

Features

- Ultra Low Forward Voltage Drop
- Excellent High Temperature Capability
- Patented Super Barrier Rectifier Technology
- Soft, Fast Switching Capability
- 150°C Operating Junction Temperature
- **Lead Free Finish, RoHS Compliant (Note 1)**
- **“Green” Molding Compound (No Br, Sb)**

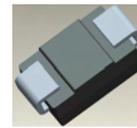
Mechanical Data

- Case: SMA
- Case Material: Molded Plastic, UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020D
- Terminal Connections: Lead Free Plating (Matte Tin Finish.) Solderable per MIL-STD-202, Method 208 **(e3)**
- Polarity Indicator: Cathode Band
- Marking Information: See Page 3
- Ordering Information: See Page 3
- Weight: 0.064 grams (approximate)

SMA



Top View



Bottom View

Maximum Ratings @ $T_A = 25^\circ\text{C}$ 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}	150	V
Working Peak Reverse Voltage	V_{RWM}		
DC Blocking Voltage	V_{RM}		
RMS Reverse Voltage	$V_{R(RMS)}$	106	V
Average Rectified Output Current (See Figure 1)	I_O	2.0	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I_{FSM}	42	A

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Thermal Resistance Junction to Soldering (Note 2)	$R_{\theta JS}$	3	°C/W
Thermal Resistance Junction to Ambient (Note 3)	$R_{\theta JA}$	119	
Thermal Resistance Junction to Ambient (Note 4)	$R_{\theta JA}$	88	
Operating and Storage Temperature Range	T_J, T_{STG}	-65 to +150	°C

Electrical Characteristics @ $T_A = 25^\circ\text{C}$ unless otherwise specified

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 5)	$V_{(BR)R}$	150	-	-	V	$I_R = 100\mu\text{A}$
Forward Voltage Drop	V_F	-	-	0.78	V	$I_F = 2.0\text{A}, T_J = 25^\circ\text{C}$
		-	-	0.62		$I_F = 2.0\text{A}, T_J = 125^\circ\text{C}$
Leakage Current (Note 5)	I_R	-	-	0.1	mA	$V_R = 150\text{V}, T_J = 25^\circ\text{C}$
		-	-	10		$V_R = 150\text{V}, T_J = 125^\circ\text{C}$

- Notes:
1. EU Directive 2002/95/EC (RoHS). All applicable RoHS exemptions applied, see *EU Directive 2002/95/EC Annex Notes*.
 2. Theoretical $R_{\theta JS}$ calculated from the top center of the die straight down to the PCB cathode tab solder junction.
 3. FR-4 PCB, 2 oz. Copper, minimum recommended pad layout per <http://www.diodes.com/datasheets/ap02001.pdf>. $T_A = 25^\circ\text{C}$
 4. Polyimide PCB, 2 oz. Copper, minimum recommended pad layout per <http://www.diodes.com/datasheets/ap02001.pdf>
 5. Short duration pulse test used to minimize self-heating effect.

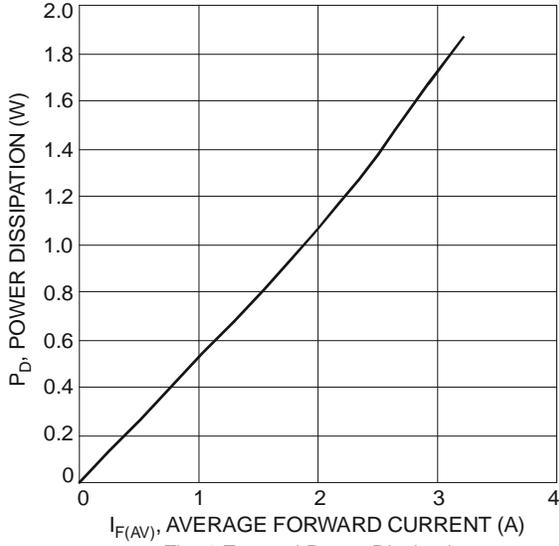


Fig. 1 Forward Power Dissipation

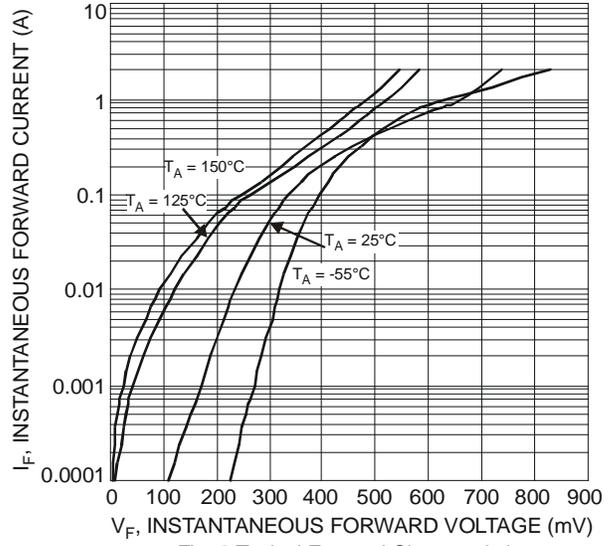


Fig. 2 Typical Forward Characteristics

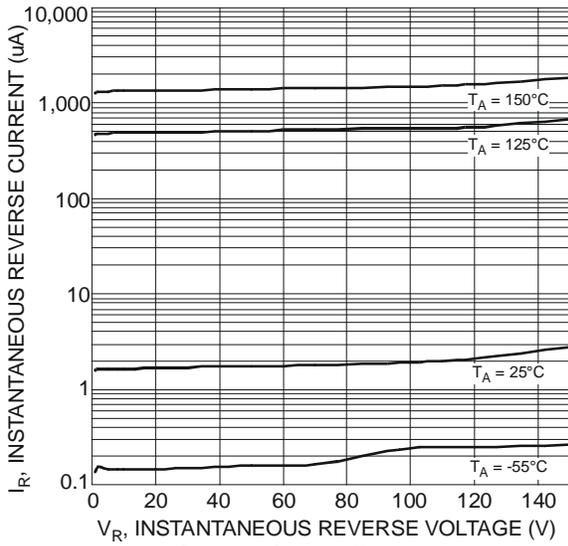


Fig. 3 Typical Reverse Characteristics

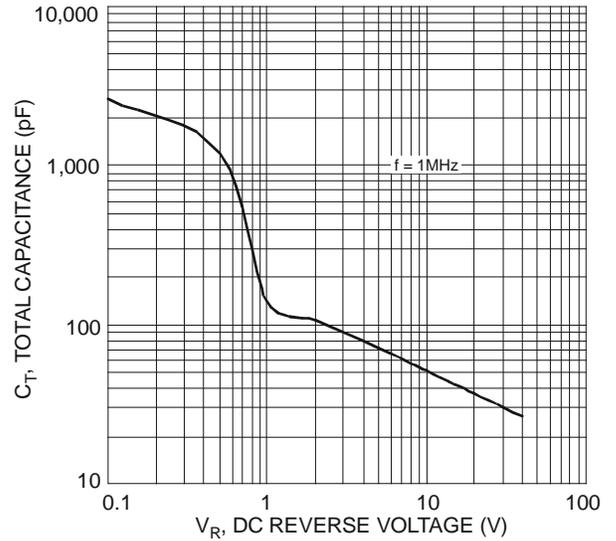


Fig. 4 Total Capacitance vs. Reverse Voltage

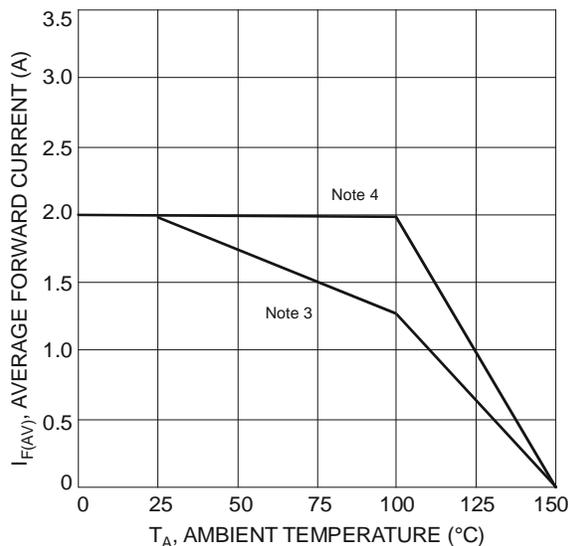


Fig. 5 DC Forward Current Derating Curve

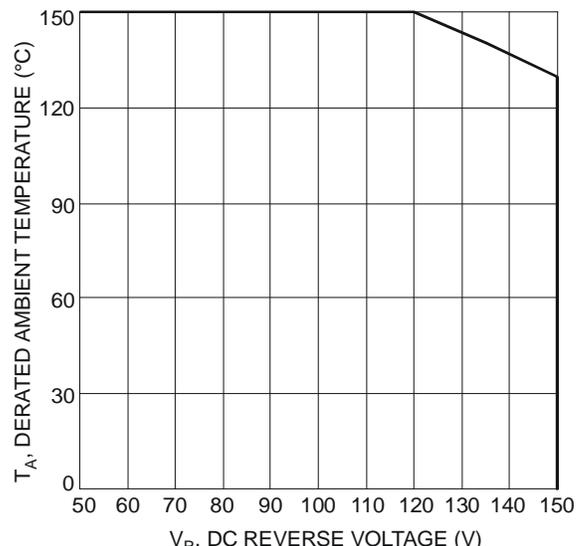
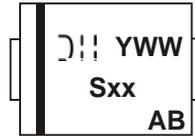


Fig. 6 Operating Temperature Derating

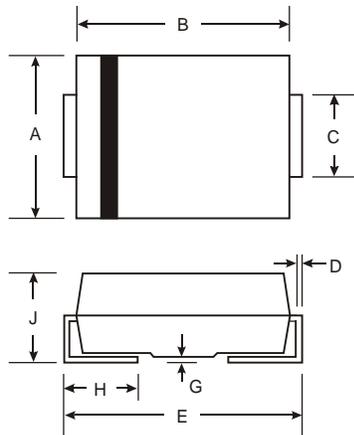
Ordering Information (Note 6)

Part Number	Case	Packaging
SBR2A150SA-13	SMA	5000/Tape & Reel

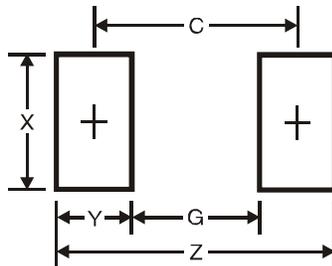
Notes: 6. For packaging details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

Marking Information


S V B or S Q B = Product Type Marking Code
 D = Manufacturers' code marking
 YWW = Date Code Marking
 Y = Last digit of year (ex: 7 for 2007)
 WW = Week code 01 to 52
 AB = Foundry and Assembly Code

Package Outline Dimensions


SMA		
Dim	Min	Max
A	2.29	2.92
B	4.00	4.60
C	1.27	1.63
D	0.15	0.31
E	4.80	5.59
G	0.05	0.20
H	0.76	1.52
J	2.01	2.30
All Dimensions in mm		

Suggested Pad Layout


Dimensions	Value (in mm)
Z	6.5
G	1.5
X	1.7
Y	2.5
C	4.0

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