Schottky Barrier Rectifiers, Surface Mount, 2 A, 20 V - 150 V

SS22FA - S215FA

ON Semiconductor®

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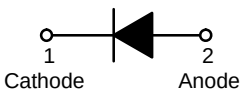
Features

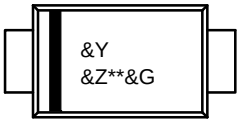
- Low Power Loss, High Efficiency
- Guard Ring for Overvoltage Protection
- High Surge Current Capability
- UL Flammability 94V−0 Classification
- MSL 1 per J−STD−020
- Green Molding Compound
- NRVB Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC−Q101 Qualified and PPAP Capable
- These Devices are Pb−Free and are RoHS Compliant



Rectifier

SOD−123FL
CASE 425AB

MARKING DIAGRAM



Band Indicates Cathode

&Y	= Binary Calendar Year Coding Scheme
&Z	= Assembly Plant Code
**	= Specific Device Code (see “Top Mark” in the table below)
&G	= Single Digit Weekly Date Code

ORDERING INFORMATION

Part Number	Top Mark	Package	Shipping†
SS22FA	22L	SOD−123FL (Pb−Free)	3000 / Tape & Reel
NRVBSS22FA			
SS23FA	23L	SOD−123FL (Pb−Free)	3000 / Tape & Reel
NRVBSS23FA			
SS25FA	25L	SOD−123FL (Pb−Free)	3000 / Tape & Reel
NRVBSS25FA			
SS29FA	29L	SOD−123FL (Pb−Free)	3000 / Tape & Reel
NRVBSS29FA			
S210FA	20L	SOD−123FL (Pb−Free)	3000 / Tape & Reel
NRVBS210FA			
S215FA	2AL	SOD−123FL (Pb−Free)	3000 / Tape & Reel
NRVBS215FA			

†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

SPECIFICATIONS

ABSOLUTE MAXIMUM RATINGS (T_A = 25°C unless otherwise noted)

Symbol	Parameter	Value						Unit
		SS22FA	SS23FA	SS25FA	SS29FA	S210FA	S215FA	
V_{RRM}	Repetitive Peak Reverse Voltage	20	30	50	90	100	150	V
V_{RMS}	RMS Reverse Voltage	14	21	35	63	70	105	V
V_R	DC Blocking Voltage	20	30	50	90	100	150	V
$I_{F(AV)}$	Average Forward Rectified Current	2						A
I_{FSM}	Peak Forward Surge Current: 8.3 ms Single Half Sine−Wave Superimposed on Rated Load	50						A
T_J	Operating Junction Temperature Range	−55 to +125		−55 to +150				°C
T_{STG}	Storage Temperature Range	−55 to +150						°C

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

THERMAL CHARACTERISTICS (T_A = 25°C unless otherwise noted) (Note 1)

Symbol	Characteristic	Value	Unit
Ψ_{JL}	Junction−to−Lead Thermal Characteristics	16	°C/W
$R_{\theta JA}$	Junction−to−Ambient Thermal Resistance	152	°C/W

1. Per JESD51−3 Recommended Thermal Test Board. Device mounted on FR−4 PCB, board size = 76.2 mm x 114.3 mm.

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted)

Symbol	Parameter	Conditions	Value						Unit
			SS22FA	SS23FA	SS25FA	SS29FA	S210FA	S215FA	
V_F	Maximum Instantaneous Forward Voltage (Note 2)	I_F = 2 A	0.50		0.70	0.85		0.95	V
I_R	Maximum Reverse Current at Rated V_R	T_J = 25°C	0.4			0.1			mA
		T_J = 100°C	15		10				
		T_J = 125°C				5			
C_J	Typical Junction Capacitance	V_R = 4 V, f = 1 MHz	120		93	62		48	pF
T_{rr}	Typical Reverse Recovery Time	I_F = 0.5 A, I_R = 1 A, I_{RR} = 0.25 A	10		9	7		13	ns

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

2. Pulse test with PW = 300 μs, 1% duty cycle.

TYPICAL PERFORMANCE CHARACTERISTICS

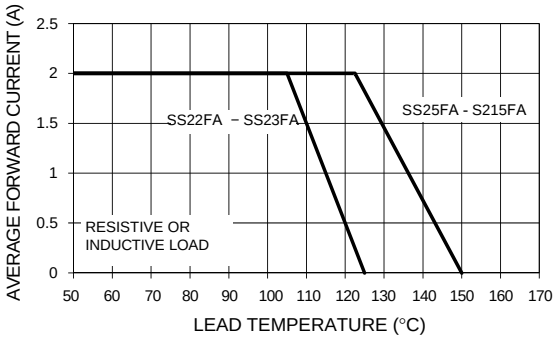


Figure 1. Forward Current Derating Curve

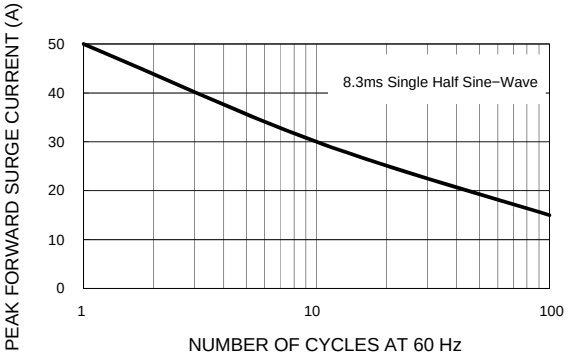


Figure 2. Maximum Non−Repetitive Forward Surge Current

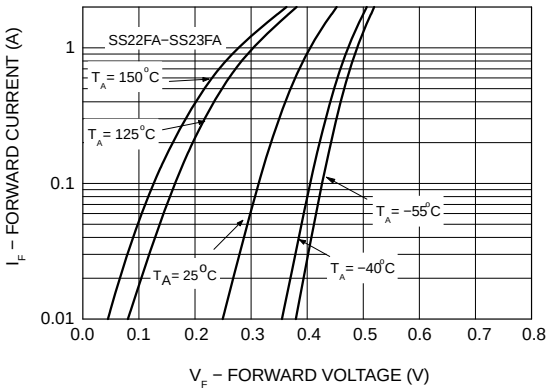


Figure 3. Typical Forward Characteristics

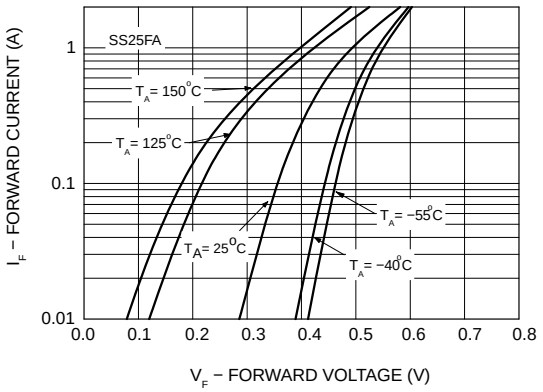


Figure 4. Typical Forward Characteristics

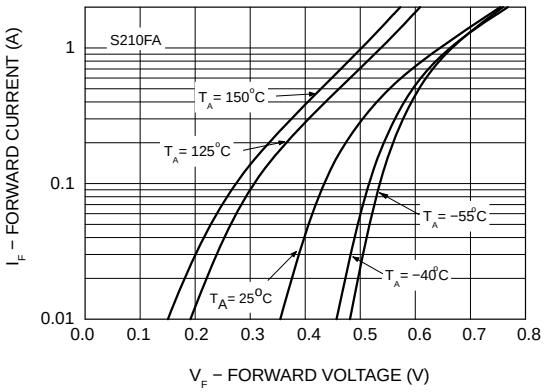


Figure 5. Typical Forward Characteristics

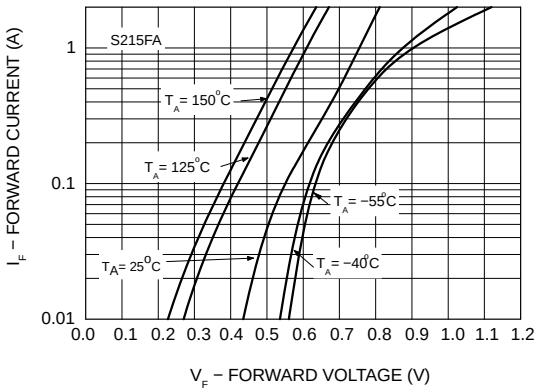


Figure 6. Typical Forward Characteristics

TYPICAL PERFORMANCE CHARACTERISTICS (continued)

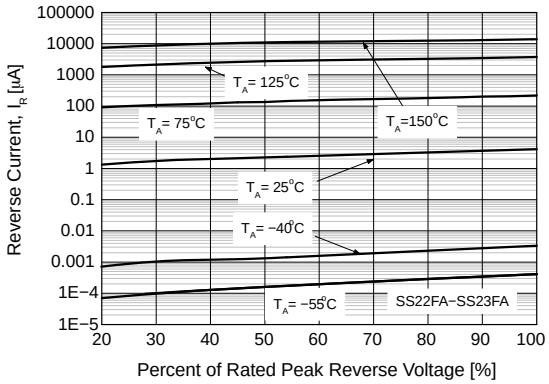


Figure 7. Typical Reverse Characteristics

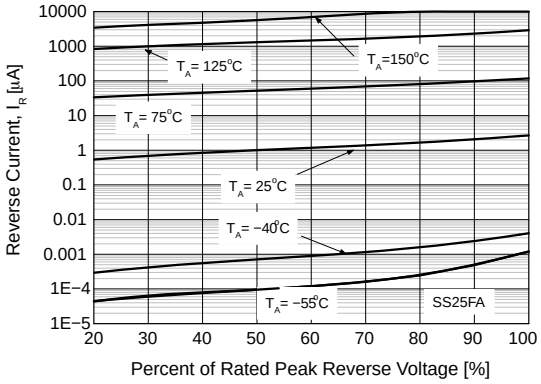


Figure 8. Typical Reverse Characteristics

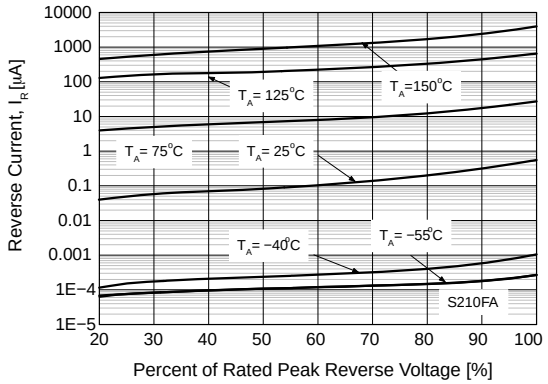


Figure 9. Typical Reverse Characteristics

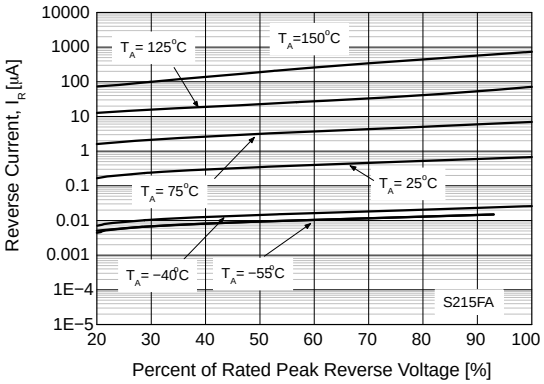


Figure 10. Typical Reverse Characteristics

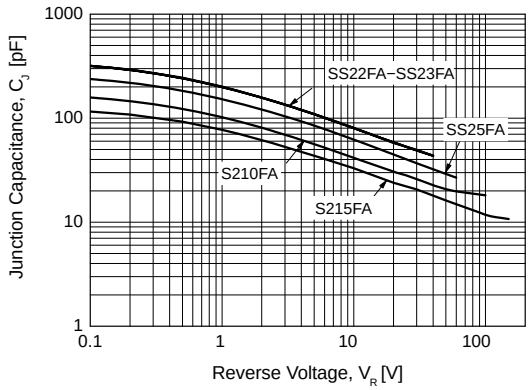


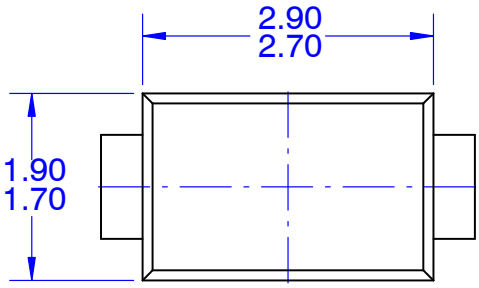
Figure 11. Typical Junction Capacitance

MECHANICAL CASE OUTLINE
PACKAGE DIMENSIONS

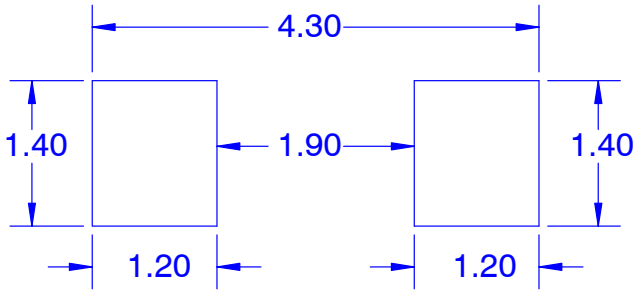
ON Semiconductor®

SOD−123FL
CASE 425AB
ISSUE O

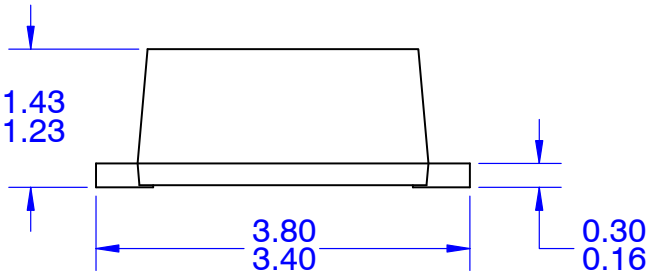
DATE 31 AUG 2016



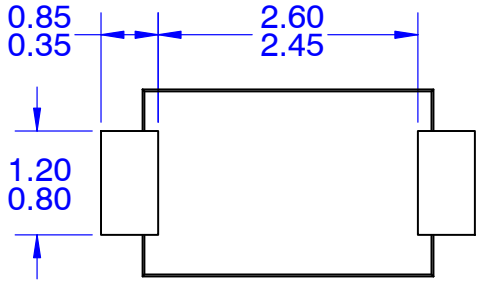
TOP VIEW



LAND PATTERN RECOMMENDATION



FRONT VIEW



BOTTOM VIEW

NOTES:

A. NO INDUSTRY STANDARD APPLIES TO THIS PACKAGE.
B. ALL DIMENSIONS ARE IN MILLIMETERS.
C. DIMENSIONS ARE EXCLUSIVE OF BURRS, MOLD FLASH AND TIE BAR PROTRUSIONS.

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LITERATURE FULFILLMENT:
Email Requests to: orderlit@onsemi.com

ON Semiconductor Website: www.onsemi.com

TECHNICAL SUPPORT
North American Technical Support:
Voice Mail: 1 800−282−9855 Toll Free USA/Canada
Phone: 011 421 33 790 2910

Europe, Middle East and Africa Technical Support:
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