

Surface Mount Schottky Barrier Rectifiers

1 A, 20 V - 150 V

SS12FP - S115FP

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
- AEC-Q101 Qualified
- These Devices are Pb-Free and are RoHS Compliant

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

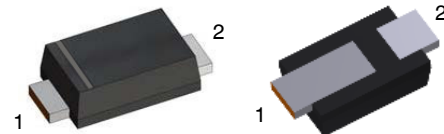
Symbol	Parameter	Value						Unit
		SS12 FP	SS13 FP	SS14 FP	SS16 FP	S110 FP	S115 FP	
V _{RRM}	Repetitive Peak Reverse Voltage	20	30	40	60	100	150	V
V _{RMS}	RMS Reverse Voltage	14	21	28	42	70	105	V
V _R	DC Blocking Voltage	20	30	40	60	100	150	V
I _{F(AV)}	Average Forward Rectified Current	1						A
I _{FSM}	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

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.



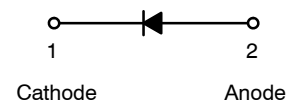
ON Semiconductor®

www.onsemi.com

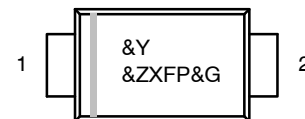


Band Indicates Cathode

SOD-123EP
CASE 425AC



MARKING DIAGRAM



&Y = Binary Calendar Year Coding
 &Z = Assembly Plant Code
 XFP = Specific Device Code
 X = 0, 2, 3, 4, 6, A
 &G = Single Digit Week Code

ORDERING INFORMATION

See detailed ordering and shipping information on page 2 of this data sheet.

SS12FP – S115FP

THERMAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted) (Note 1)

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

- 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 ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Symbol	Parameter	Conditions	Value						Unit
			SS12 FP	SS13 FP	SS14 FP	SS16 FP	S110 FP	S115 FP	
V_F	Maximum Instantaneous Forward Voltage (Note 3)	$I_F = 0.5 \text{ A}$			0.51	0.58	0.70	0.75	V
		$I_F = 1.0 \text{ A}$	0.45	0.50	0.55	0.70	0.80	0.90	
I_R	Maximum Reverse Current at Rated V_R	$T_J = 25^\circ\text{C}$	0.40				0.05		mA
		$T_J = 125^\circ\text{C}$					0.50		
C_J	Typical Junction Capacitance	$V_R = 4 \text{ V}$, $f = 1 \text{ MHz}$	54				28		pF
T_{rr}	Typical Reverse Recovery Time	$I_F = 0.5 \text{ A}$, $I_R = 1 \text{ A}$, $I_{RR} = 0.25 \text{ A}$	6				14		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.

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

ORDERING INFORMATION

Part Number	Device Code Marking	Package	Packing Method [†]
SS12FP	2FP	SOD-123EP	Tape and Reel
SS13FP	3FP	SOD-123EP	Tape and Reel
SS14FP	4FP	SOD-123EP	Tape and Reel
SS16FP	6FP	SOD-123EP	Tape and Reel
S110FP	0FP	SOD-123EP	Tape and Reel
S115FP	AFP	SOD-123EP	Tape and Reel

[†]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.

SS12FP - S115FP

TYPICAL PERFORMANCE CHARACTERISTICS

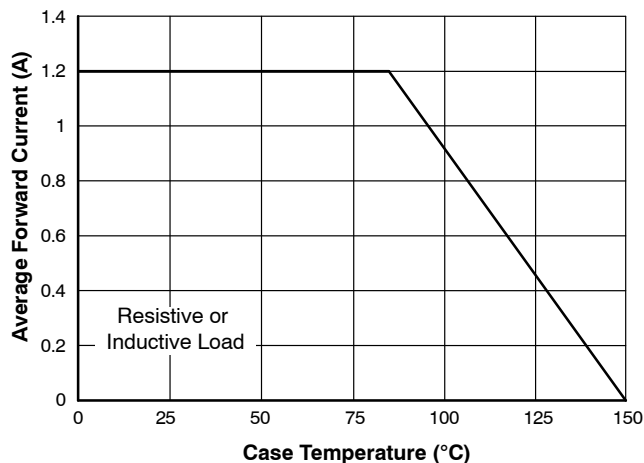


Figure 1. Forward Current Derating Curve

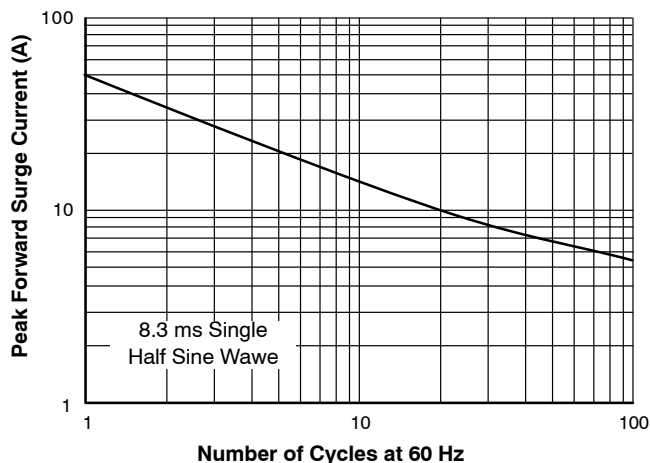


Figure 2. Maximum Non-Repetitive Forward Surge Current

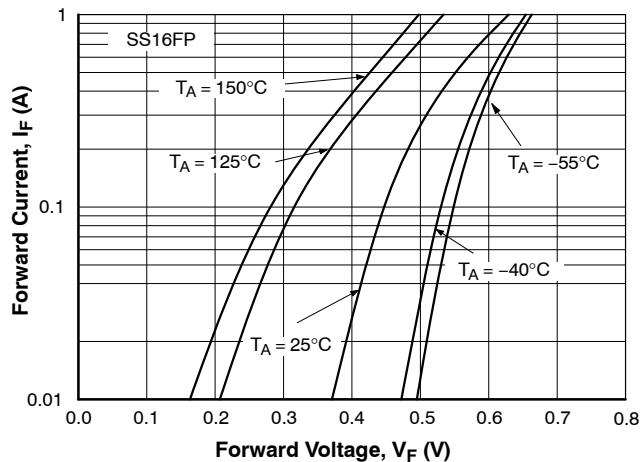


Figure 3. Typical Forward Characteristics

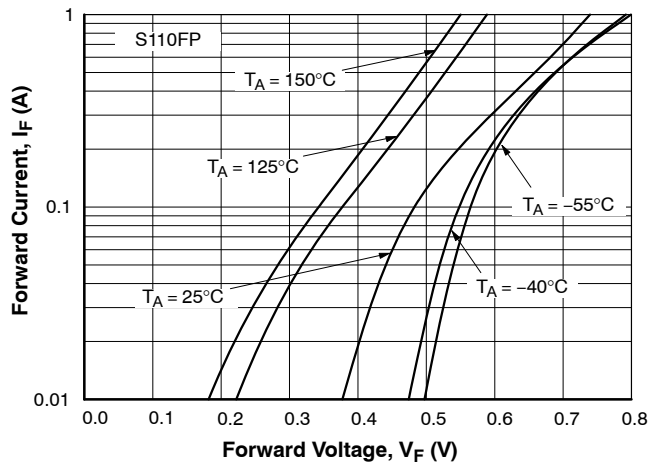


Figure 4. Typical Forward Characteristics

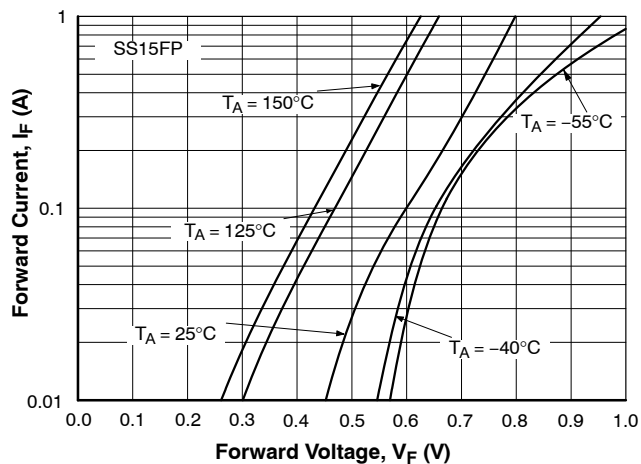


Figure 5. Typical Forward Characteristic

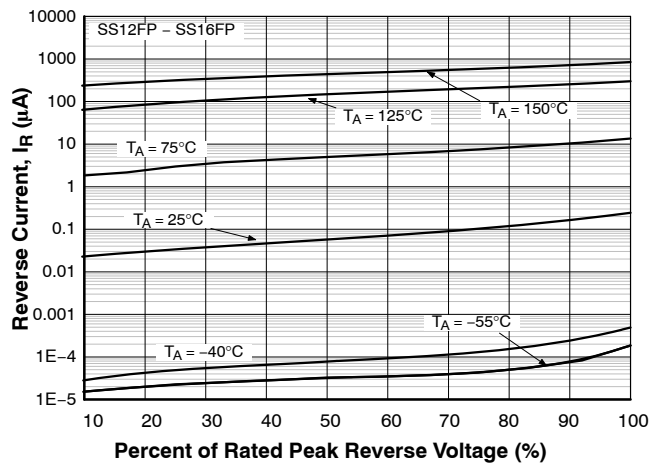


Figure 6. Typical Reverse Characteristics

SS12FP - S115FP

TYPICAL PERFORMANCE CHARACTERISTICS

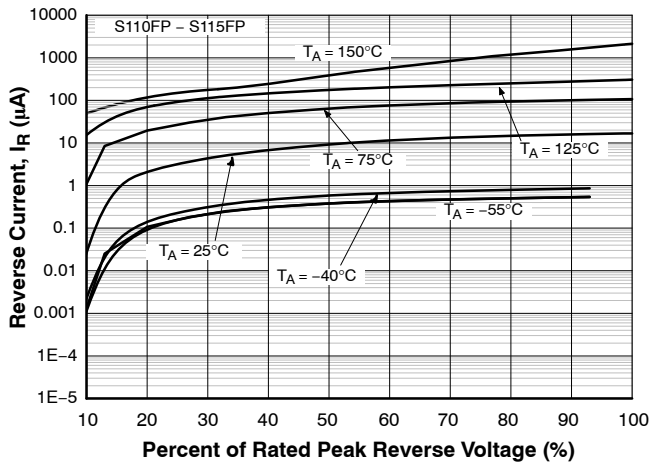


Figure 7. Typical Reverse Characteristic

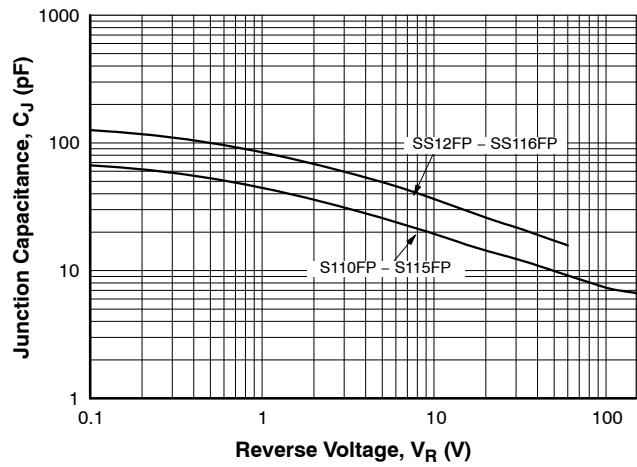
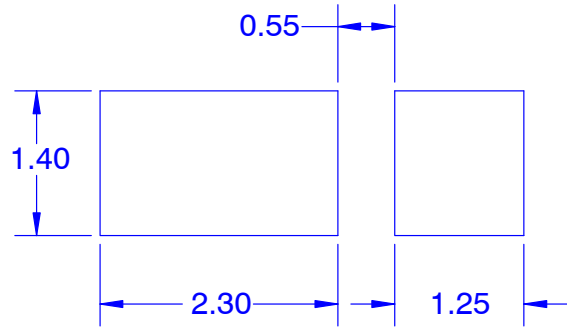
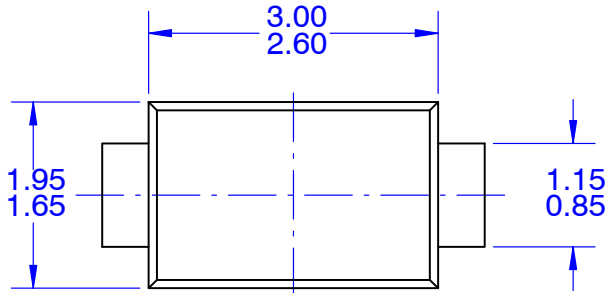


Figure 8. Typical Junction Capacitance

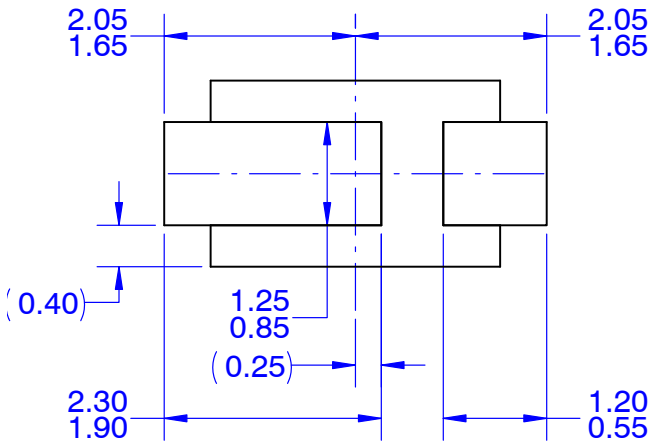
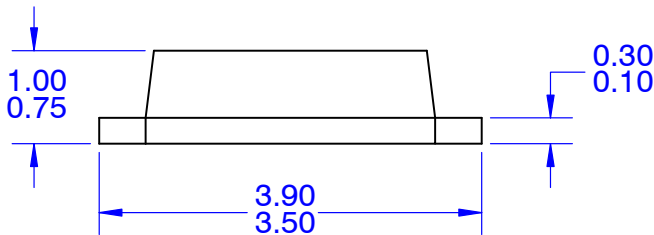
MECHANICAL CASE OUTLINE
PACKAGE DIMENSIONS

SOD-123EP
CASE 425AC
ISSUE O

DATE 31 AUG 2016



LAND PATTERN RECOMMENDATION
LONG PAD IS CATHODE



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.

DOCUMENT NUMBER:	98AON13723G	Electronic versions are uncontrolled except when accessed directly from the Document Repository. Printed versions are uncontrolled except when stamped "CONTROLLED COPY" in red.
DESCRIPTION:	SOD-123EP	PAGE 1 OF 1

ON Semiconductor and **ON** are trademarks of Semiconductor Components Industries, LLC dba ON Semiconductor or its subsidiaries in the United States and/or other countries. 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. ON Semiconductor does not convey any license under its patent rights nor the rights of others.

onsemi, **Onsemi**, and other names, marks, and brands are registered and/or common law trademarks of Semiconductor Components Industries, LLC dba "**onsemi**" or its affiliates and/or subsidiaries in the United States and/or other countries. **onsemi** owns the rights to a number of patents, trademarks, copyrights, trade secrets, and other intellectual property. A listing of **onsemi**'s product/patent coverage may be accessed at www.onsemi.com/site/pdf/Patent-Marking.pdf. **onsemi** reserves the right to make changes at any time to any products or information herein, without notice. The information herein is provided "as-is" and **onsemi** makes no warranty, representation or guarantee regarding the accuracy of the information, product features, availability, functionality, or suitability of its products for any particular purpose, nor does **onsemi** 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 **onsemi** products, including compliance with all laws, regulations and safety requirements or standards, regardless of any support or applications information provided by **onsemi**. "Typical" parameters which may be provided in **onsemi** 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. **onsemi** does not convey any license under any of its intellectual property rights nor the rights of others. **onsemi** 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 **onsemi** products for any such unintended or unauthorized application, Buyer shall indemnify and hold **onsemi** 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 **onsemi** was negligent regarding the design or manufacture of the part. **onsemi** is an Equal Opportunity/Affirmative Action Employer. This literature is subject to all applicable copyright laws and is not for resale in any manner.

ADDITIONAL INFORMATION

TECHNICAL PUBLICATIONS:

Technical Library: www.onsemi.com/design/resources/technical-documentation
onsemi Website: www.onsemi.com

ONLINE SUPPORT: www.onsemi.com/support

For additional information, please contact your local Sales Representative at www.onsemi.com/support/sales