S1AFL - S1MFL

Surface General Purpose Rectifier

Features

- Ultra Thin Profile – Maximum Height of 1.08 mm
- UL Flammability 94V–0 Classification
- MSL 1
- Green Mold Compound
- NRV Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC–Q101 Qualified and PPAP Capable
- These Devices are Pb–Free, Halogen Free and RoHS Compliant

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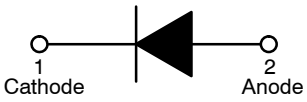
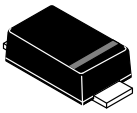
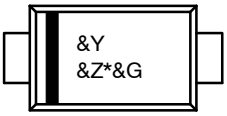


General–Purpose Rectifier



SOD–123F
CASE 425AD

MARKING DIAGRAM



Band Indicates Cathode

&Y	= Binary Calendar Year Coding Scheme
&Z	= Assembly Plant Code
*	= Specific Device Code 1A, 1B, 1D, 1G, 1J, 1M
&G	= Single Digit Weekly Data Code

ORDERING INFORMATION

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

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

Symbol	Rating	Value						Unit
		S1AFL	S1BFL	S1DFL	S1GFL	S1JFL	S1MFL	
V_{RRM}	Recurrent Peak Reverse Voltage	50	100	200	400	600	1000	V
V_{RMS}	RMS Voltage	35	70	140	280	420	700	V
V_{DC}	DC Blocking Voltage	50	100	200	400	600	1000	V
$I_{F(AV)}$	Average Forward Current (Note 1)	1						A
I_{FSM}	Peak One Cycle Forward Current (Non−Repetitive) at 60Hz	30						A
T_J, T_{STG}	Operating and 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.

1. Pulse test: 300 μs pulse width, 1 % duty cycle.

THERMAL CHARACTERISTICS (T_A = 25°C unless otherwise noted) (Note 2)

Symbol	Characteristic	Value	Unit
Ψ_{JL}	Typical Thermal Characteristics, Junction−to−Lead (Note 3)	25	°C/W
$R_{\theta JA}$	Typical Thermal Resistance, Junction−to−Ambient	140	°C/W

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

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

Symbol	Parameter	Conditions		Min	Typ	Max	Unit
V_F	Forward Voltage	I_F = 1 A		–	–	1.1	V
I_R	Reverse Current	$V_R = V_{DC}$	T_A = 25°C	–	–	1	μA
			T_A = 125°C	–	–	50	
T_{rr}	Reverse Recovery Time	I_F = 0.5 A, I_R = 1 A, I_{rr} = 0.25 A		–	1.304	2	μs
C_J	Junction Capacitance	V_R = 4 V, f = 1.0 MHz		–	4	–	pF

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.

ORDERING INFORMATION

Part Number	Top Mark	Package	Shipping†
S1AFL, NRVS1AFL*	1A	SOD−123F (Pb−Free/Halogen Free)	3000 / Tape & Reel
S1BFL, NRVS1BFL*	1B	SOD−123F (Pb−Free/Halogen Free)	3000 / Tape & Reel
S1DFL, NRVS1DFL*	1D	SOD−123F (Pb−Free/Halogen Free)	3000 / Tape & Reel
S1GFL, NRVS1GFL*	1G	SOD−123F (Pb−Free/Halogen Free)	3000 / Tape & Reel
S1JFL, NRVS1JFL*	1J	SOD−123F (Pb−Free/Halogen Free)	3000 / Tape & Reel
S1MFL, NRVS1MFL*	1M	SOD−123F (Pb−Free/Halogen Free)	3000 / Tape & 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.

*NRV Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC−Q101 Qualified and PPAP Capable.

TYPICAL PERFORMANCE CHARACTERISTICS

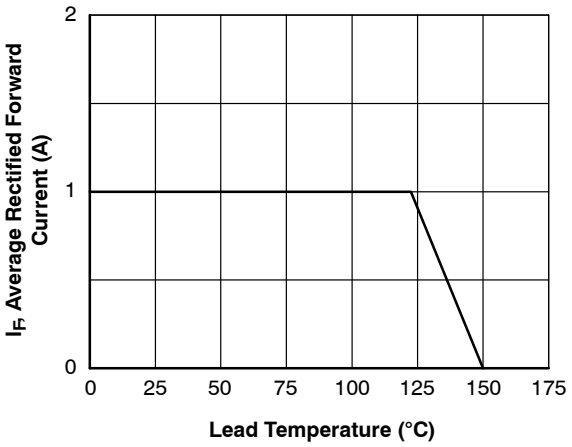


Figure 1. Forward Current Derating Curve

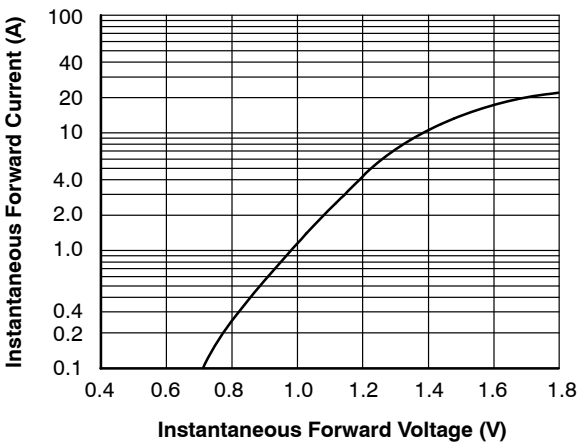


Figure 2. Typical Instantaneous Forward Characteristics

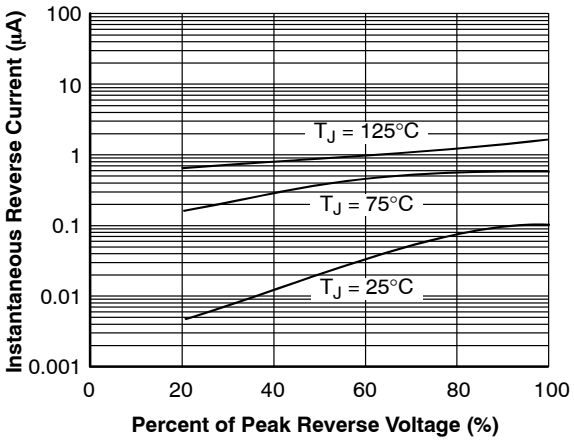


Figure 3. Typical Reverse Characteristics

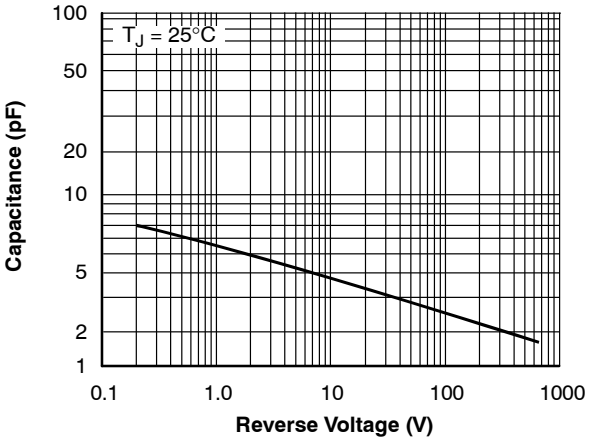


Figure 4. Typical Junction Capacitance

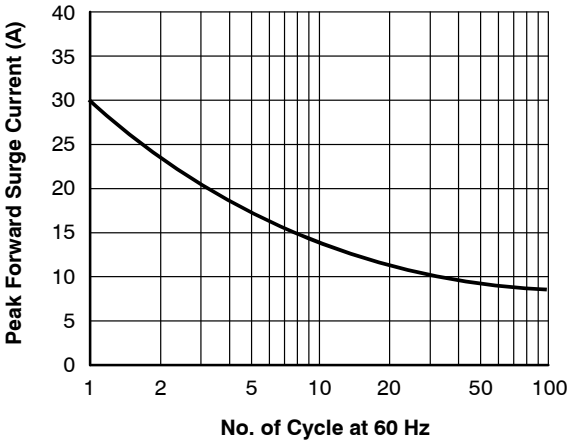


Figure 5. Maximum Non−Repetitive Surge Current

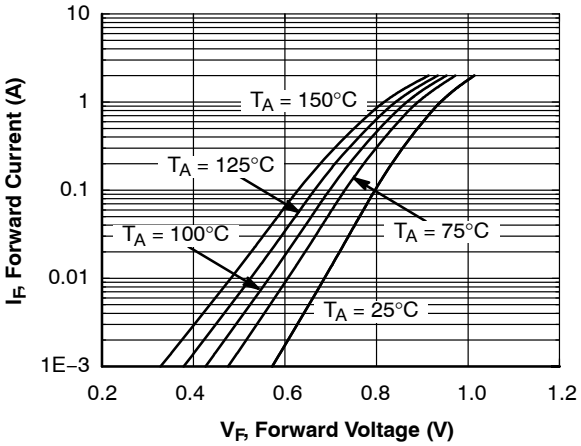
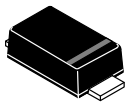


Figure 6. Typical Forward Characteristics

MECHANICAL CASE OUTLINE
PACKAGE DIMENSIONS

ON Semiconductor®

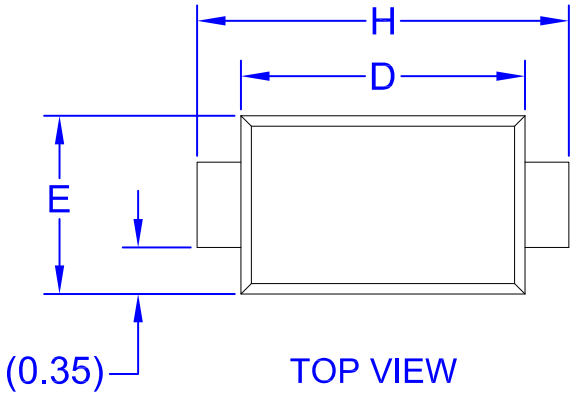


SCALE 4:1

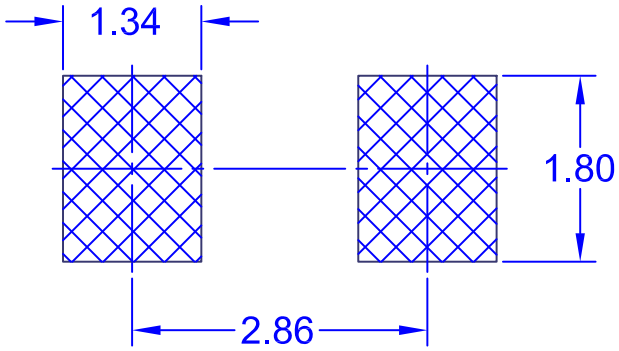
SOD−123FL
CASE 425AD
ISSUE A

DATE 04 AUG 2017

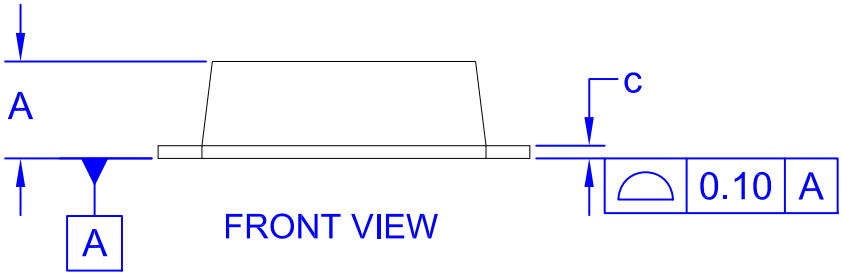
NOTES:
A. NO INDUSTRY STANDARD APPLIES TO THIS PACKAGE
B. ALL DIMENSIONS ARE IN MILLIMETERS
C. DIMENSIONS ARE EXCLUSIVE OF BURRS, MOLD FLASH AND TIE BAR PROTRUSIONS.



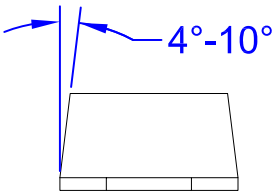
TOP VIEW



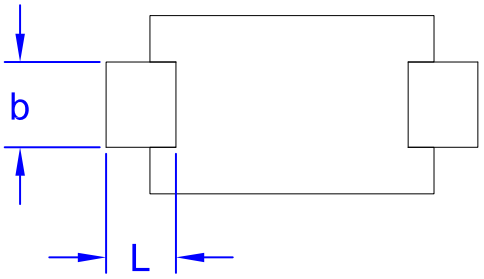
LAND PATTERN RECOMMENDATION



FRONT VIEW



SIDE VIEW



BOTTOM VIEW

	INCHES		MILLIMETERS	
DIM	MIN	MAX	MIN	MAX
A	0.031	0.043	0.80	1.08
b	0.020	0.045	0.50	1.15
c	0.002	0.008	0.05	0.20
D	0.098	0.118	2.50	3.00
E	0.059	0.077	1.50	1.95
H	0.130	0.154	3.30	3.90
L	0.018	0.035	0.45	0.90

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STATUS:	**ON SEMICONDUCTOR STANDARD**	
NEW STANDARD:		
DESCRIPTION:	**SOD−123FL**	**PAGE 1 OF 2**

ISSUE	REVISION	DATE
O	RELEASED FOR PRODUCTION FROM FAIRCHILD MA02B TO ON SEMICONDUCTOR. REQ. BY B. NG.	31 AUG 2016
A	CONVERTED TO ONSEMI FORMAT AND ADDED BACKSIDE FOOT LENGTH. REQ. BY H. ALLEN.	04 AUG 2017

PUBLICATION ORDERING INFORMATION

LITERATURE FULFILLMENT:
Literature Distribution Center for ON Semiconductor
19521 E. 32nd Pkwy, Aurora, Colorado 80011 USA
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