

Features

- Ultra 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 (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

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}	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	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	$^\circ\text{C}$

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

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

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

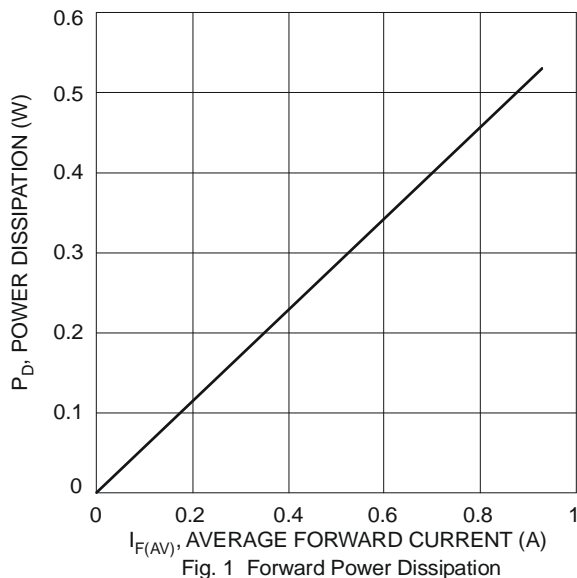


Fig. 1 Forward Power Dissipation

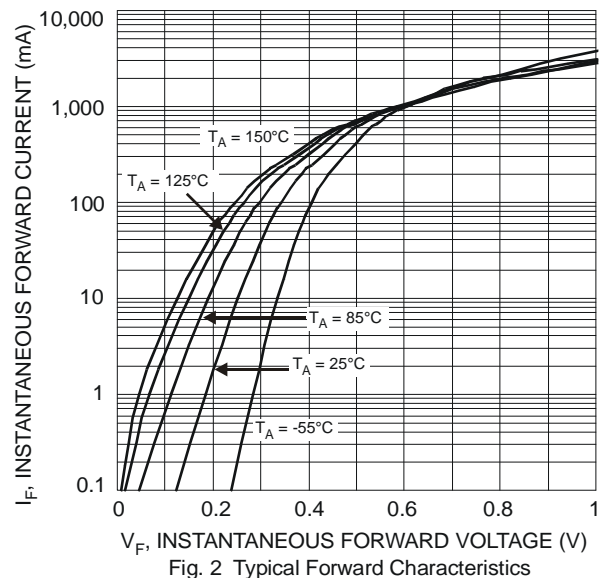


Fig. 2 Typical Forward Characteristics

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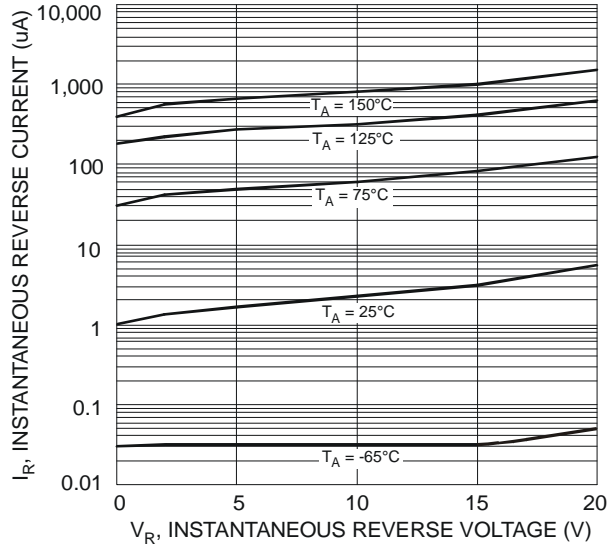


Fig. 3 Typical Reverse Characteristics

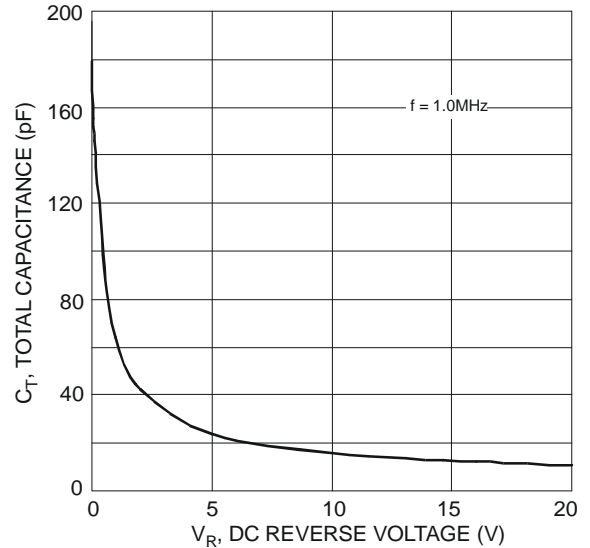


Fig. 4 Total Capacitance vs. Reverse Voltage

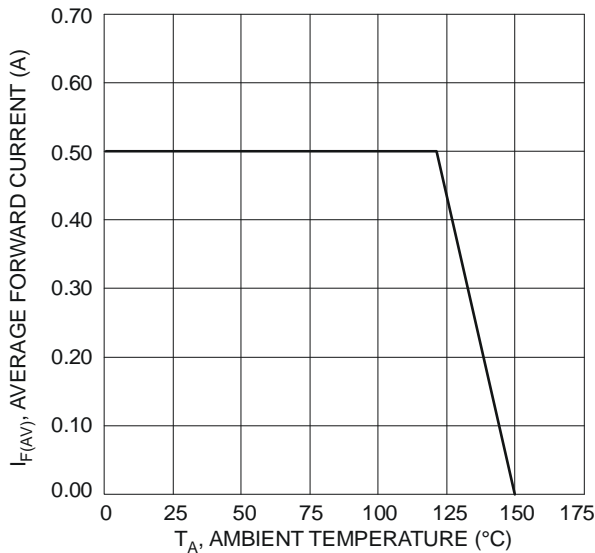


Fig. 5 Forward Current Derating Curve

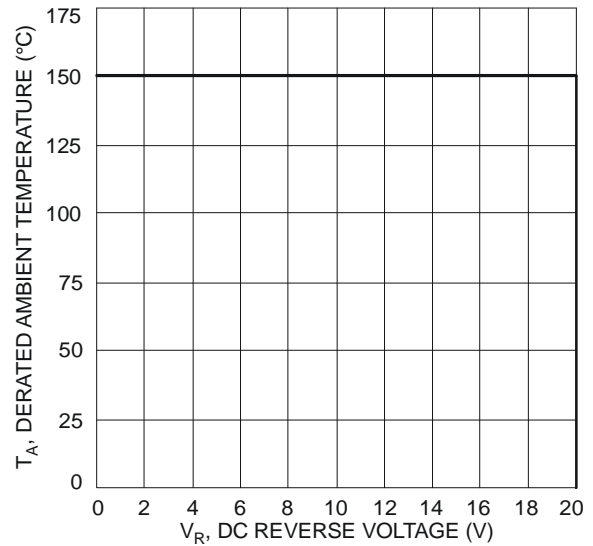
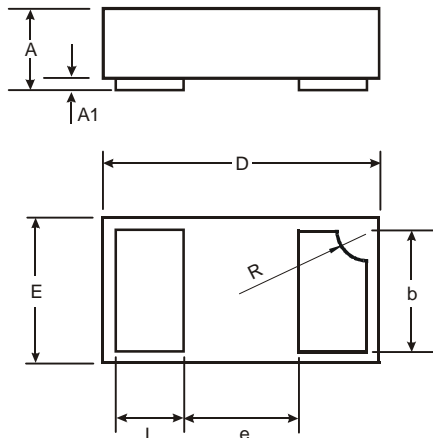


Fig. 6 Operating Temperature Derating

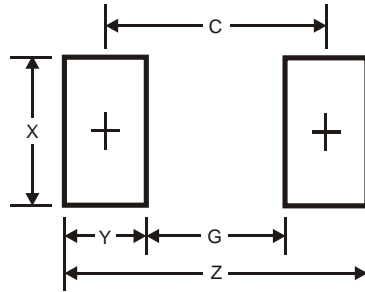
Package Outline Dimensions



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

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