

Product Summary (@ T_A = +25°C)

V _{RRM} (V)	I _O (A)	V _{F(MAX)} (V)	I _{R(MAX)} (μA)
30	0.2	0.61	2

Features and Benefits

- Low Forward Voltage Drop
- Superior Reverse Avalanche Capability
- Patented Super Barrier Rectifier Technology
- Soft, Fast Switching Capability
- +150°C Operating Junction Temperature
- **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-Q100/101/200, PPAP capable, and manufactured in IATF 16949 certified facilities), please refer to the related automotive grade (Q-suffix) part. A listing can be found at <https://www.diodes.com/products/automotive/automotive-products/>.**
- **This part is qualified to JEDEC standards (as references in AEC-Q) for High Reliability. <https://www.diodes.com/quality/product-definitions/>**

Applications

- SMPS
- DC-DC Converters
- Freewheeling Diodes
- Reverse Polarity Protections

Mechanical Data

- Case: SOD-523
- Case Material: Molded Plastic, "Green" Molding Compound; UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Polarity Indicator: Cathode Band
- Terminals: Finish – Matte Tin Annealed over Alloy 42 leadframe. Solderable per MIL-STD-202, Method 208 **Ⓔ**
- Weight: 0.002 grams (Approximate)

SOD-523



Top View

Ordering Information (Note 4)

Part Number	Case	Packaging
SBR0230T5-7	SOD-523	3,000/Tape & Reel

- Notes:
1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant.
 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/>.
 5. Dispensed in every other cavity of the tape.

Marking Information

SOD-523



23 = Product Type Marking Code

Maximum Ratings (@ T_A = +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 _{RRM}	30	V
Working Peak Reverse Voltage	V _{RWM}		
DC Blocking Voltage	V _{RM}		
RMS Reverse Voltage	V _{R(RMS)}	21	V
Average Rectified Output Current (See Figure 1)	I _O	0.2	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I _{FSM}	5	A

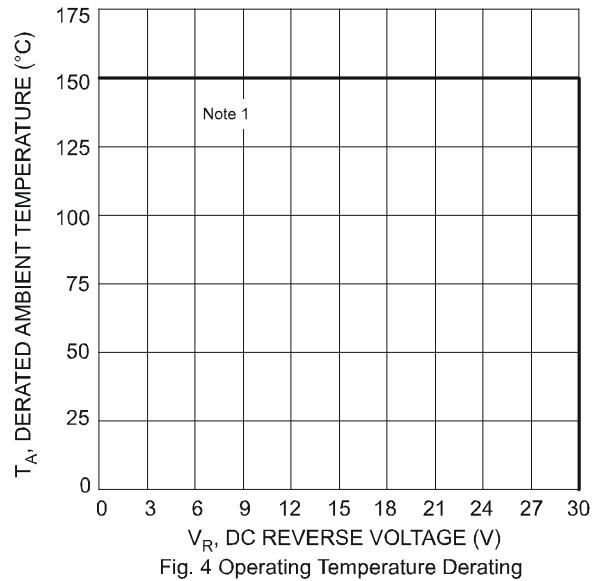
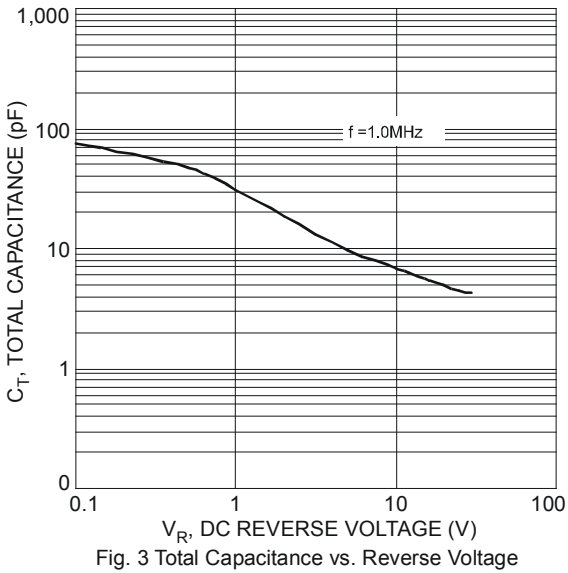
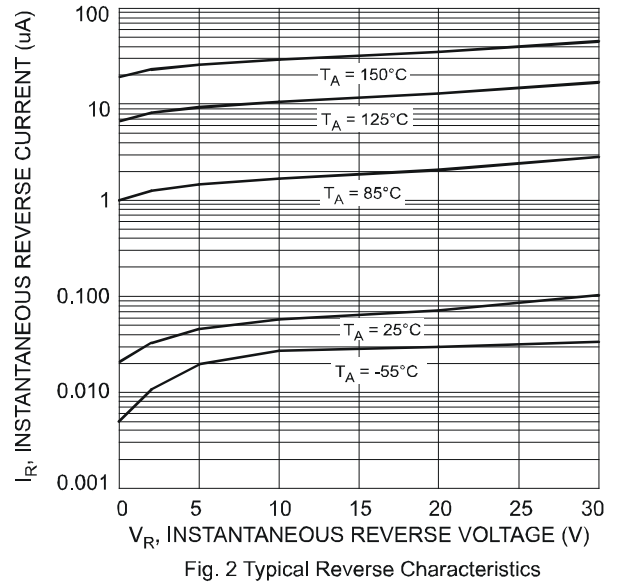
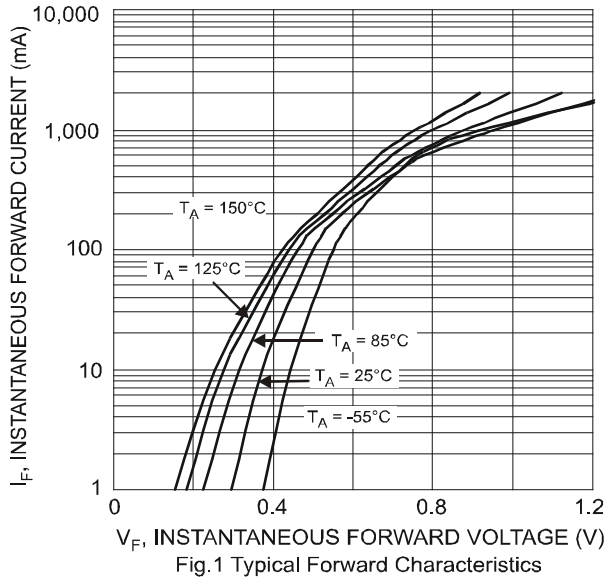
Thermal Characteristics

Characteristic	Symbol	Value	Unit
Maximum Thermal Resistance	R _{θJA}	480	°C/W
Thermal Resistance Junction to Ambient (Note 6)			
Operating and Storage Temperature Range	T _J , T _{STG}	-65 to +150	°C

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

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 7)	V _{(BR)R}	30	-	-	V	I _R = 400μA
Forward Voltage Drop	V _F	-	0.50 0.46 0.57 0.55	0.54 0.49 0.61 0.58	V	I _F = 0.1A, T _J = +25°C I _F = 0.1A, T _J = +85°C I _F = 0.2A, T _J = +25°C I _F = 0.2A, T _J = +85°C
Leakage Current (Note 7)	I _R	-	0.2 -	2 0.1	μA mA	V _R = 30V, T _J = +25°C V _R = 30V, T _J = +125°C
Reverse Recovery Time	t _{rr}	-	5	-	ns	I _F = 10mA through I _R = 10mA to I _R = 1mA, R _L = 100Ω

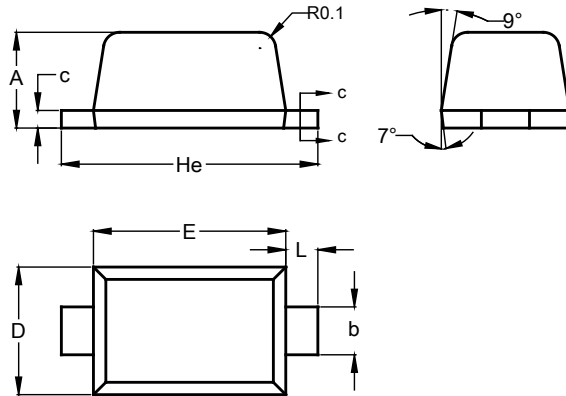
Notes: 6. Minimum recommended pad layout of FR-4 PCB, 2 oz. Copper, which can be found on our website at www.diodes.com/package-outlines.html.
7. Short duration pulse test used to minimize self-heating effect.



Package Outline Dimensions

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

SOD523

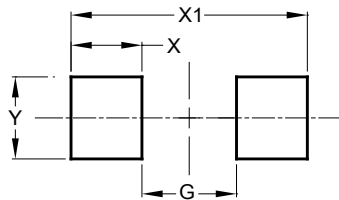


SOD523		
Dim	Min	Max
A	0.55	0.65
b	0.26	0.34
c	0.11	0.17
D	0.75	0.85
E	1.15	1.25
He	1.55	1.65
L	0.10	0.30
All Dimensions in mm		

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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