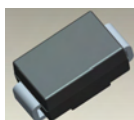


Features

- Ultra Low Forward Voltage Drop
- 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 Halogen and Antimony) (Note 6)**

Mechanical Data

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



Top View



Bottom View

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}	20	V
Working Peak Reverse Voltage	V _{RWM}		
DC Blocking Voltage	V _{RM}		
RMS Reverse Voltage	V _{R(RMS)}	14	V
Average Rectified Output Current (See Figure 1)	I _O	3.0	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I _{FSM}	66	A

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Maximum Thermal Resistance	R _{θJS}	44	°C/W
Thermal Resistance Junction to Soldering (Note 2)	R _{θJA}	127	
Thermal Resistance Junction to Ambient (Note 3)	R _{θJA}	97	
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 5)	V _{(BR)R}	20	-	-	V	I _R = 0.75mA
Forward Voltage Drop	V _F	-	0.26	0.30	V	I _F = 0.5A, T _J = 25°C
		-	0.29	0.33		I _F = 1.0A, T _J = 25°C
		-	0.35	0.39		I _F = 3.0A, T _J = 25°C
		-	0.28	0.32		I _F = 3.0A, T _J = 125°C
Leakage Current (Note 5)	I _R	-	-	500	μA	V _R = 20V, T _J = 25°C
		-	-	100	mA	V _R = 20V, T _J = 125°C

- Notes:
1. EU Directive 2002/95/EC (RoHS). All applicable RoHS exemptions applied. Please visit our website at http://www.diodes.com/quality/lead_free.html.
 2. Theoretical R_{θJS} 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°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.
 6. Product manufactured with Data Code 0924 (week 24, 2009) and newer are built with Green Molding Compound.

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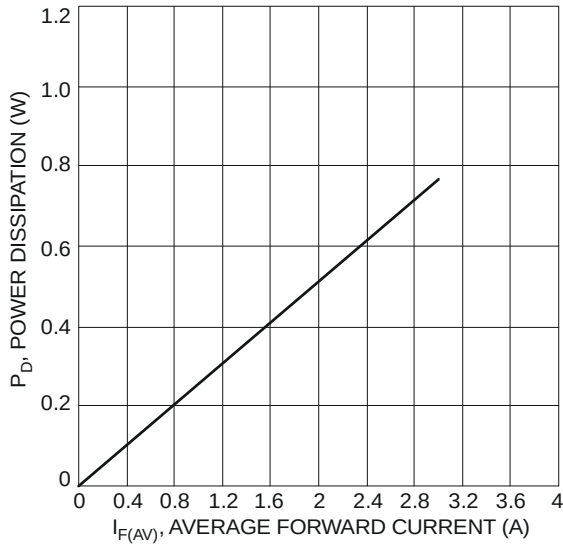


Fig. 1 Forward Power Dissipation

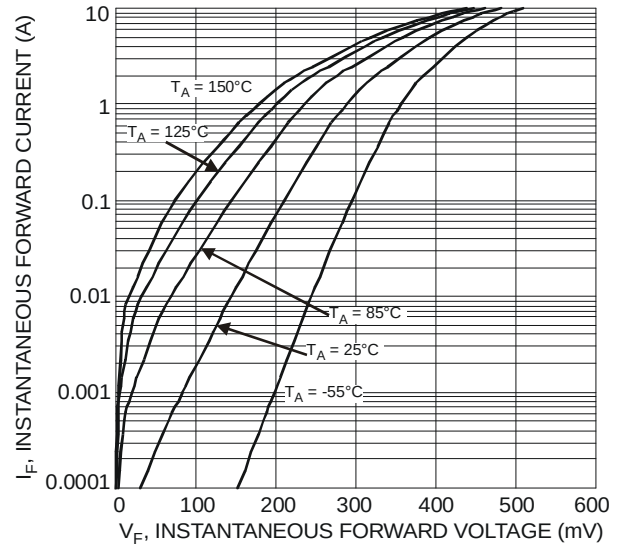


Fig. 2 Typical Forward Characteristics

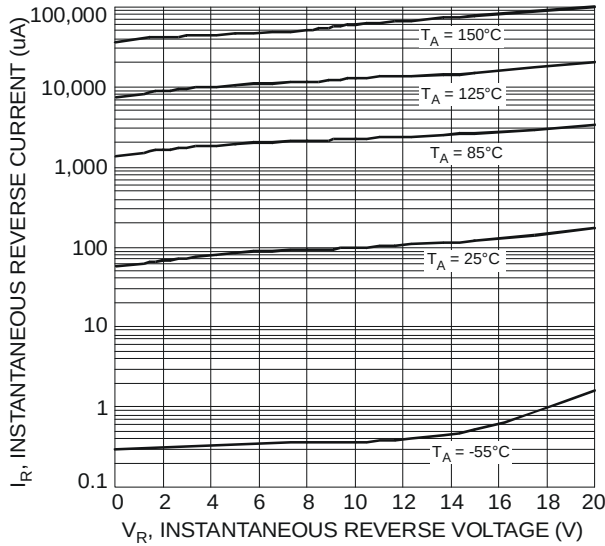


Fig. 3 Typical Reverse Characteristics

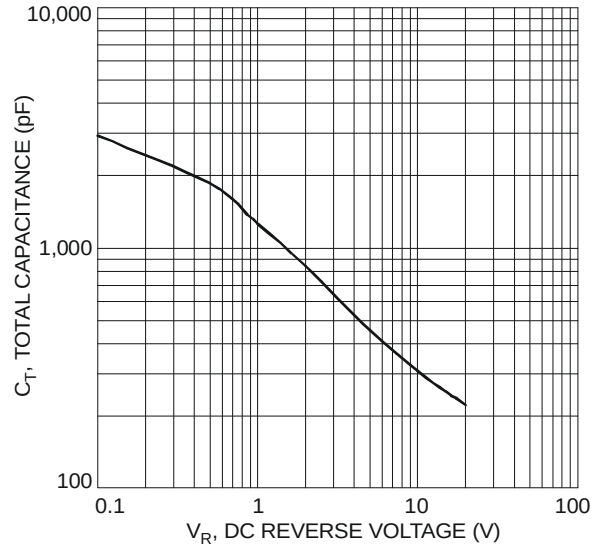


Fig. 4 Total Capacitance vs. Reverse Voltage

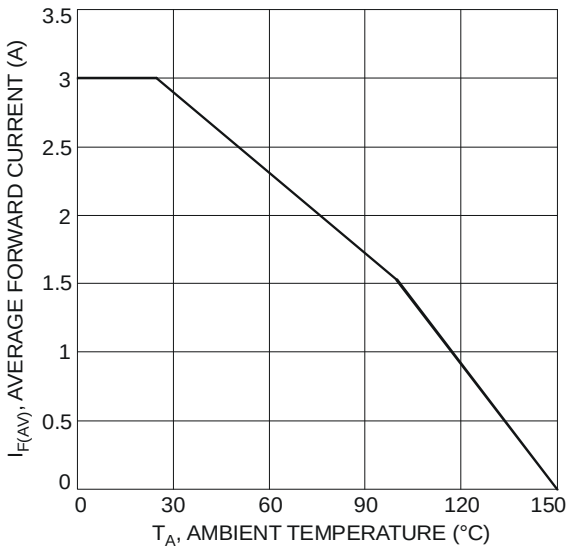


Fig. 5 Forward Current Derating Curve

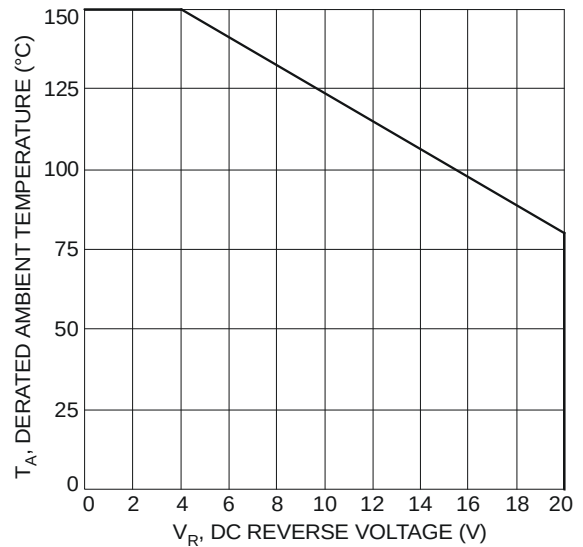


Fig. 6 Operating Temperature Derating

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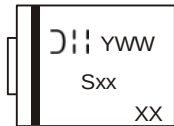
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Ordering Information (Note 7)

Part Number	Case	Packaging
SBR3U20SA-13	SMA	5000/Tape & Reel

Notes: 7. For packaging details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

Marking Information



SQ2, SV2 = Product Type Marking Code

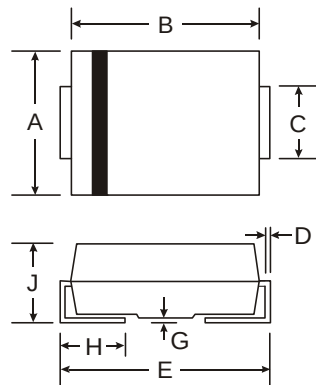
= Manufacturers' Code Marking

YWW = Date Code Marking

Y = Last Digit of Year ex: 7 for 2007

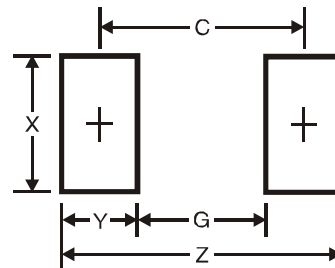
WW = Week Code 01 to 52

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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