



**Is Now Part of**



**ON Semiconductor®**

**To learn more about ON Semiconductor, please visit our website at  
[www.onsemi.com](http://www.onsemi.com)**

ON Semiconductor and the ON Semiconductor logo are trademarks of Semiconductor Components Industries, LLC dba ON Semiconductor or its subsidiaries in the United States and/or other countries. ON Semiconductor owns the rights to a number of patents, trademarks, copyrights, trade secrets, and other intellectual property. A listing of ON Semiconductor's product/patent coverage may be accessed at [www.onsemi.com/site/pdf/Patent-Marking.pdf](http://www.onsemi.com/site/pdf/Patent-Marking.pdf). ON Semiconductor reserves the right to make changes without further notice to any products herein. ON Semiconductor makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does ON Semiconductor assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation special, consequential or incidental damages. Buyer is responsible for its products and applications using ON Semiconductor products, including compliance with all laws, regulations and safety requirements or standards, regardless of any support or applications information provided by ON Semiconductor. "Typical" parameters which may be provided in ON Semiconductor data sheets and/or specifications can and do vary in different applications and actual performance may vary over time. All operating parameters, including "Typicals" must be validated for each customer application by customer's technical experts. ON Semiconductor does not convey any license under its patent rights nor the rights of others. ON Semiconductor products are not designed, intended, or authorized for use as a critical component in life support systems or any FDA Class 3 medical devices or medical devices with a same or similar classification in a foreign jurisdiction or any devices intended for implantation in the human body. Should Buyer purchase or use ON Semiconductor products for any such unintended or unauthorized application, Buyer shall indemnify and hold ON Semiconductor and its officers, employees, subsidiaries, affiliates, and distributors harmless against all claims, costs, damages, and expenses, and reasonable attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized use, even if such claim alleges that ON Semiconductor was negligent regarding the design or manufacture of the part. ON Semiconductor is an Equal Opportunity/Affirmative Action Employer. This literature is subject to all applicable copyright laws and is not for resale in any manner.



March 2016

# SS22FA - S215FA

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

### 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
  - RoHS Compliant / Green Molding Compound
  - Industrial Device Qualified per AEC-Q101 Standards
- \* See authorized use policy



SOD-123FA



### Ordering Information

Part Number	Top Mark	Package	Packing Method
SS22FA	22L	SOD-123FA	Tape and Reel
SS23FA	23L	SOD-123FA	Tape and Reel
SS25FA	25L	SOD-123FA	Tape and Reel
SS29FA	29L	SOD-123FA	Tape and Reel
S210FA	20L	SOD-123FA	Tape and Reel
S215FA	2AL	SOD-123FA	Tape and Reel

SS22FA - S215FA — 2 A, 20 V - 150 V Surface Mount Schottky Barrier Rectifiers

## 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
		SS22 FA	SS23 FA	SS25 FA	SS29 FA	S210 FA	S215 FA	
V <sub>RRM</sub>	Repetitive Peak Reverse Voltage	20	30	50	90	100	150	V
V <sub>RMS</sub>	RMS Reverse Voltage	14	21	35	63	70	105	V
V <sub>R</sub>	DC Blocking Voltage	20	30	50	90	100	150	V
I <sub>F(AV)</sub>	Average Forward Rectified Current	2						A
I <sub>FSM</sub>	Peak Forward Surge Current: 8.3 ms Single Half Sine-Wave Superimposed on Rated Load	50						A
T <sub>J</sub>	Operating Junction Temperature Range	-55 to +125		-55 to +150				°C
T <sub>STG</sub>	Storage Temperature Range	-55 to +150						°C

## Thermal Characteristics<sup>(1)</sup>

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

Symbol	Parameter	Value	Unit
$\Psi_{JL}$	Thermal Characteristics, Junction-to-Lead	16	$^\circ\text{C}/\text{W}$
$R_{\theta JA}$	Thermal Resistance, Junction-to-Ambient	152	$^\circ\text{C}/\text{W}$

### Note:

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

## Electrical Characteristics

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

Symbol	Parameter	Conditions	Value						Unit
			SS22 FA	SS23 FA	SS25 FA	SS29 FA	S210 FA	S215 FA	
V <sub>F</sub>	Maximum Instantaneous Forward Voltage <sup>(2)</sup>	I <sub>F</sub> = 2 A	0.50		0.70	0.85		0.95	V
I <sub>R</sub>	Maximum Reverse Current at Rated V <sub>R</sub>	T <sub>J</sub> = 25°C	0.4			0.1			mA
		T <sub>J</sub> = 100°C	15		10				
		T <sub>J</sub> = 125°C				5			
C <sub>J</sub>	Typical Junction Capacitance	V <sub>R</sub> = 4 V, f = 1 MHz	120		93	62		48	pF
T <sub>rr</sub>	Typical Reverse Recovery Time	I <sub>F</sub> = 0.5 A, I <sub>R</sub> = 1 A, I <sub>RR</sub> = 0.25 A	10		9	7		13	ns

### Note:

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

## Typical Performance Characteristics

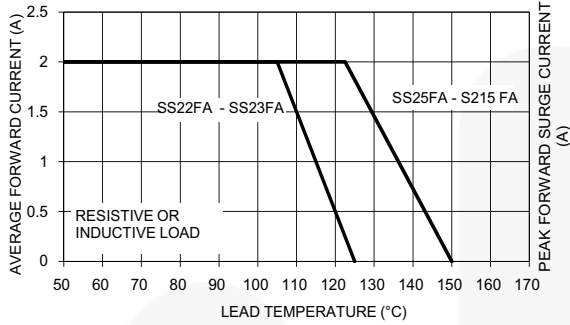


Figure 1. Forward Current Derating Curve

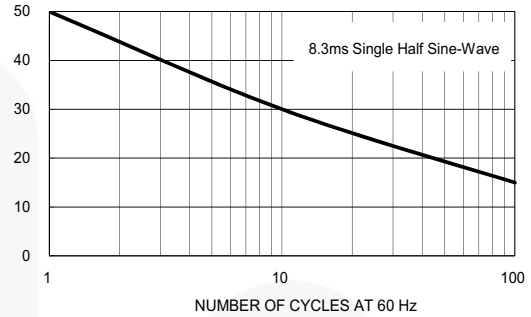


Figure 2. Maximum Non-Repetitive Forward Surge Current

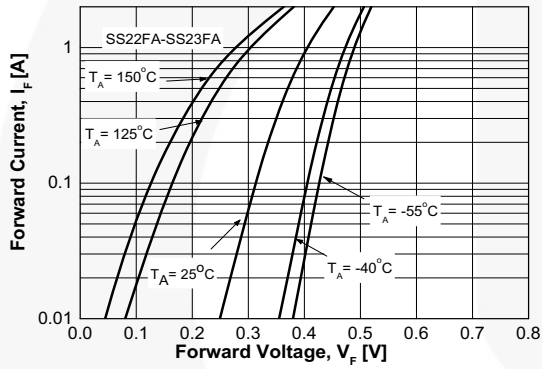


Figure 3. Typical Forward Characteristics

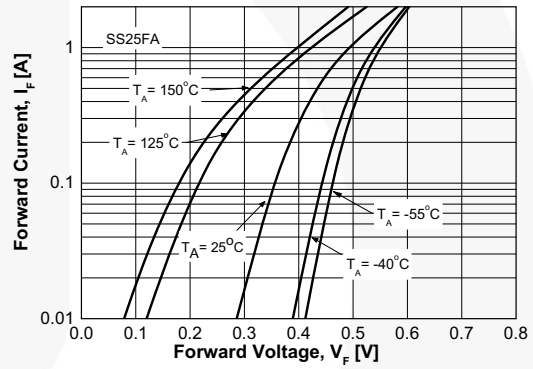


Figure 4. Typical Forward Characteristics

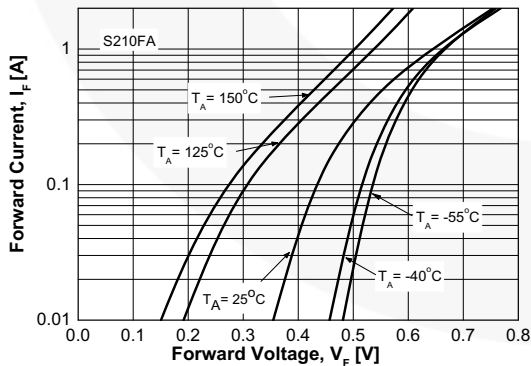


Figure 5. Typical Forward Characteristics

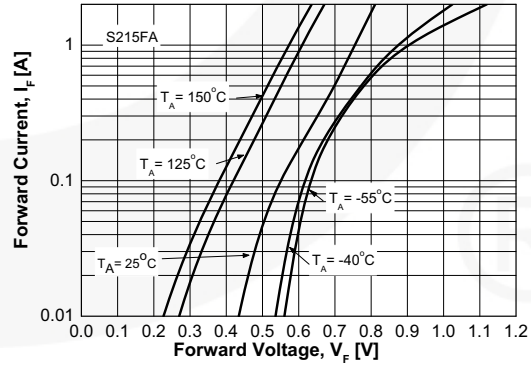


Figure 6. Typical Forward Characteristics

## Typical Performance Characteristics (Continued)

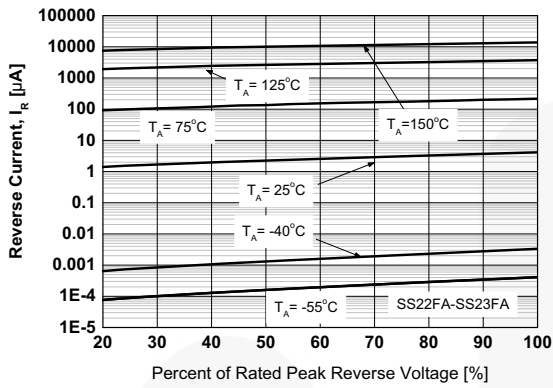


Figure 7. Typical Reverse Characteristics

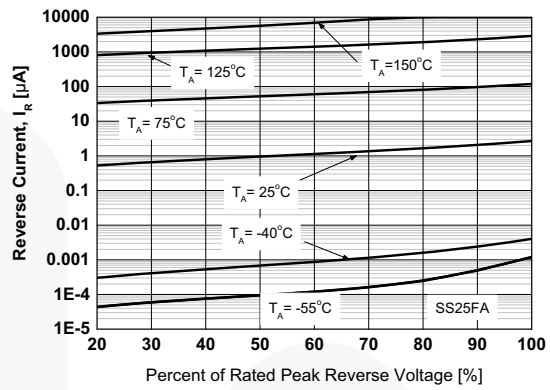


Figure 8. Typical Reverse Characteristics

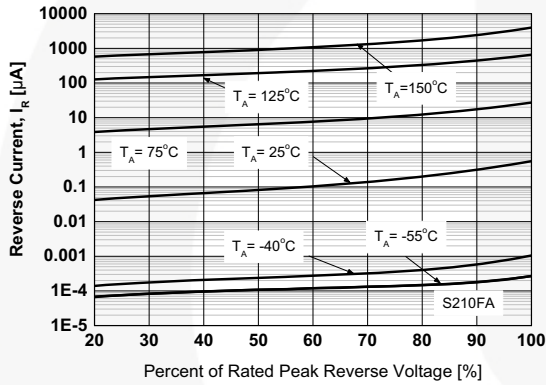


Figure 9. Typical Reverse Characteristics

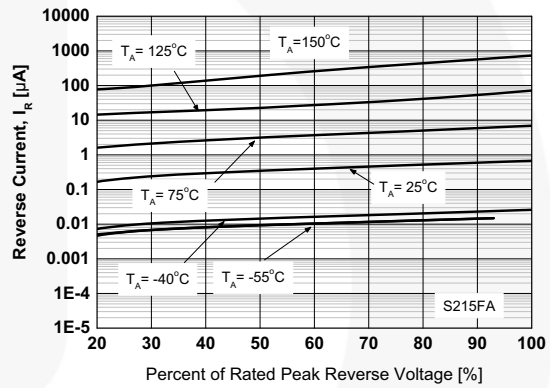


Figure 10. Typical Reverse Characteristics

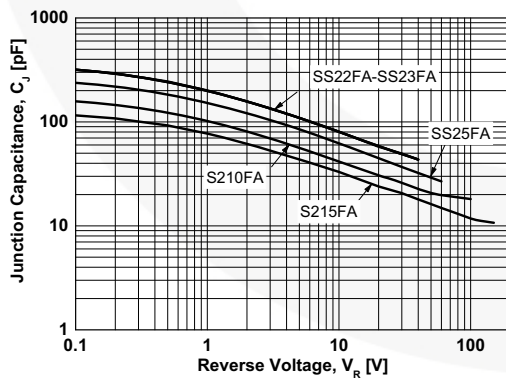
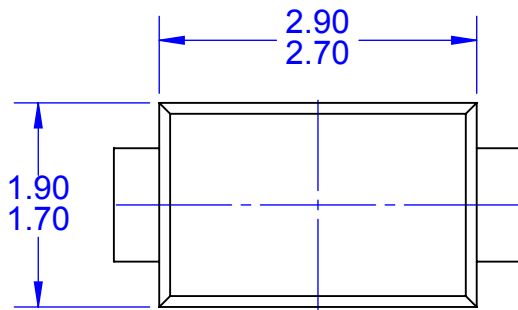
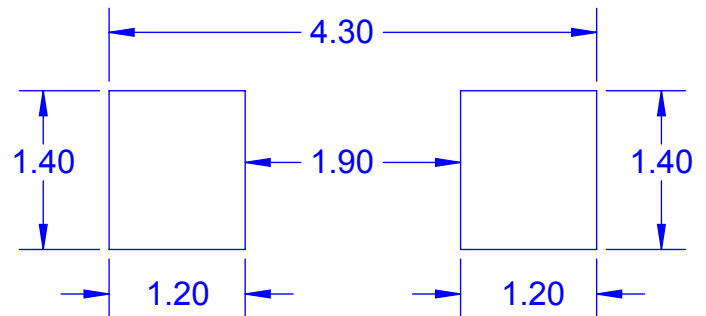


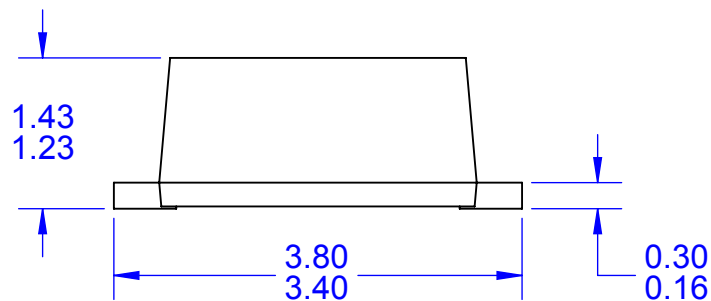
Figure 11. Typical Junction Capacitance



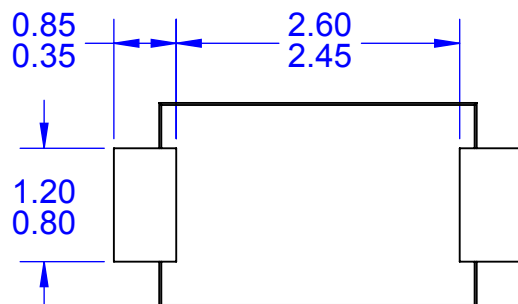
TOP VIEW



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.
- D. DRAWING FILE NAME: MKT-MA02Drev3



ON Semiconductor and  are trademarks of Semiconductor Components Industries, LLC dba ON Semiconductor or its subsidiaries in the United States and/or other countries. ON Semiconductor owns the rights to a number of patents, trademarks, copyrights, trade secrets, and other intellectual property. A listing of ON Semiconductor's product/patent coverage may be accessed at [www.onsemi.com/site/pdf/Patent-Marking.pdf](http://www.onsemi.com/site/pdf/Patent-Marking.pdf). ON Semiconductor reserves the right to make changes without further notice to any products herein. ON Semiconductor makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does ON Semiconductor assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation special, consequential or incidental damages. Buyer is responsible for its products and applications using ON Semiconductor products, including compliance with all laws, regulations and safety requirements or standards, regardless of any support or applications information provided by ON Semiconductor. "Typical" parameters which may be provided in ON Semiconductor data sheets and/or specifications can and do vary in different applications and actual performance may vary over time. All operating parameters, including "Typicals" must be validated for each customer application by customer's technical experts. ON Semiconductor does not convey any license under its patent rights nor the rights of others. ON Semiconductor products are not designed, intended, or authorized for use as a critical component in life support systems or any FDA Class 3 medical devices or medical devices with a same or similar classification in a foreign jurisdiction or any devices intended for implantation in the human body. Should Buyer purchase or use ON Semiconductor products for any such unintended or unauthorized application, Buyer shall indemnify and hold ON Semiconductor and its officers, employees, subsidiaries, affiliates, and distributors harmless against all claims, costs, damages, and expenses, and reasonable attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized use, even if such claim alleges that ON Semiconductor was negligent regarding the design or manufacture of the part. ON Semiconductor is an Equal Opportunity/Affirmative Action Employer. This literature is subject to all applicable copyright laws and is not for resale in any manner.

## PUBLICATION ORDERING INFORMATION

### LITERATURE FULFILLMENT:

Literature Distribution Center for ON Semiconductor  
19521 E. 32nd Pkwy, Aurora, Colorado 80011 USA  
**Phone:** 303-675-2175 or 800-344-3860 Toll Free USA/Canada  
**Fax:** 303-675-2176 or 800-344-3867 Toll Free USA/Canada  
**Email:** [orderlit@onsemi.com](mailto:orderlit@onsemi.com)

**N. American Technical Support:** 800-282-9855 Toll Free  
USA/Canada

**Europe, Middle East and Africa Technical Support:**  
Phone: 421 33 790 2910

**Japan Customer Focus Center**  
Phone: 81-3-5817-1050

**ON Semiconductor Website:** [www.onsemi.com](http://www.onsemi.com)

**Order Literature:** <http://www.onsemi.com/orderlit>

For additional information, please contact your local  
Sales Representative

# Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

[Fairchild Semiconductor:](#)

[SS25FA](#)