



Is Now Part of



ON Semiconductor®

**To learn more about ON Semiconductor, please visit our website at
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. 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.



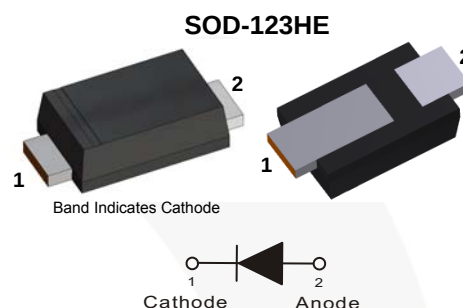
February 2017

SS12FP - S115FP

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

Features

- Larger Cathode Pad for Improved Power Dissipation
 - Ultra Thin Profile - Package Height < 1.0 mm
 - High Surge Current Capability
 - Low Power Loss, High Efficiency
 - 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
SS12FP	2FP	SOD-123HE	Tape and Reel
SS13FP	3FP	SOD-123HE	Tape and Reel
SS14FP	4FP	SOD-123HE	Tape and Reel
SS16FP	6FP	SOD-123HE	Tape and Reel
S110FP	0FP	SOD-123HE	Tape and Reel
S115FP	AFP	SOD-123HE	Tape and Reel

SS12FP - S115FP — 1 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
		SS12 FP	SS13 FP	SS14 FP	SS16 FP	S110 FP	S115 FP	
V _{RRM}	Repetitive Peak Reverse Voltage	20	30	40	60	100	150	V
V _{RMS}	RMS Reverse Voltage	14	21	28	42	70	105	V
V _R	DC Blocking Voltage	20	30	40	60	100	150	V
I _{F(AV)}	Average Forward Rectified Current	1						A
I _{FSM}	Peak Forward Surge Current: 8.3 ms Single Half Sine-Wave Superimposed on Rated Load	30						A
T _J	Operating Junction Temperature Range	-55 to +125		-55 to +150			°C	
T _{STG}	Storage Temperature Range	-55 to +150						°C

Thermal Characteristics⁽¹⁾

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

Symbol	Parameter	Value	Unit
Ψ_{JL}	Thermal Characteristics, Junction-to-Lead ⁽²⁾	10	$^\circ\text{C}/\text{W}$
$R_{\theta JA}$	Thermal Resistance, Junction-to-Ambient	140	$^\circ\text{C}/\text{W}$

Notes:

- Per JESD51-3 recommended thermal test board. Device mounted on FR-4 PCB, board size = 76.2 mm x 114.3 mm.
- Thermocouple soldered at cathode lead.

Electrical Characteristics

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

Symbol	Parameter	Condi- tions	Value						Unit
			SS12 FP	SS13 FP	SS14 FP	SS16 FP	S110 FP	S115 FP	
V _F	Maximum Instantaneous Forward Voltage ⁽³⁾	I _F = 0.5 A			0.51	0.58	0.70	0.75	V
		I _F = 1.0 A	0.45	0.50	0.55	0.70	0.80	0.90	
I _R	Maximum Reverse Current at Rated V _R	T _J = 25°C	0.40				0.05		mA
		T _J = 125°C					0.50		
C _J	Typical Junction Capacitance	V _R = 4 V, f = 1 MHz	54				28		pF
T _{rr}	Typical Reverse Recovery Time	I _F = 0.5 A, I _R = 1 A, I _{RR} = 0.25 A	6				14		ns

Note:

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

Typical Performance Characteristics

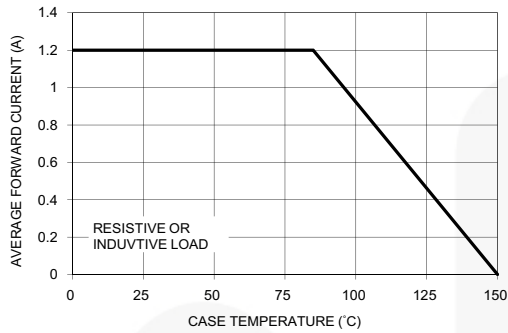


Figure 1. Forward Current Derating Curve

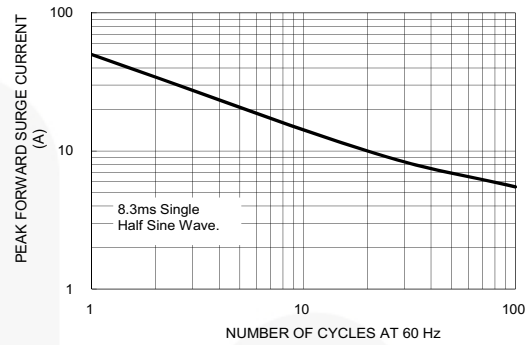


Figure 2. Maximum Non-Repetitive Forward Surge Current

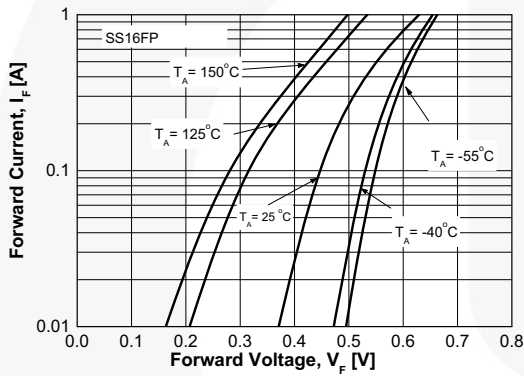


Figure 3. Typical Forward Characteristics

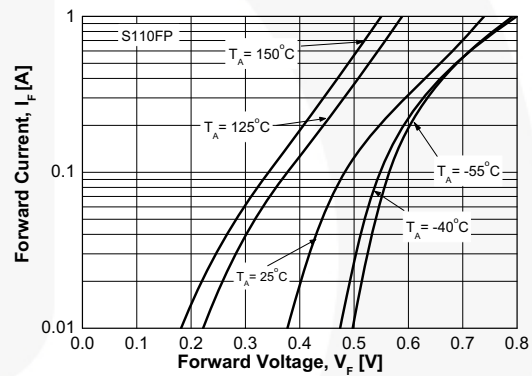


Figure 4. Typical Forward Characteristics

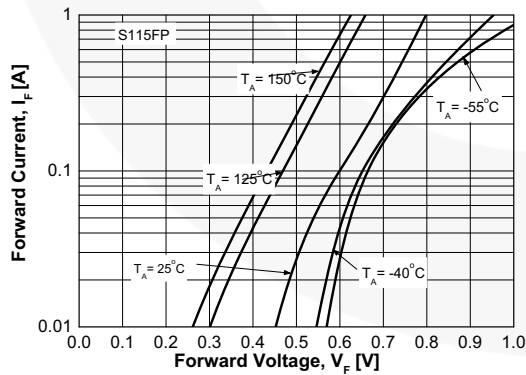


Figure 5. Typical Forward Characteristics

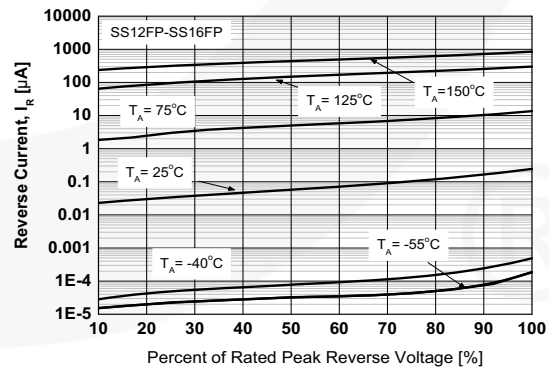


Figure 6. Typical Reverse Characteristics

Typical Performance Characteristics (Continued)

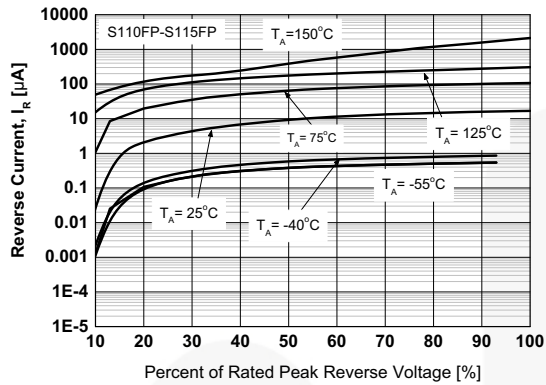


Figure 7. Typical Reverse Characteristics

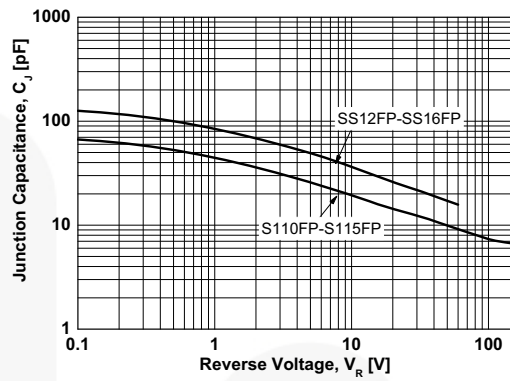
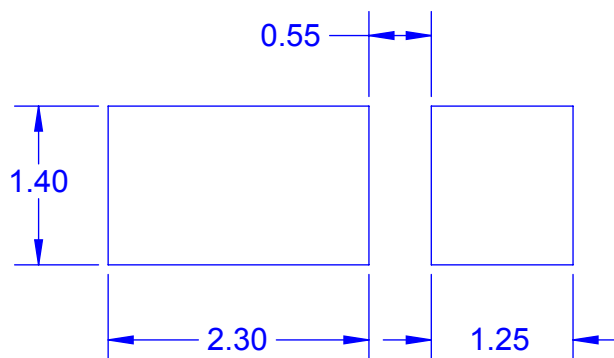
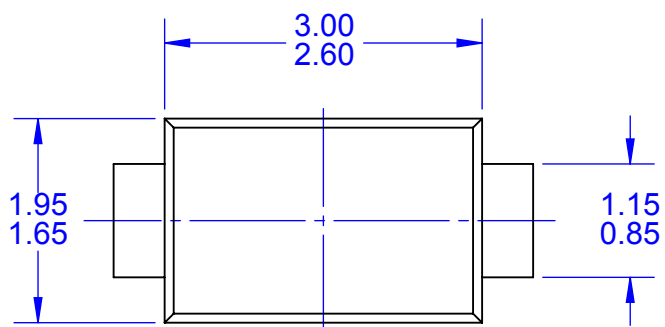
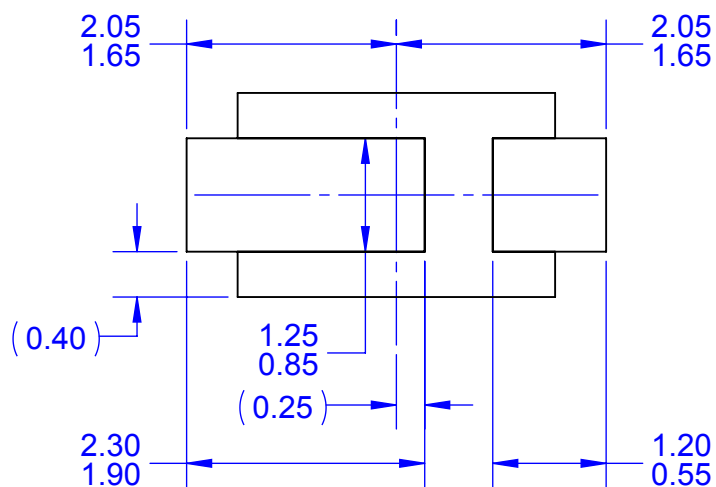
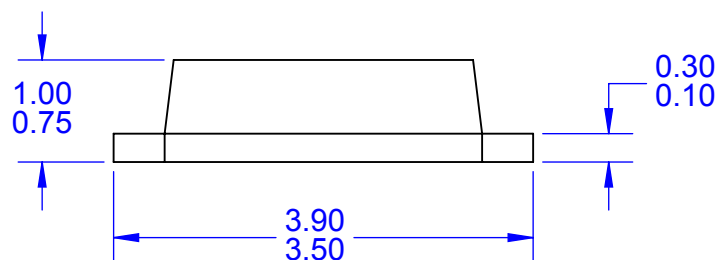


Figure 8. Typical Junction Capacitance



LAND PATTERN RECOMMENDATION



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-MA02Crev2



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. 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

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

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

For additional information, please contact your local
Sales Representative