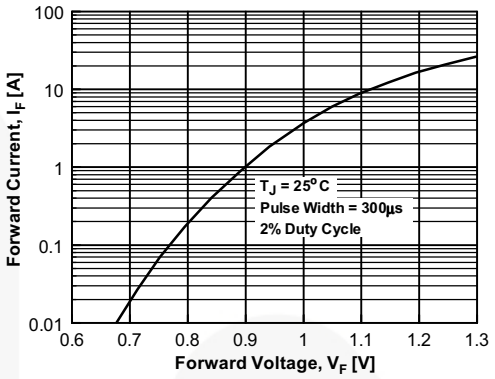


Figure 2. Forward Voltage Characteristics

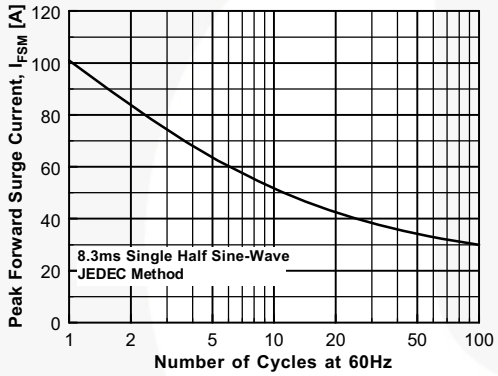


Figure 3. Non-Repetitive Surge Current

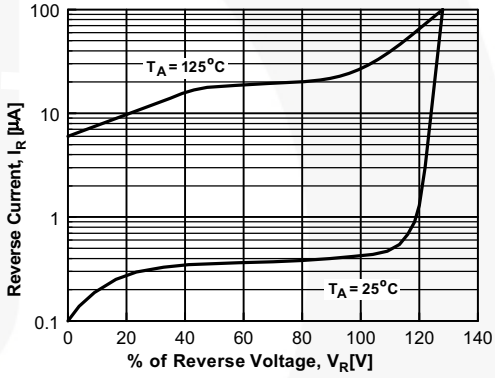


Figure 4. Reverse Current vs Reverse Voltage

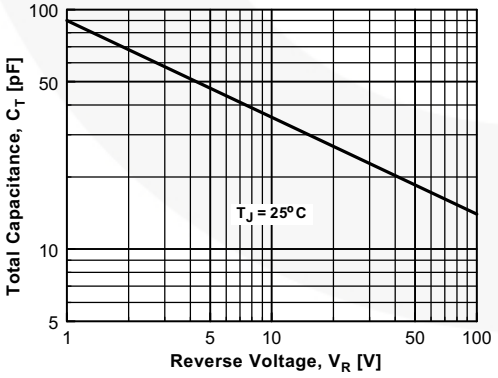
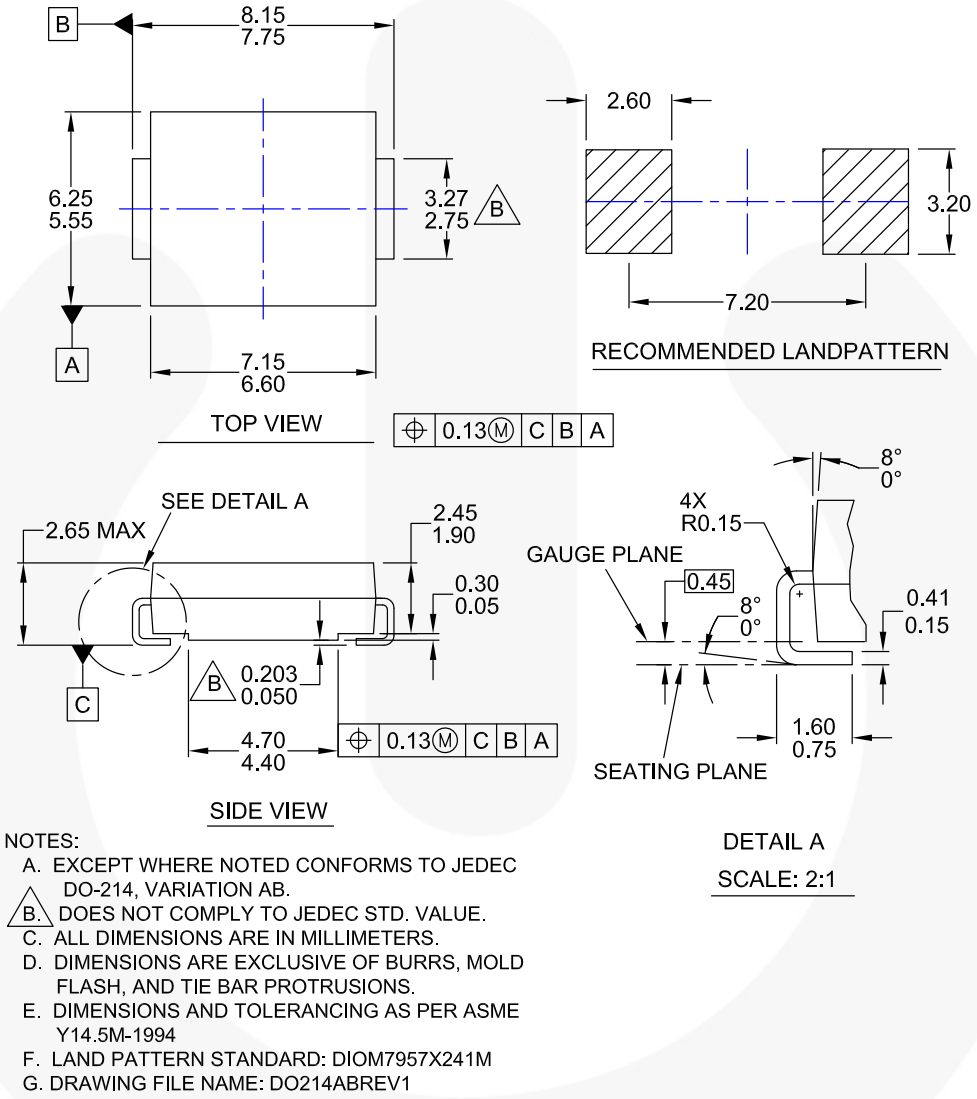


Figure 5. Total Capacitance

Physical Dimension

SMC/DO-214AB



NOTES:

A. EXCEPT WHERE NOTED CONFORMS TO JEDEC DO-214, VARIATION AB.

B. DOES NOT COMPLY TO JEDEC STD. VALUE.

C. ALL DIMENSIONS ARE IN MILLIMETERS.

D. DIMENSIONS ARE EXCLUSIVE OF BURRS, MOLD FLASH, AND TIE BAR PROTRUSIONS.

E. DIMENSIONS AND TOLERANCING AS PER ASME Y14.5M-1994

F. LAND PATTERN STANDARD: DIOM7957X241M

G. DRAWING FILE NAME: DO214ABREV1

Figure 6. 2-Lead, SMC, JEDEC DO-214, Variation AB

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http://www.fairchildsemi.com/dwg/DO/DO214AB.pdf.

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