

**Product Summary** (@ TA = +25°C)

V <sub>RRM</sub> (V)	I <sub>O</sub> (A)	V <sub>F(MAX)</sub> (V)	I <sub>R(MAX)</sub> (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)**
- **Qualified to AEC-Q101 Standards for High Reliability**

**Applications**

- SMPS
- DC-DC Converter
- Freewheeling Diodes
- Reverse Polarity Protection

**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-020D
- 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**

Part Number	Case	Packaging
SBR0230T5-7 (Note 4)	SOD-523	3,000/Tape & Reel

- Notes:
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](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>.
  5. Dispensed in every other cavity of the tape.

**Marking Information**

SOD-523



23 = Product Type Marking Code

**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>	30	V
Working Peak Reverse Voltage	V <sub>RWM</sub>		
DC Blocking Voltage	V <sub>RM</sub>		
RMS Reverse Voltage	V <sub>R(RMS)</sub>	21	V
Average Rectified Output Current (See Figure 1)	I <sub>O</sub>	0.2	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I <sub>FSM</sub>	5	A

**Thermal Characteristics**

Characteristic	Symbol	Value	Unit
Maximum Thermal Resistance	R <sub>θJA</sub>	400	°C/W
Thermal Resistance Junction to Soldering (Note 6)			
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-65 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 7)	V <sub>(BR)R</sub>	30	-	-	V	I <sub>R</sub> = 400μA
Forward Voltage Drop	V <sub>F</sub>	-	0.50	0.54	V	I <sub>F</sub> = 0.1A, T <sub>J</sub> = +25°C
			0.46	0.49		I <sub>F</sub> = 0.1A, T <sub>J</sub> = +85°C
			0.57	0.61		I <sub>F</sub> = 0.2A, T <sub>J</sub> = +25°C
			0.55	0.58		I <sub>F</sub> = 0.2A, T <sub>J</sub> = +85°C
Leakage Current (Note 7)	I <sub>R</sub>	-	0.2	2	μA mA	V <sub>R</sub> = 30V, T <sub>J</sub> = +25°C
			-	0.1		V <sub>R</sub> = 30V, T <sub>J</sub> = +125°C
Reverse Recovery Time	t <sub>rr</sub>	-	5	-	ns	I <sub>F</sub> = 10mA through I <sub>R</sub> = 10mA to I <sub>R</sub> = 1mA, R <sub>L</sub> = 100Ω

Notes: 6. FR-4 PCB, 2 oz. Copper, minimum recommended pad layout per <http://www.diodes.com/datasheets/ap02001.pdf>.  
7. Short duration pulse test used to minimize self-heating effect.

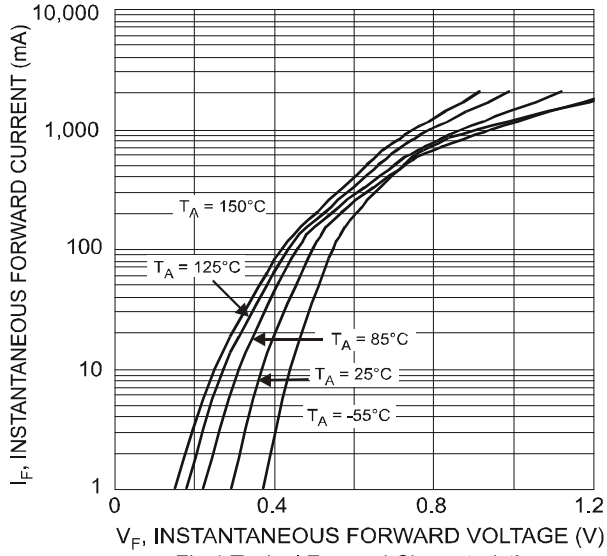


Fig. 1 Typical Forward Characteristics

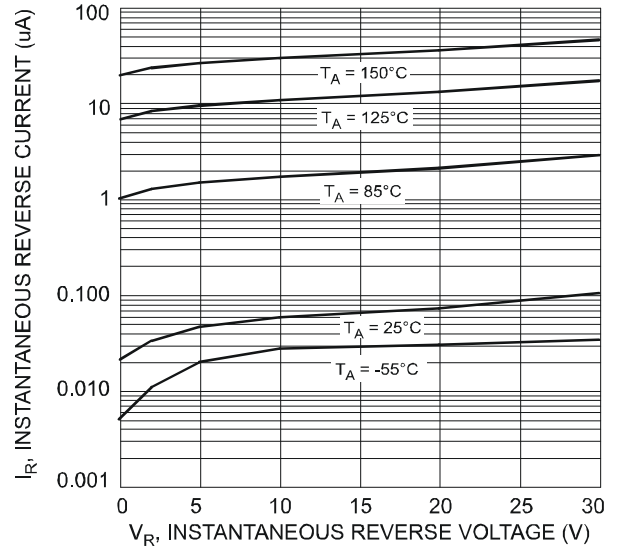


Fig. 2 Typical Reverse Characteristics

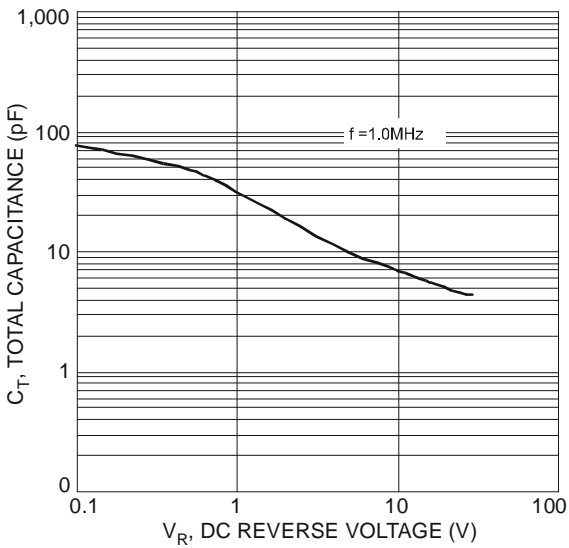


Fig. 3 Total Capacitance vs. Reverse Voltage

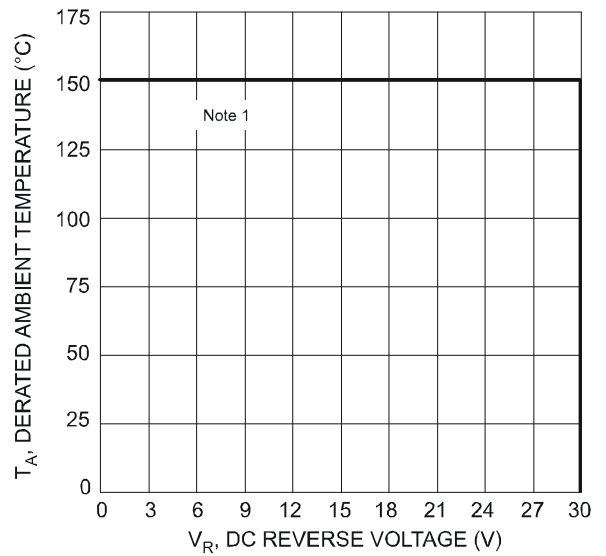
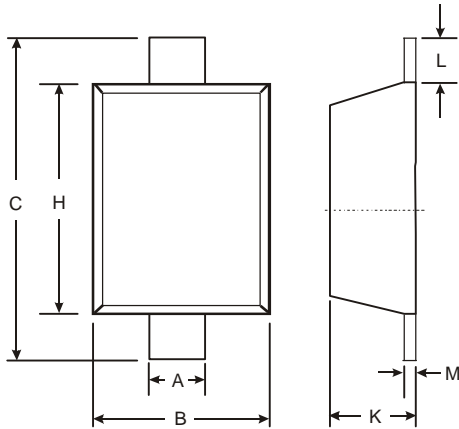


Fig. 4 Operating Temperature Derating

## Package Outline Dimensions

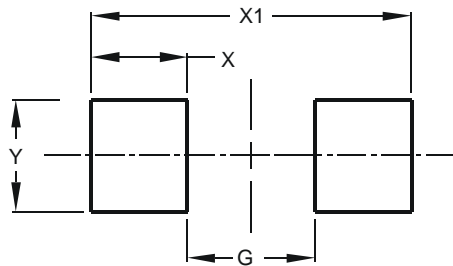
Please see AP02002 at <http://www.diodes.com/datasheets/ap02002.pdf> for the latest version.



SOD523		
Dim	Min	Max
A	0.25	0.35
B	0.70	0.90
C	1.50	1.70
H	1.10	1.30
K	0.55	0.65
L	0.10	0.30
M	0.10	0.12
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	0.80
X	0.60
X1	2.00
Y	0.70

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