Green

2.0A SBR®
SURFACE MOUNT SUPER BARRIER RECTIFIER

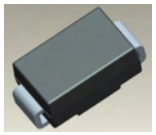
Features

- Ultra Low Forward Voltage Drop
- Excellent High Temperature Capability
- Patented Super Barrier Rectifier Technology
- Soft, Fast Switching Capability
- 175ºC Operating Junction Temperature
- **Lead Free Finish, RoHS Compliant (Note 1)**
- **Green Molding Compound (No Halogen and Antimony) (Note 2)**

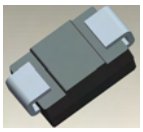
Mechanical Data

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

SMA



Top View



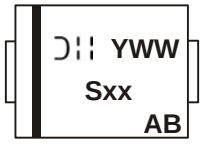
Bottom View

Ordering Information (Note 3)

Part Number	Case	Packaging
SBR2U150SA-13	SMA	5000/Tape & Reel

Notes:
1. EU Directive 2002/95/EC (RoHS). All applicable RoHS exemptions applied, see EU Directive 2002/95/EC Annex Notes.
2. Diodes Inc.'s "Green" policy can be found on our website at http://www.diodes.com.
3. For packaging details, go to our website at http://www.diodes.com.

Marking Information



S D B or S Q B = Product Type Marking Code
= Manufacturers' code marking
YWW = Date Code Marking
Y = Last digit of year (ex: 9 for 2009)
WW = Week code (01 – 53)
AB = Foundry and Assembly 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 Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_{RM}	150	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
Maximum Voltage Rate of Change (Rated V_R)	dv/dt	10,000	V/μs

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Thermal Resistance Junction to Soldering (Note 4)	$R_{\theta JS}$	3	°C/W
Thermal Resistance Junction to Ambient (Note 5)	$R_{\theta JA}$	119	
Thermal Resistance Junction to Ambient (Note 6)	$R_{\theta JA}$	88	
Operating and Storage Temperature Range	T_J, T_{STG}	-65 to +175	°C

Electrical Characteristics @T_A = 25°C unless otherwise specified

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 7)	$V_{(BR)R}$	150	-	-	V	I_R = 100μA
Forward Voltage Drop	V_F	-	-	0.8	V	I_F = 2.0A, T_J = 25ºC
		-	-	0.65		I_F = 2.0A, T_J = 125ºC
Leakage Current (Note 6)	I_R	-	-	75	μA	V_R = 150V, T_J = 25ºC
		-	-	10	mA	V_R = 150V, T_J = 125ºC

Notes:
4. Theoretical $R_{\theta JS}$ calculated from the top center of the die straight down to the PCB cathode tab solder junction.
5. FR-4 PCB, 2 oz. Copper, minimum recommended pad layout per http://www.diodes.com. T_A = 25ºC
6. Polymide PCB, 2 oz. Copper, minimum recommended pad layout per http://www.diodes.com
7. Short duration pulse test used to minimize self-heating effect.

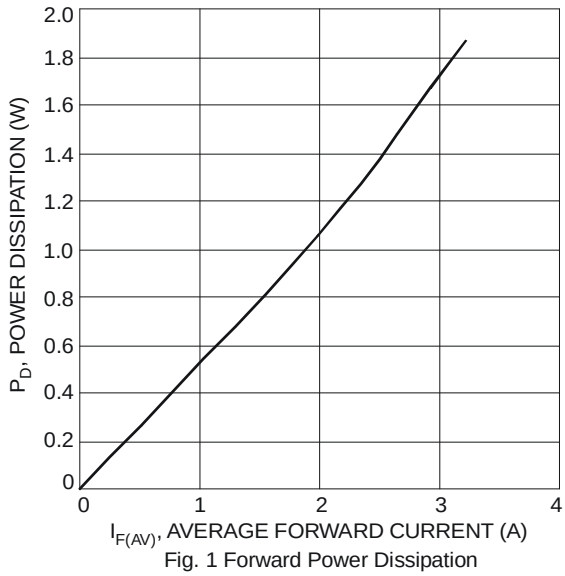


Fig. 1 Forward Power Dissipation

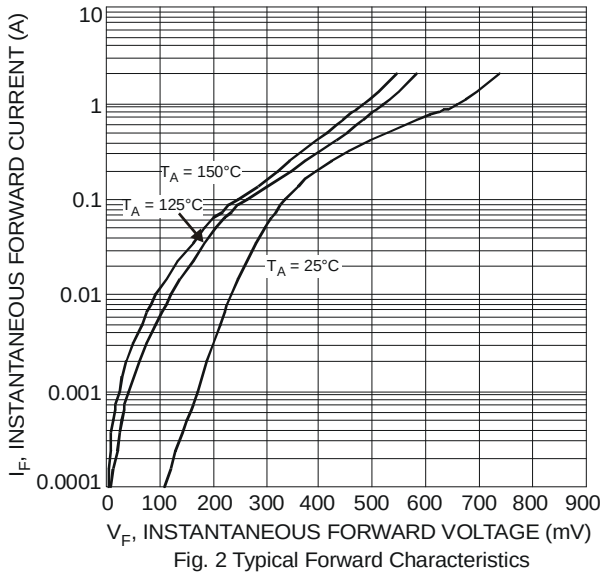


Fig. 2 Typical Forward Characteristics

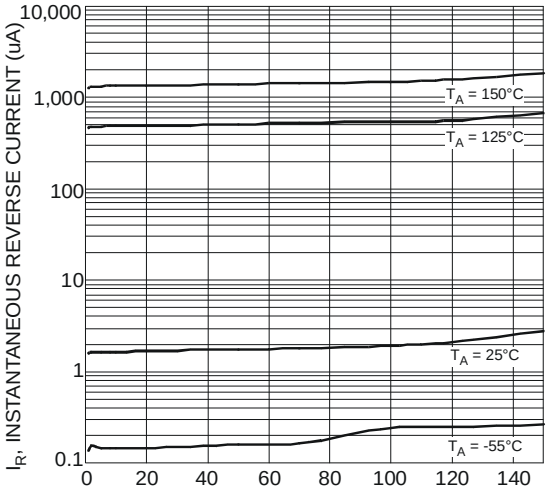


Fig. 3 Typical Reverse Characteristics

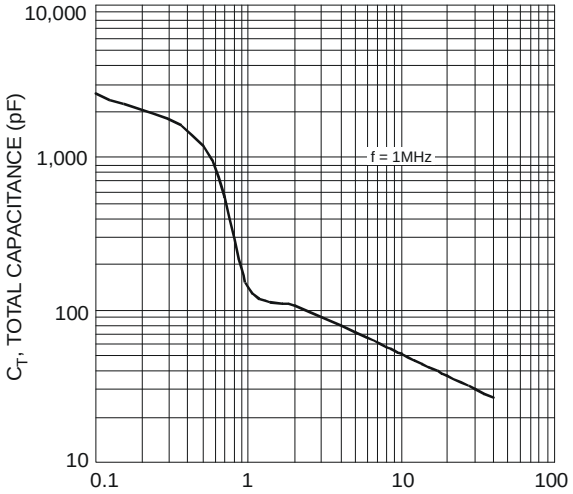


Fig. 4 Total Capacitance vs. Reverse Voltage

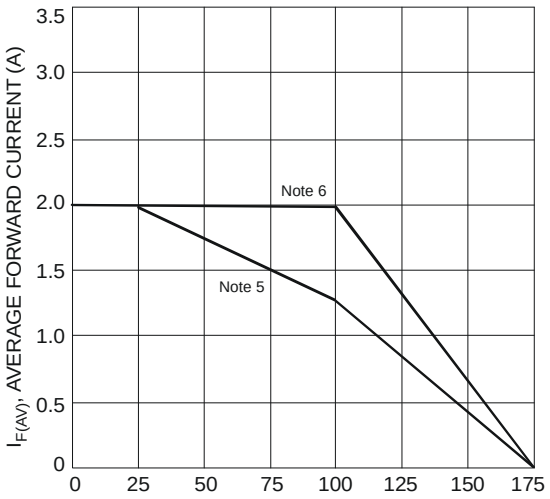


Fig. 5 DC Forward Current Derating Curve

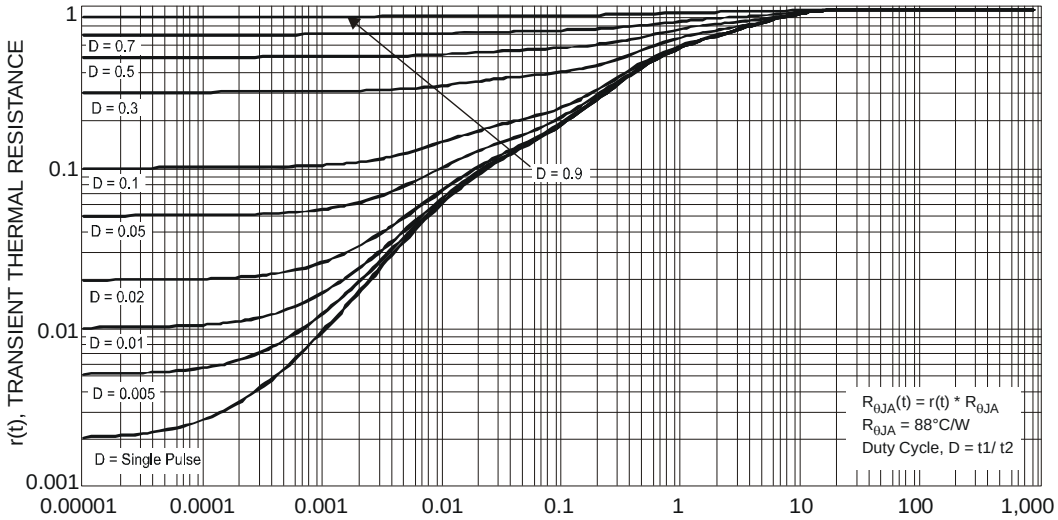
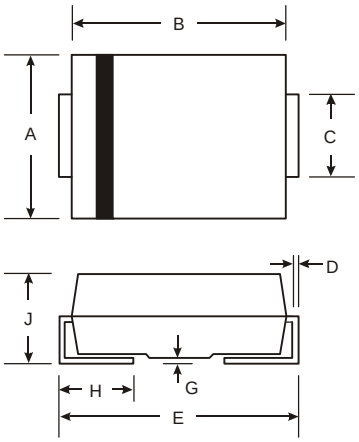


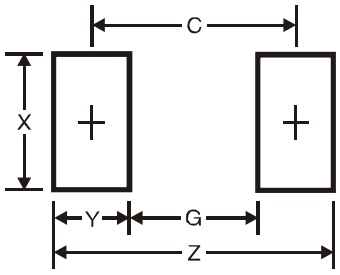
Fig. 6 Transient Thermal Resistance

Package Outline Dimensions



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

Suggested Pad Layout



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		

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