



S1MWF

1.0A SURFACE MOUNT GLASS PASSIVATED RECTIFIER

Product Summary (@ TA = +25°C)

V _{RRM} (V)	I _O (A)	V _F (MAX) (V)	I _{R(MAX)} (μA)
1000	1	1.1	5

Features and Benefits

- Glass Passivated Die Construction
- Small Form Factor, Low Profile
- Surge Overload Rating to 30A Peak
- Low Reverse Leakage Current
- High Reverse Breakage Voltage
- Lead-Free Finish & RoHS Compliant (Notes 1 & 2)
- Halogen and Antimony Free. "Green" Device (Note 3)

Description and Applications

The S1MWF is a rectifier packaged in the small form factor, low profile SOD123F package. Providing high reverse breakage voltage, low reverse leakage current, and high surge current capability for standard rectification, this device is ideal for use in general rectification applications such as:

- Switching Mode Power Supplies
- DC-DC Converters
- AC-DC Adaptors/Chargers
- Mobile Devices
- LED Lighting

Mechanical Data

- Case: SOD123F
- 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 Leadframe. Solderable per MIL-STD-202, Method 208 (3)
- Polarity: Cathode Band
- Weight: 0.0016 grams (Approximate)

SOD123F







Bottom View



Schematic View

Ordering Information (Note 4)

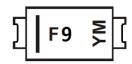
Part Number	Compliance	Case	Packaging
S1MWF-7	Commercial	SOD123F	3,000/Tape & Reel

Notes:

- 1. EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant. All applicable RoHS exemptions applied.
- 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

SOD123F



F9 = Product Type Marking Code YM = Date Code Marking Y = Year (ex: B = 2014) M = Month (ex: 9 = September)

Date Code Key

Year	2014	2015	2016	2017	2018	2019	2020	2021
Code	В	С	D	Е	F	G	Н	I

Mont	n Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	0	N	D



Single phase, half wave, 60Hz, resistive or inductive load. For capacitance load, derate current by 20%.

Characteristic	Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V _{RRM} V _{RWM} V _{RM}	1,000	>
RMS Reverse Voltage	$V_{R(RMS)}$	700	V
Average Rectified Output Current @ $T_T = +100$ °C	lo	1.0	Α
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I _{FSM}	30	Α

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance, Junction to Case (Note 5)	$R_{ heta JC}$	8	°C/W
Typical Thermal Resistance Junction to Ambient (Note 5)	$R_{ hetaJA}$	56	°C/W
Operating and Storage Temperature Range	T _J , T _{STG}	-55 to +150	°C

Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Min	Тур	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 6)	$V_{(BR)R}$	1,000	_	_	V	$I_R = 5\mu A$
Forward Voltage Drop	V _F	-	0.95 0.85 1.0 0.9	1.1 1.0 —	V	I _F = 1A, T _J = +25°C I _F = 1A, T _J = +125°C I _F = 2A, T _J = +25°C I _F = 2A, T _J = +125°C
Leakage Current (Note 6)	I _R		0.15 6	5.0 100	μΑ	V _R = 1,000V, T _J = +25°C V _R = 1,000V, T _J = +125°C
Reverse Recovery Time	t _{rr}	_	1.5	3.0	μs	$I_F = 0.5A$, $I_R = 1.0A$, $I_{rr} = 0.25A$
Total Capacitance	Ст	_	7	_	pF	$V_R = 4.0V_{DC}$, $f = 1MHz$

Notes:

^{5.} Device mounted on FR-4 substrate, 1.0" x 1.0", 2oz, single-sided, PC boards with 0.2" x 0.25" copper pad. 6. Short duration pulse test used to minimize self-heating effect.



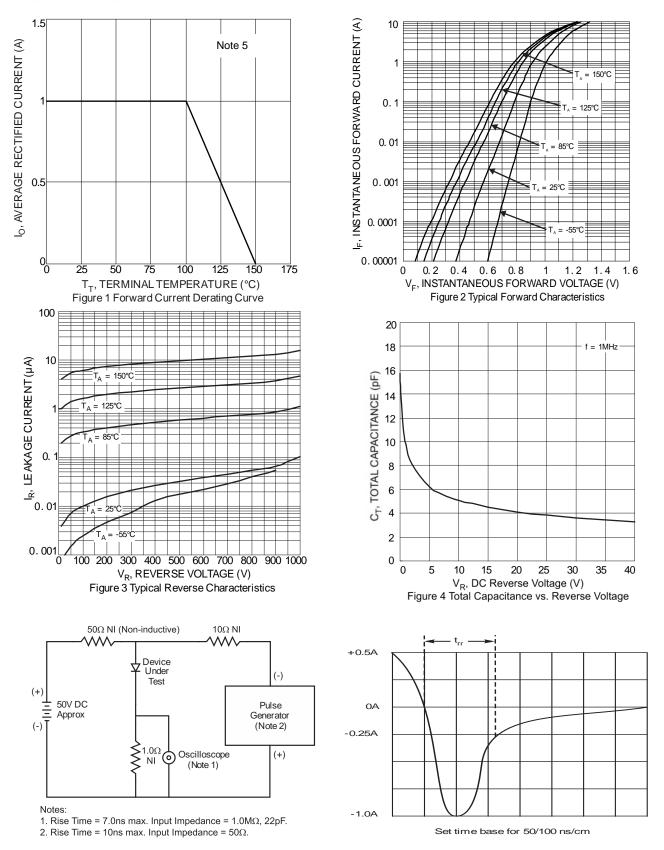
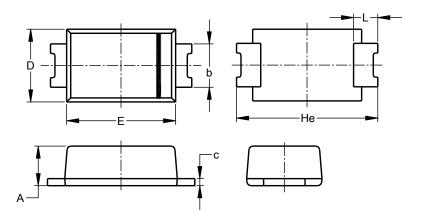


Figure 5 Reverse Recovery Time Characteristic and Test Circuit



Package Outline Dimensions

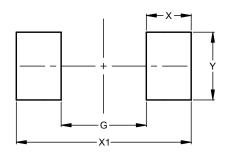
Please see AP02002 at http://www.diodes.com/datasheets/ap02002.pdf for the latest version.



S	SOD123F (Type B)						
Dim	Min	Max	Тур				
Α	0.81	1.15					
b	0.80	1.35					
С	0.05	0.30					
D	1.70	1.90	1.80				
Е	2.60	2.80	2.70				
He	3.30	3.70	3.50				
L	0.35	0.85					
All	Dimen	sions	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	1.90
Х	1.00
X1	3.90
Υ	1.50



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