Lead-free Green

0.5A SBR®
SURFACE MOUNT SUPER BARRIER RECTIFIER

Features

- Ultra Low Forward Voltage Drop
- Superior Reverse Avalanche Capability
- Patented Super Barrier Rectifier Technology
- Soft, Fast Switching Capability
- 150ºC Operating Junction Temperature
- **Lead Free Finish, RoHS Compliant (Note 1)**
- **"Green" Molding Compound (No Br, Sb)**
- **Qualified to AEC-Q101 Standards for High Reliability**

Mechanical Data

- Case: DFN1006-2
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminal Connections: Cathode Dot
- Terminals: Finish - NiPdAu over Copper leadframe. Solderable per MIL-STD-202, Method 208
- Weight: 0.001 grams

Top View

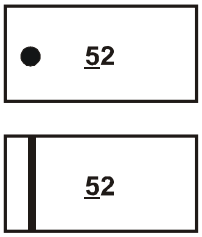
Bottom View

Ordering Information (Note 2)

Part Number	Case	Packaging
SBR05U20LP-7	DFN1006-2	3,000/Tape & Reel
SBR05U20LP-7B	DFN1006-2	10,000/Tape & Reel

Notes: 1. EU Directive 2002/95/EC (RoHS). All applicable RoHS exemptions applied, see EU Directive 2002/95/EC Annex Notes
2. For packaging details, go to our website at http://www.diodes.com.

Marking Information



52 = Product Type Marking Code
-7: Dot Denotes Cathode Side
-7B: Bar Denotes Cathode Side

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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}	20	V
RMS Reverse Voltage	$V_{R(RMS)}$	14	V
Average Rectified Output Current (See Figure 1)	I_O	500	mA
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I_{FSM}	5	A

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Operating and Storage Temperature Range	T_J, T_{STG}	-65 to +150	ºC

Electrical Characteristics @T_A = 25°C unless otherwise specified

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 3)	$V_{(BR)R}$	20	-	-	V	I_R = 50µA
Forward Voltage Drop	V_F	-	0.34	0.38	V	I_F = 0.1A, T_J = 25ºC
		-	0.25	0.28		I_F = 0.1A, T_J = 150ºC
		-	0.39	0.43		I_F = 0.2A, T_J = 25ºC
		-	0.31	0.34		I_F = 0.2A, T_J = 150ºC
		-	0.47	0.50		I_F = 0.5A, T_J = 25ºC
		-	0.43	0.46		I_F = 0.5A, T_J = 150ºC
Leakage Current (Note 3)	I_R	-	6 1.5	50 5	µA mA	V_R = 20V, T_J = 25ºC V_R = 20V, T_J = 150ºC

Notes: 3. Short duration pulse test used to minimize self-heating effect.

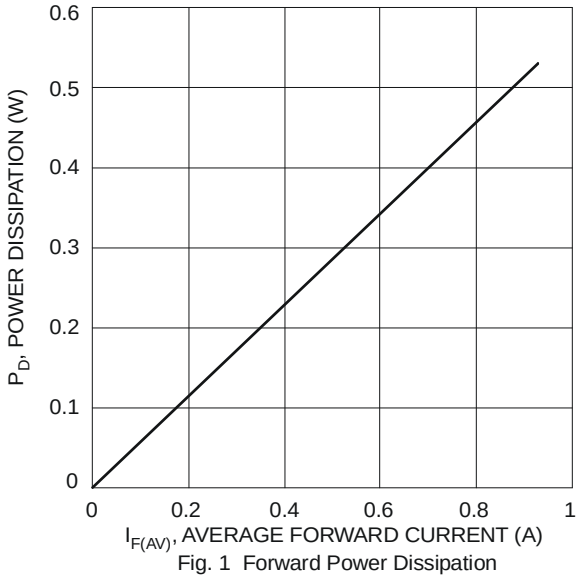

Fig. 1 Forward Power Dissipation

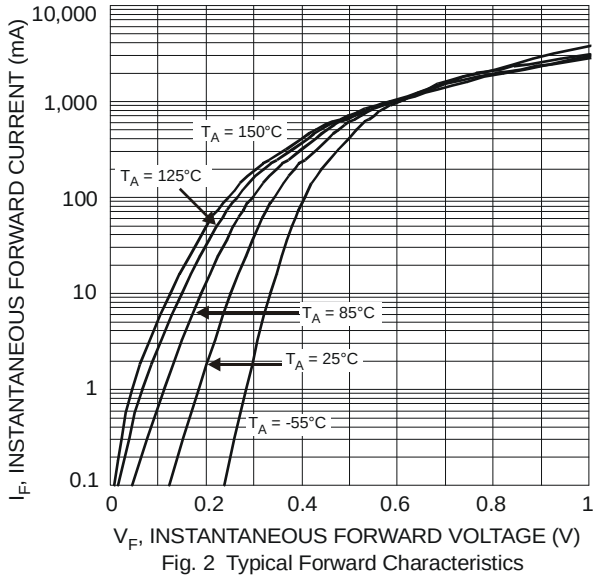

Fig. 2 Typical Forward Characteristics

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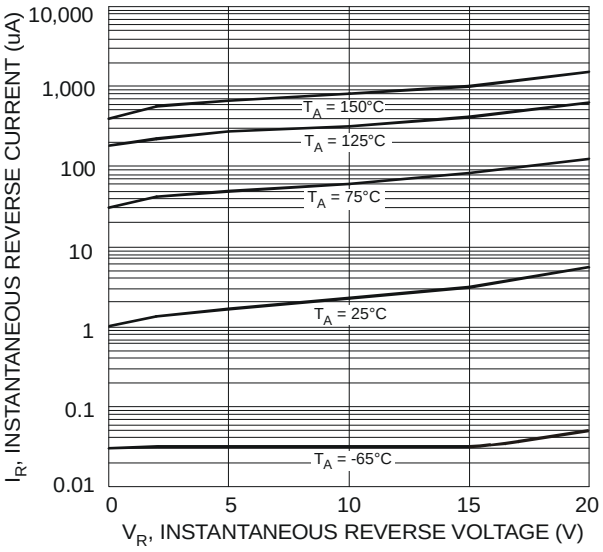


Fig. 3 Typical Reverse Characteristics

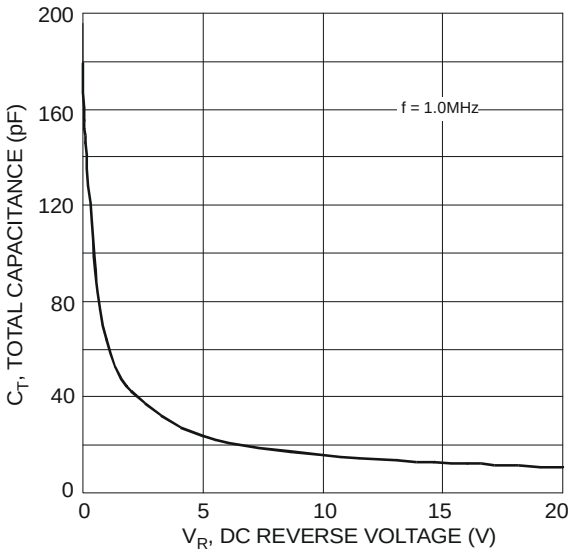


Fig. 4 Total Capacitance vs. Reverse Voltage

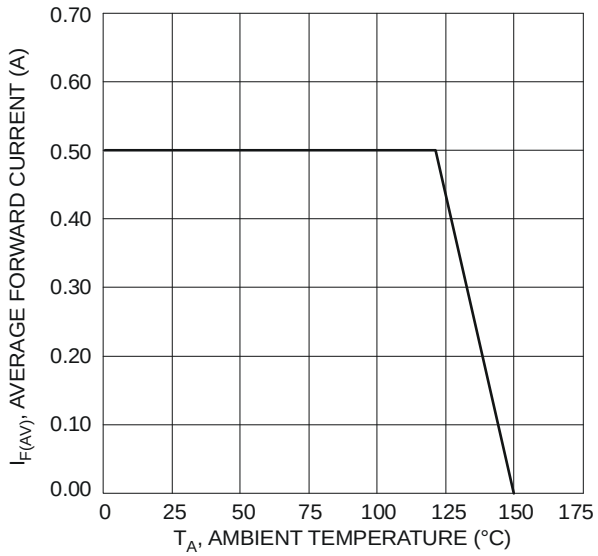


Fig. 5 Forward Current Derating Curve

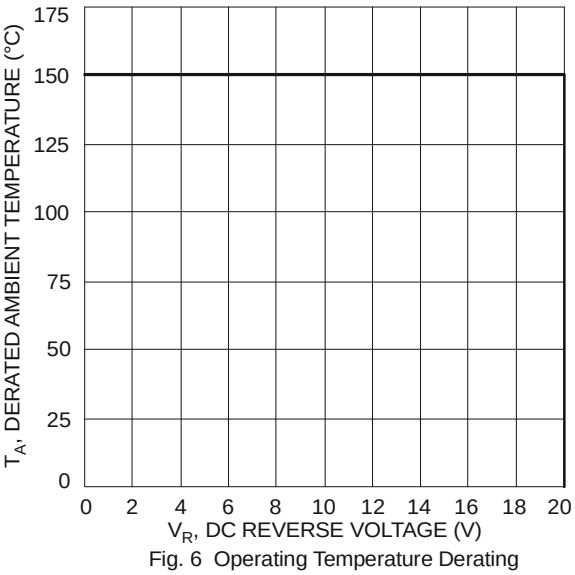
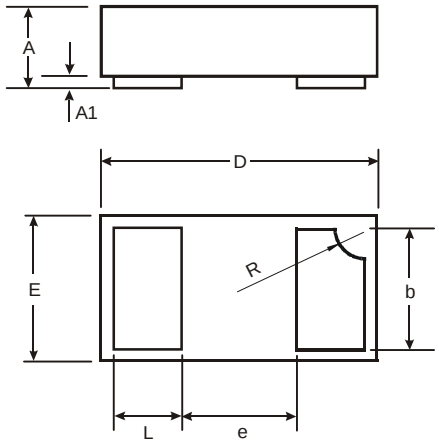


Fig. 6 Operating Temperature Derating

Package Outline Dimensions



DFN1006-2			
Dim	**Min**	**Max**	**Typ**
A	0.47	0.53	0.50
A1	0	0.05	0.03
b	0.45	0.55	0.50
D	0.95	1.075	1.00
E	0.55	0.675	0.60
e	-	-	0.40
L	0.20	0.30	0.25
R	0.05	0.15	0.10
All Dimensions in mm			

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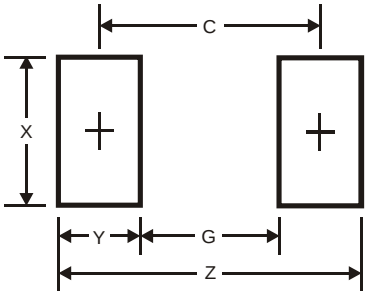
Suggested Pad Layout



Dimensions	Value (in mm)
Z	1.1
G	0.3
X	0.7
Y	0.4
C	0.7