

## Product Summary

V <sub>RRM</sub> (V)	I <sub>O</sub> (A)	V <sub>F(MAX)</sub> (V) @+25°C	I <sub>R(MAX)</sub> (μA) @+25°C
100	1.0	0.82	5

## Description and Applications

The device is a single rectifier packaged in SOD123F (Type B). Offering low V<sub>F</sub> and excellent high temperature stability this device is ideal for use in general rectification applications as a:

- Boost Diode
- Blocking Diode

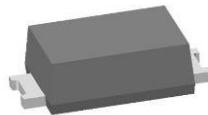
## Features and Benefits

- Low forward voltage (V<sub>F</sub>) minimizes conduction losses and improving efficiency
- Reduced High Temperature Reverse Leakage; Increased Reliability against Thermal Runaway Failure in High Temperature Operation
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

## Mechanical Data

- Case: SOD123F (Type B)
- 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
- Polarity: Cathode Band
- Weight: 0.015 grams (Approximate)

SOD123F (Type B)



Top View



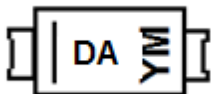
Bottom View

## Ordering Information (Note 4)

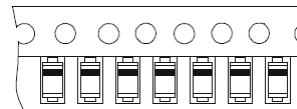
Part Number	Case	Packaging
SDM1100S1F-7	SOD123F (Type B)	3000/Tape & Reel

- Notes:
1. EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant. All applicable RoHS exemptions applied.
  2. See [http://www.diodes.com/quality/lead\\_free.html](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



DA = Product Type Marking Code  
 YM = Date Code Marking  
 Y = Year (ex.: C = 2015)  
 M = Month (ex.: 9 = September)



### Date Code Key

Year	2013	2014	2015	2016	2017	2018	2019	2020
Code	A	B	C	D	E	F	G	H

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

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

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

Characteristic	Symbol	Value	Unit
Peak Repetitive Reverse Voltage	V <sub>RRM</sub>	100	V
Working Peak Reverse Voltage	V <sub>RWM</sub>		
DC Blocking Voltage	V <sub>RM</sub>		
Average Rectified Output Current	I <sub>O</sub>	1	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I <sub>FSM</sub>	50	A

**Thermal Characteristics**

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance, Junction to Ambient (Note 5)	R <sub>θJA</sub>	135	°C/W
Typical Thermal Resistance, Junction to Case (Note 5)	R <sub>θJC</sub>	20	°C/W
Typical Thermal Resistance, Junction to Ambient (Note 6)	R <sub>θJA</sub>	85	°C/W
Typical Thermal Resistance, Junction to Case (Note 6)	R <sub>θJC</sub>	12	°C/W
Operating Junction Temperature Range	T <sub>J</sub>	-55 to +150	°C
Storage Temperature Range	T <sub>STG</sub>	-55 to +150	°C

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

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 6)	V <sub>(BR)R</sub>	100	—	—	V	I <sub>R</sub> = 1.0mA
Forward Voltage Drop	V <sub>F</sub>	—	0.75	0.82	V	I <sub>F</sub> = 1A, T <sub>J</sub> = +25°C
		—	0.81	—		I <sub>F</sub> = 2A, T <sub>J</sub> = +25°C
		—	0.60	—		I <sub>F</sub> = 1A, T <sub>J</sub> = +125°C
Leakage Current (Note 7)	I <sub>R</sub>	—	0.15	5	μA	V <sub>R</sub> = 100V, T <sub>J</sub> = +25°C
		—	0.110	5	mA	V <sub>R</sub> = 100V, T <sub>J</sub> = +125°C
Total Capacitance	C <sub>T</sub>	—	28	—	pF	V <sub>R</sub> = 4V, f = 1MHz

- Notes:
- Device mounted on 1 x MRP FR-4 PC board, 2oz.
  - Device mounted on 1inch sq. copper pad, 2oz.
  - Short duration pulse test used to minimize self-heating effect.

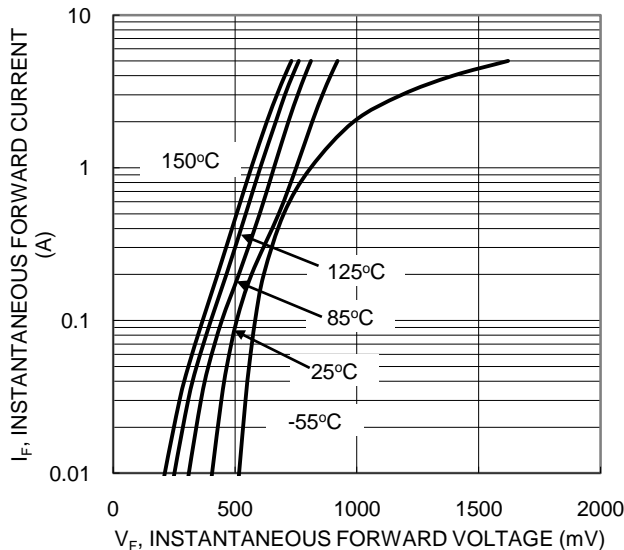


Figure 1. Typical Forward Characteristics

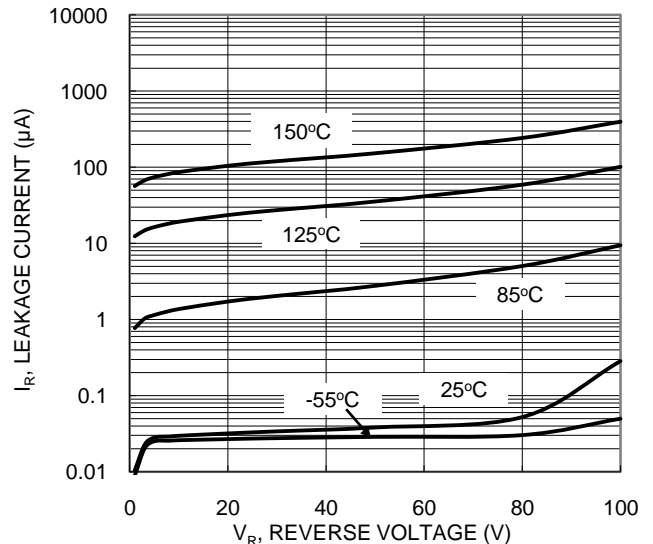


Figure 2. Typical Reverse Characteristics

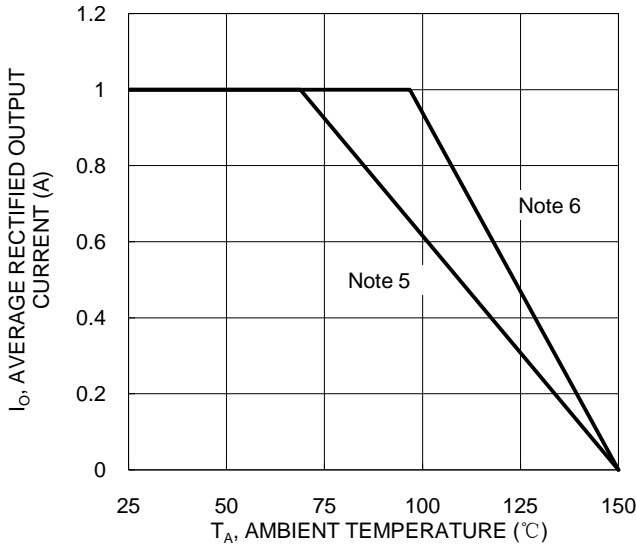


Figure 3. DC Forward Current Derating

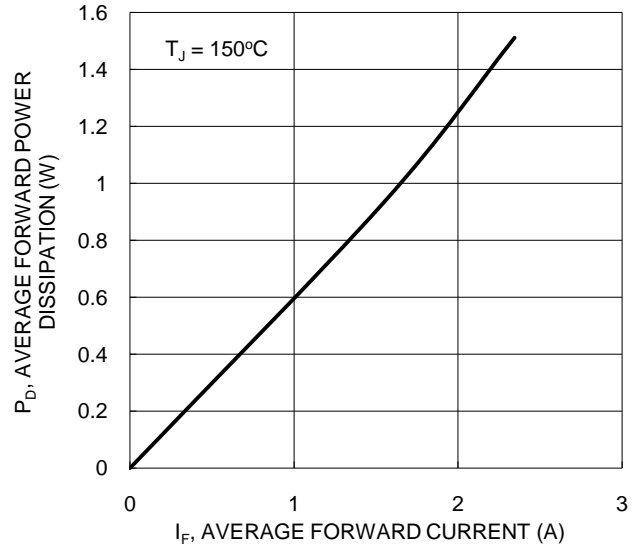


Figure 4. Forward Power Dissipation

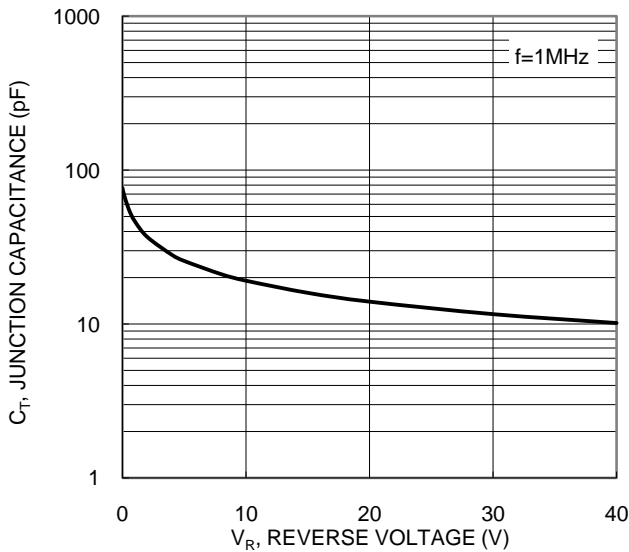
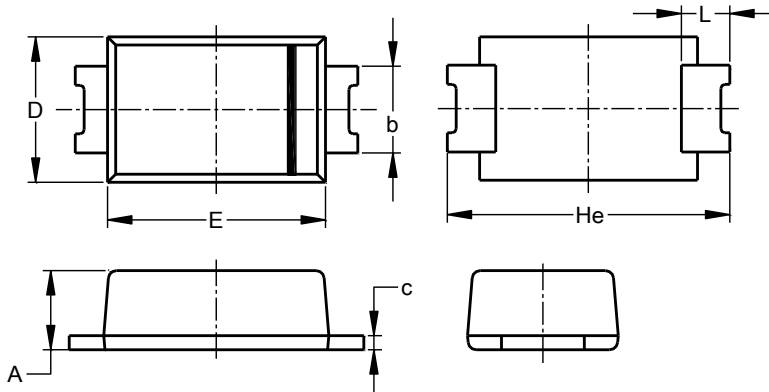


Figure 5. Typical Junction Capacitance

## Package Outline Dimensions

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

### SOD123F (Type B)

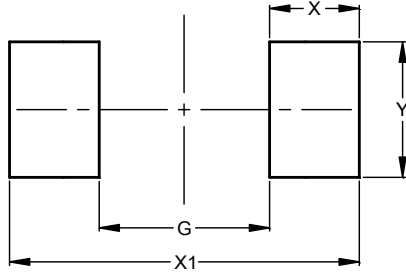


SOD123F (Type B)			
Dim	Min	Max	Typ
A	0.81	1.15	--
b	0.80	1.35	--
c	0.05	0.30	--
D	1.70	1.90	1.80
E	2.60	2.80	2.70
He	3.30	3.70	3.50
L	0.35	0.85	--
<b>All Dimensions in mm</b>			

## Suggested Pad Layout

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

### SOD123F (Type B)



Dimensions	Value (in mm)
<b>G</b>	1.90
<b>X</b>	1.00
<b>X1</b>	3.90
<b>Y</b>	1.50

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