



1N4148WSF

### SURFACE MOUNT FAST SWITCHING DIODE

### Features

- Fast Switching Speed
- Low Forward Voltage: Maximum of 0.715V at 1mA
- Fast Reverse Recovery: Maximum of 4ns
- Low Capacitance: Maximum of 1.5pF
- Low Leakage Current: Maximum of 500nA at 80V
- Small Surface Mount Package
- Thermally Efficient Copper Alloy leadframe for High Power
  Dissipation
- Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)
- Halogen and Antimony Free. "Green" Device (Note 3)

## **Mechanical Data**

- Case: SOD323F
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Matte Tin Finish annealed over Copper Alloy leadframe (Lead Free Plating). Solderable per MIL-STD-202, Method 208 (3)
- Weight: 0.003 grams (approximate)

SOD323F



Top View

#### Ordering Information (Note 4)

Product	Compliance	Marking	Reel Size (inches)	Tape Width (mm)	Quantity per Reel
1N4148WSF-7	Standard	JP	7	8	3,000/Tape & Reel

1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant.

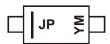
2. See http://www.diodes.com/quality/lead\_free.html for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.

3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.

4. For packaging details, go to our website at http://www.diodes.com/products/packages.html.

## **Marking Information**

Notes:



JP = Product Type Marking Code YM = Date Code Marking Y = Year (ex: A = 2013) M = Month (ex: 9 = September)

Date Code Key												
Year	2013	2	2014	2015	:	2016	2017		2018	2019	•	2020
Code	А		В	С		D	E		F	G		Н
Month	Jan	Feb	Mar	Apr	Мау	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	0	N	D



# Maximum Ratings (@T<sub>A</sub> = +25°C, unless otherwise specified.)

Characteristic	Symbol	Value	Unit	
Non-Repetitive Peak Reverse Voltage	V <sub>RM</sub>	100	V	
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V <sub>RRM</sub> V <sub>RWM</sub> V <sub>R</sub>	100	V	
RMS Reverse Voltage	V <sub>R(RMS)</sub>	71	V	
Forward Continuous Current (Note 5)	I <sub>FM</sub>	250	mA	
@ t = 1.0µsNon-Repetitive Peak Forward Surge Current@ t = 1.0ms@ t = 1.0s		IFSM	4.0 1.0 0.5	A

# **Thermal Characteristics**

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 5)	PD	400	mW
Thermal Resistance Junction to Ambient Air (Note 5)	R <sub>0JA</sub>	313	°C/W
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-55 to +150	°C

# Electrical Characteristics (@T<sub>A</sub> = +25°C, unless otherwise specified.)

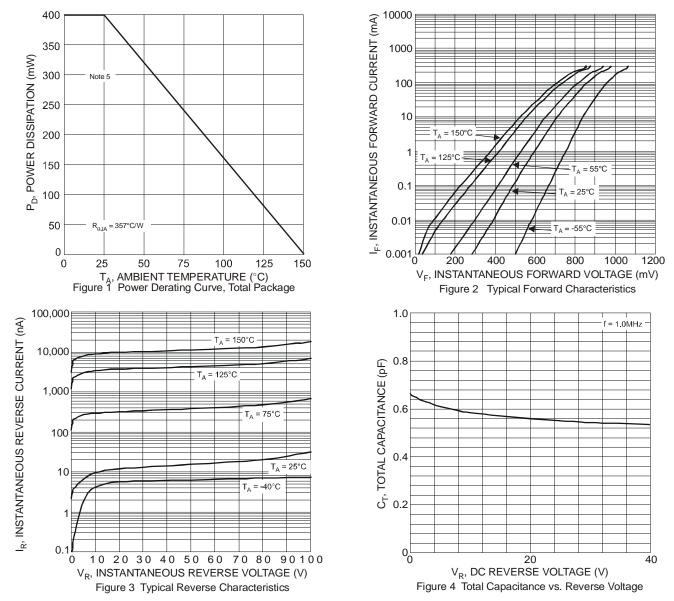
Characteristic	Symbol	Min	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 6)	V <sub>(BR)R</sub>	100	_	V	I <sub>R</sub> = 100μA
Forward Voltage	V <sub>F</sub>	_	0.715 0.855 1.0 1.25	V	$I_{F} = 1.0mA$ $I_{F} = 10mA$ $I_{F} = 50mA$ $I_{F} = 150mA$
Leakage Current (Note 6)	I <sub>R</sub>	_	0.5 50 30 30	μΑ μΑ μΑ nA	$V_R = 80V$ $V_R = 80V, T_J = +150^{\circ}C$ $V_R = 25V, T_J = +150^{\circ}C$ $V_R = 25V$
Total Capacitance	CT	_	1.5	pF	V <sub>R</sub> = 0, f = 1.0MHz
Reverse Recovery Time	t <sub>rr</sub>	_	4.0	ns	$I_{F} = I_{R} = 10 \text{mA},$ $I_{rr} = 0.1 \text{ x } I_{R}, R_{L} = 100 \Omega$

Notes: 5. Device mounted on FR-4 PCB, on minimum recommended, 2oz copper pad layout.

6. Short duration pulse test used to minimize self-heating effect.

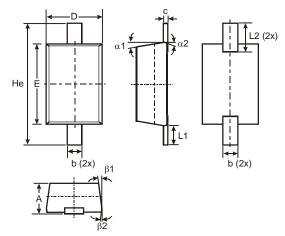


# 1N4148WSF



# **Package Outline Dimensions**

Please see AP02002 at http://www.diodes.com/datasheets/ap02002.pdf for latest version.

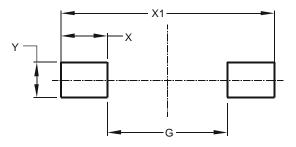


SOD323F						
Dim	Min	Max	Тур			
Α	0.60	0.75	-			
b	0.25	0.35	-			
С	0.05	0.26	-			
D	1.15	1.35	1.25			
E	1.60	1.80	1.70			
He	2.30	2.70	2.50			
L1	0.30	0.50	0.40			
L2	0.41	0.61	0.51			
α1	_	_	7°			
α2	_	_	3°			
β1	-	_	7°			
β2	-	-	3°			
All Dimensions in mm						



# **Suggested Pad Layout**

Please see AP02001 at http://www.diodes.com/datasheets/ap02001.pdf for the latest version.



Dimensions	Value (in mm)
G	1.280
Х	0.710
X1	2.700
Y	0.403

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