

Product Summary

V _{RRM} (V)	I _O (A)	V _{F max} (V)	I _{R max} (mA)
30	1	0.57	0.2

Description and Applications

Packaged in the compact SOD523 package, the SBR1A30T5 provides very low V_F and excellent reverse leakage stability at high temperatures. It is ideal for use as a rectifier, freewheel diode, or blocking diode in:

- DC/DC converters
- AC/DC adaptors

SOD523



Top View



Top View

Features and Benefits

- Patented SBR[®] Technology provides superior Avalanche Capability versus Schottky Diodes, ensuring more rugged and reliable end applications
- Reduced Ultra-Low Forward Voltage Drop (V_F); Better Efficiency and Cooler Operation
- Reduced High-Temperature Reverse Leakage; Increased Reliability Against Thermal Runaway Failure in High-Temperature Operation
- Low-Profile Package—Ideal for Thin Applications
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. “Green” Device (Note 3)**
- **For automotive applications requiring specific change control (i.e. parts qualified to AEC-Q100/101/104/200, PPAP capable, and manufactured in IATF 16949 certified facilities), please [contact us](#) or your local Diodes representative. <https://www.diodes.com/quality/product-definitions/>**

Mechanical Data

- Package: SOD523
- Package Material: Molded Plastic, “Green” Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminal Connections: Cathode Band
- Terminals: Finish - Matte Tin Annealed over Alloy 42 Leadframe Solderable per MIL-STD-202, Method 208 @3
- Polarity: See Below
- Weight: 0.001 grams (Approximate)

Ordering Information (Note 4)

Orderable Part Number	Package	Packing	
		Quantity	Carrier
SBR1A30T5-7	SOD523	3,000	Tape & Reel

- Notes:
1. EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant. All applicable RoHS exemptions applied.
 2. See <https://www.diodes.com/quality/lead-free/> 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 <https://www.diodes.com/design/support/packaging/diodes-packaging/>.

Marking Information



1F = Product Type Marking Code

Maximum Ratings (@T_A = +25°C, unless otherwise specified.)

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

Characteristic	Symbol	Value	Unit
Peak Repetitive Reverse Voltage	V _{RRM}	30	V
Working Peak Reverse Voltage	V _{RWM}		
DC Blocking Voltage	V _{RM}		
Average Rectified Output Current	I _O	1	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I _{FSM}	10	A

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance Junction to Ambient (Note 5)	R _{θJA}	160	°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	Typ	Max	Unit	Test Condition	
Forward Voltage Drop (Note 6)	V _F	—	0.30	—	0.57	V	I _F = 100mA, T _J = +25°C
			0.50	—			I _F = 1A, T _J = +25°C
Leakage Current (Note 6)	I _R	—	0.01	0.2	—	mA	V _R = 30V, T _J = +25°C
			1.5	—			V _R = 30V, T _J = +125°C
Reverse Recovery Time	t _{RR}	—	15	—	ns	I _F = 10mA, I _{RR} = 0.1*I _R , T _A = +25°C	
Typical Capacitance	C _T	—	95	—	pF	V _R = 1.0V, f = 1MHz	

Notes: 5. Device mounted on 1inch sq. copper pad, 2oz.
6. Short duration pulse test used to minimize self-heating effect.

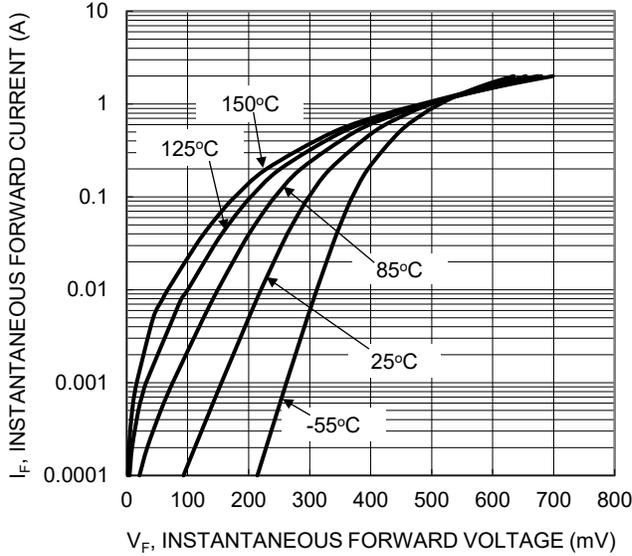


Figure 1. Typical Forward Characteristics

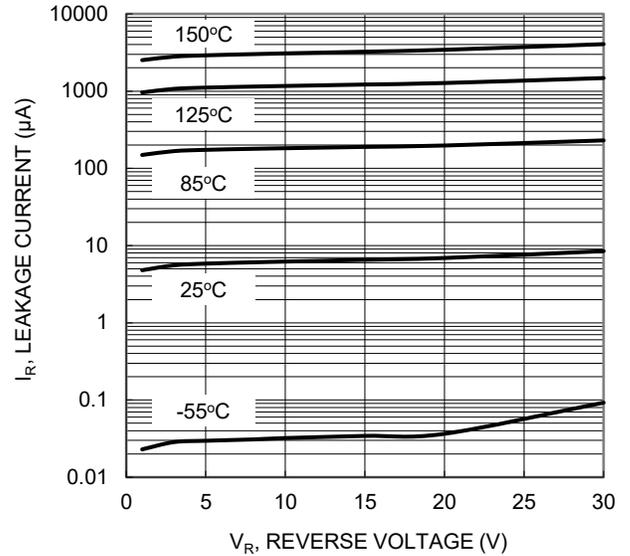


Figure 2. Typical Reverse Characteristics

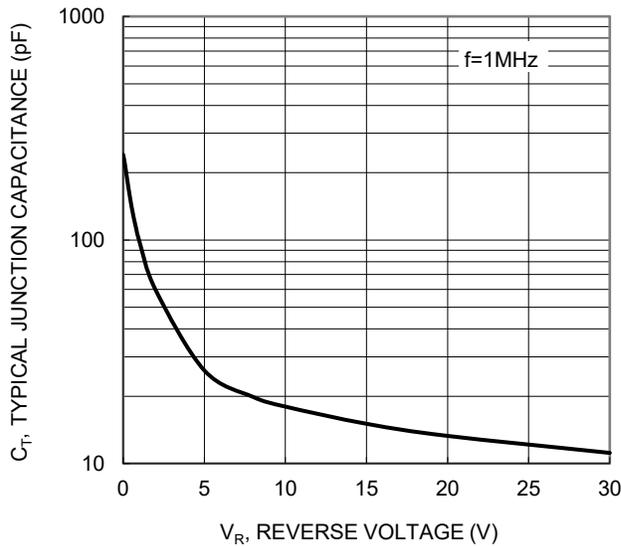


Figure 3. Typical Junction Capacitance

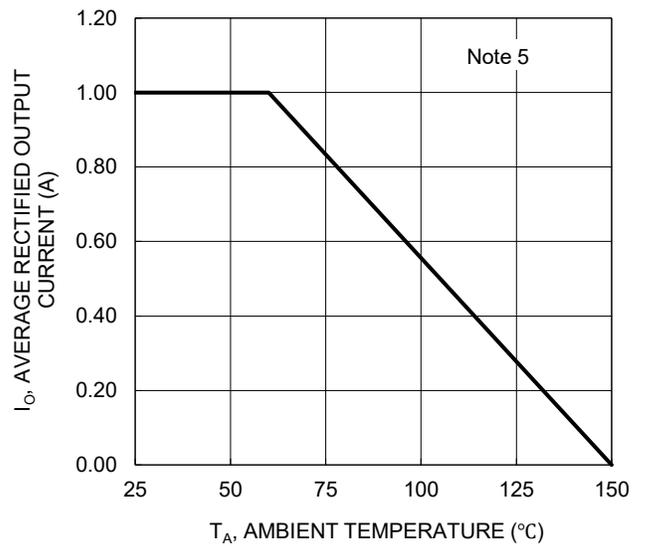


Figure 4. DC Forward Current Derating

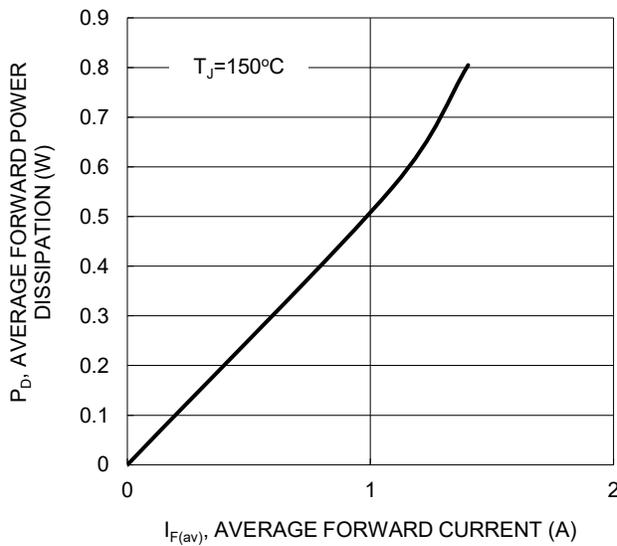
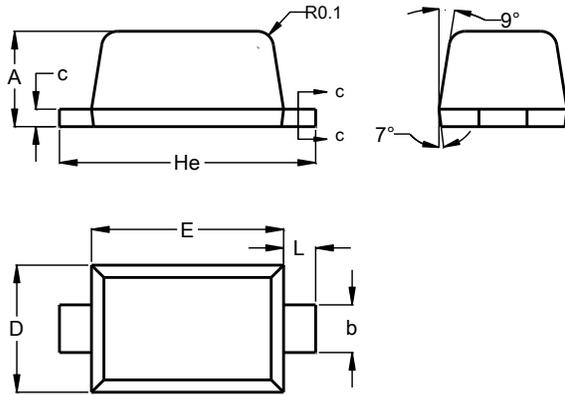


Figure 5. Forward Power Dissipation

Package Outline Dimensions

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

SOD523

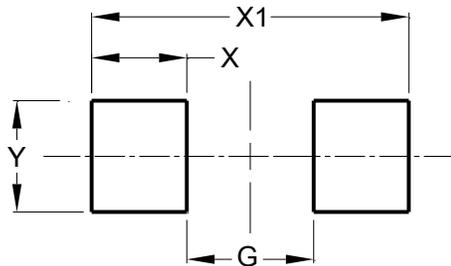


SOD523		
Dim	Min	Max
A	0.55	0.65
b	0.26	0.34
c	0.11	0.17
D	0.75	0.85
E	1.15	1.25
He	1.55	1.65
L	0.10	0.30
All Dimensions in mm		

Suggested Pad Layout

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

SOD523



Dimensions	Value (in mm)
G	0.80
X	0.60
X1	2.00
Y	0.70

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