

## Features

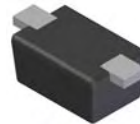
- Low Forward Voltage Drop
- Superior Reverse Avalanche Capability
- Patented Super Barrier Rectifier Technology
- Soft, Fast Switching Capability
- 150°C Operating Junction Temperature
- **Lead Free Finish, RoHS Compliant**
- **“Green” Molding Compound (No Br, Sb)**

## 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 **e3**
- Marking Information: See Page 2
- Ordering Information: See Page 2
- Weight: 0.002 grams (approximate)



Top View



Bottom View

## 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>	20	V
Working Peak Reverse Voltage	V <sub>RWM</sub>		
DC Blocking Voltage	V <sub>RM</sub>		
RMS Reverse Voltage	V <sub>R(RMS)</sub>	14	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 1)			
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 2)	V <sub>(BR)R</sub>	20	-	-	V	I <sub>R</sub> = 400μA
Forward Voltage Drop	V <sub>F</sub>	-	0.37	0.41	V	I <sub>F</sub> = 0.1A, T <sub>J</sub> = 25°C
			0.34	0.38		I <sub>F</sub> = 0.1A, T <sub>J</sub> = 85°C
			0.43	0.47		I <sub>F</sub> = 0.2A, T <sub>J</sub> = 25°C
			0.41	0.45		I <sub>F</sub> = 0.2A, T <sub>J</sub> = 85°C
Leakage Current (Note 2)	I <sub>R</sub>	-	-	40	μA mA	V <sub>R</sub> = 20V, T <sub>J</sub> = 25°C
			-	0.5		V <sub>R</sub> = 20V, T <sub>J</sub> = 85°C

- Notes: 1. FR-4 PCB, 2 oz. Copper, minimum recommended pad layout per <http://www.diodes.com/datasheets/ap02001.pdf>.  
2. Short duration pulse test used to minimize self-heating effect.

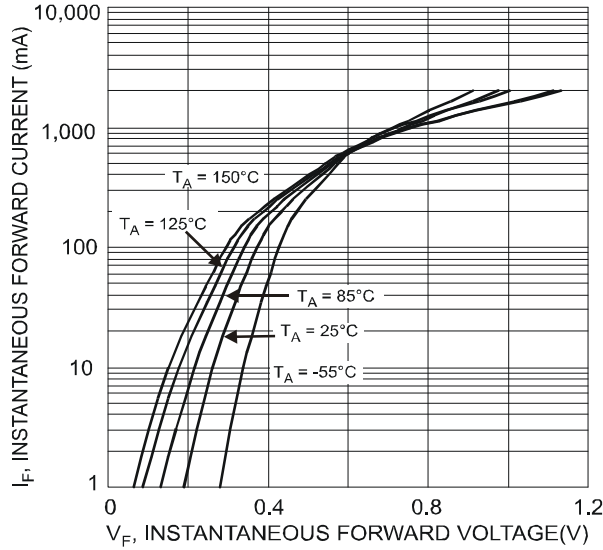


Fig. 1 Typical Forward Characteristics

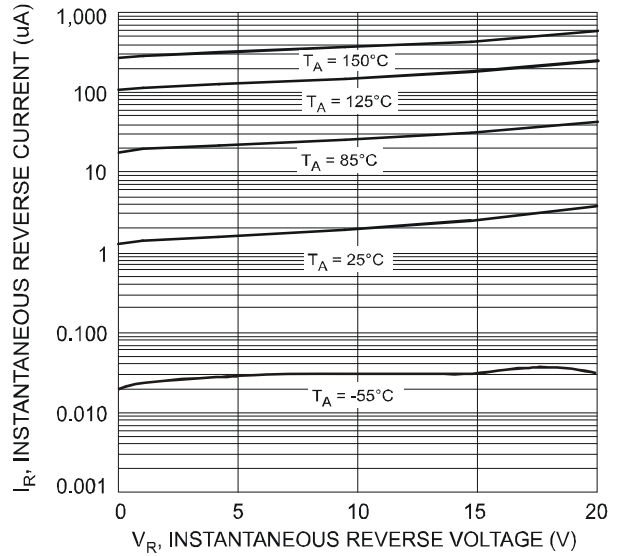


Fig. 2 Typical Reverse Characteristics

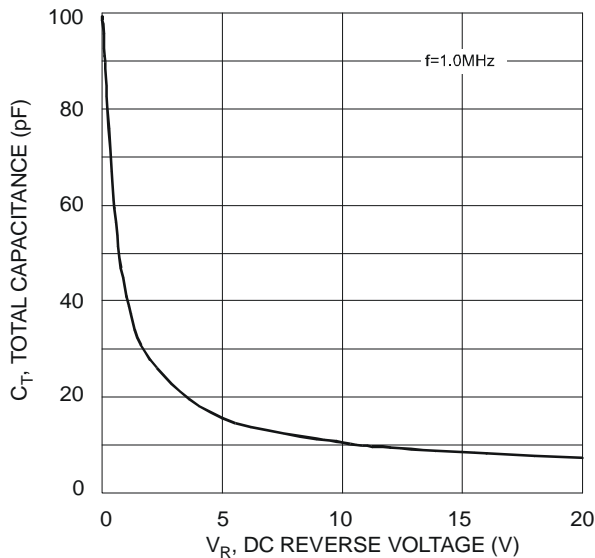


Fig. 3 Total Capacitance vs. Reverse Voltage

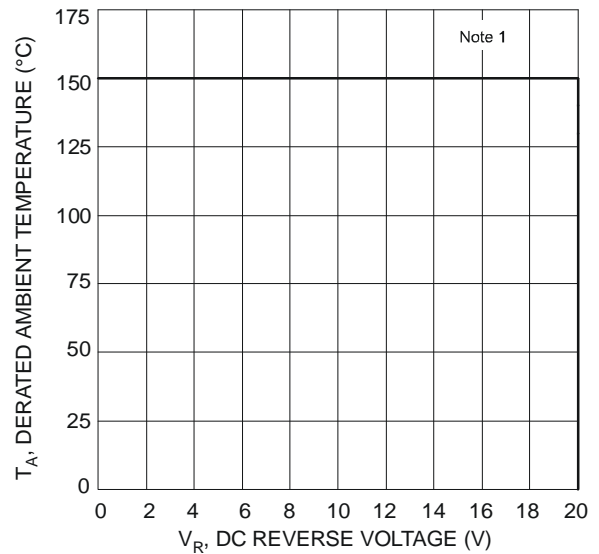


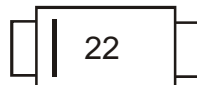
Fig. 4 Operating Temperature Derating

**Ordering Information** (Note 3)

Part Number	Case	Packaging
SBR0220T5-7 (Note 4)	SOD-523	3000/Tape & Reel

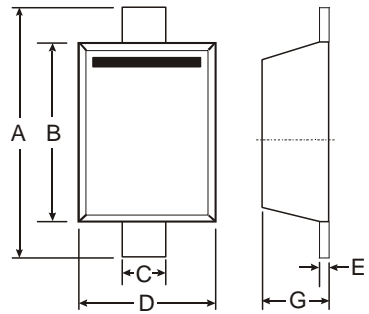
Notes: 3. For packaging details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.  
4. Dispensed in every other cavity of the tape.

**Marking Information**



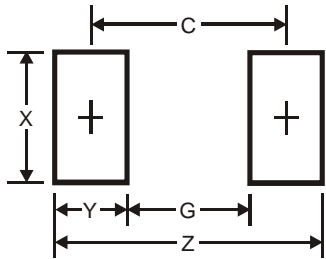
22 = Product Type Marking Code

**Package Outline Dimensions**



SOD-523		
Dim	Min	Max
A	1.50	1.70
B	1.10	1.30
C	0.25	0.35
D	0.70	0.90
E	0.10	0.20
G	0.50	0.70
All Dimensions in mm		

**Suggested Pad Layout**



Dimensions	Value (in mm)
Z	2.3
G	1.1
X	0.8
Y	0.6
C	1.7

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