

Features

- Ultra Low Forward Voltage Drop
- Excellent High Temperature Stability
- 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-Q 101 Standards for High Reliability**

Mechanical Data

- Case: SOD-523
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020D
- Terminal Connections: Cathode Band
- Terminals: Finish - Matte Tin annealed over Alloy 42 leadframe. Solderable per MIL-STD-202, Method 208
- Marking Information: See Page 3
- Ordering Information: See Page 3
- Weight: 0.002 grams (approximate)



Top 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 3) | 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 @T_A = 25°C unless otherwise specified

| Characteristic | Symbol | Value | Unit |
|---|-----------------------------------|-------------|------|
| Maximum Thermal Resistance Junction to Ambient (Note 2) | R _{θJA} | 378 | °C/W |
| 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 2) | V _{(BR)R} | 20 | - | - | V | I _R = 100μA |
| Forward Voltage Drop | V _F | - | 0.39 0.47 | 0.45 0.52 | V | I _F = 0.2A, T _J = 25°C I _F = 0.5A, T _J = 25°C |
| Leakage Current (Note 2) | I _R | - | 6 1.5 | 100 20 | μA mA | V _R = 20V, T _J = 25°C V _R = 20V, T _J = 150°C |

- Notes:
1. EU Directive 2002/95/EC (RoHS). All applicable RoHS exemptions applied, see *EU Directive 2002/95/EC Annex Notes*.
 2. Short duration pulse test used to minimize self-heating effect.
 3. Device mounted on Polyimide substrate, 1"*1", double-sided, PC boards, with 1*MRP pad layout

SBR is a registered trademark of Diodes Incorporated.

SBR05U20T5

Document number: DS31336 Rev. 3 - 2

1 of 3

www.diodes.com

August 2008

© Diodes Incorporated

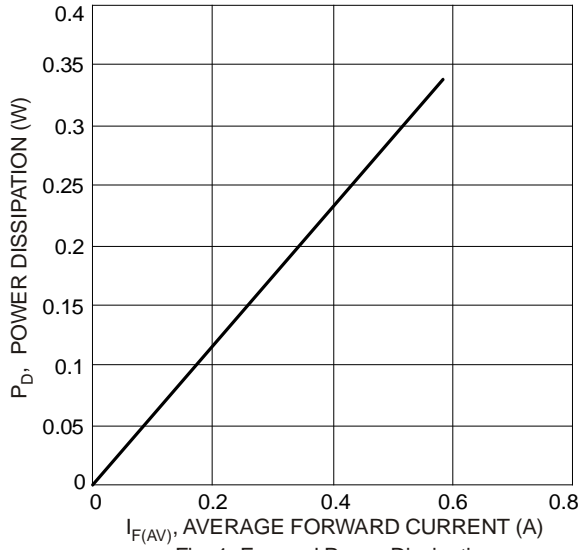


Fig. 1 Forward Power Dissipation

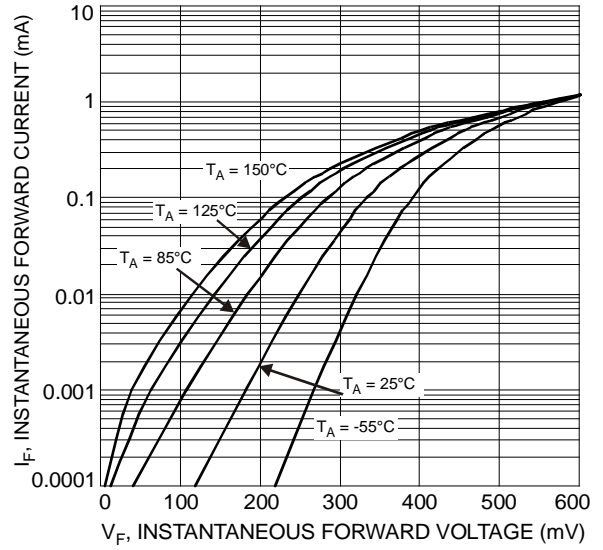


Fig. 2 Typical Forward Characteristics

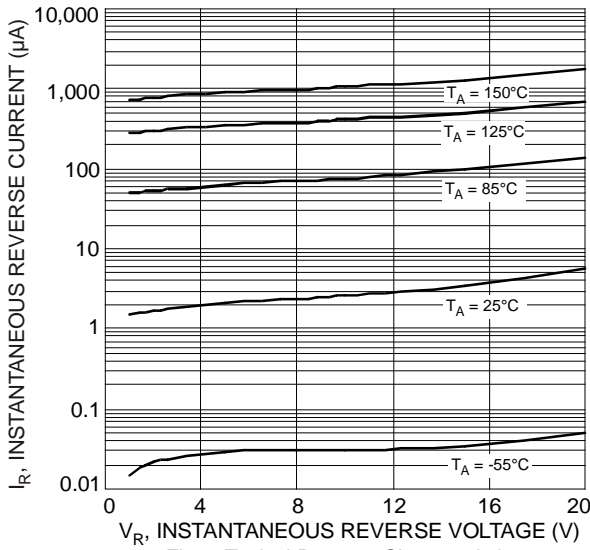


Fig. 3 Typical Reverse Characteristics

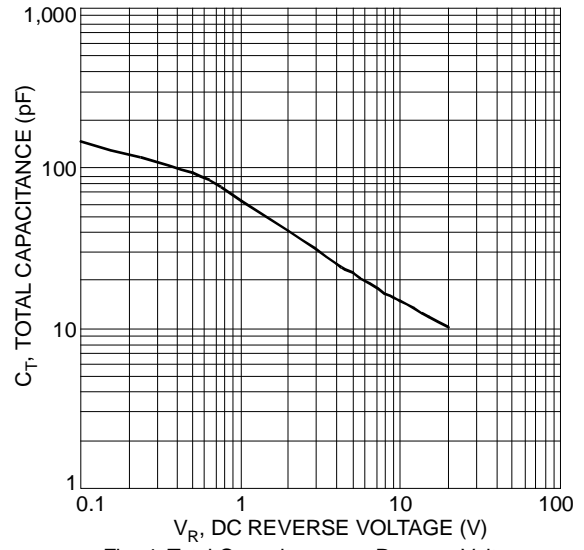


Fig. 4 Total Capacitance vs. Reverse Voltage

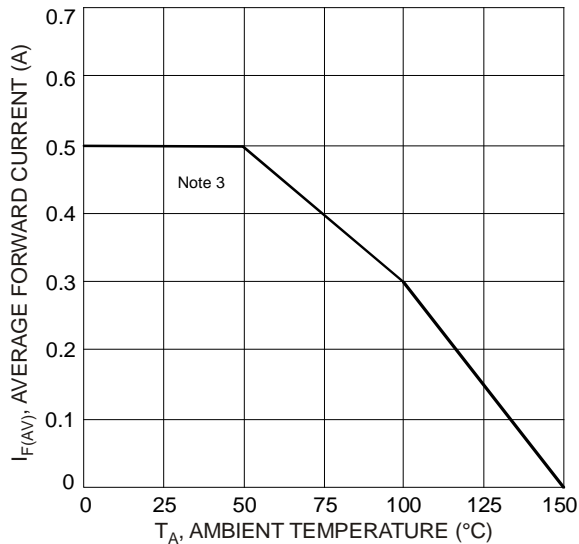


Fig. 5 Forward Current Derating Curve

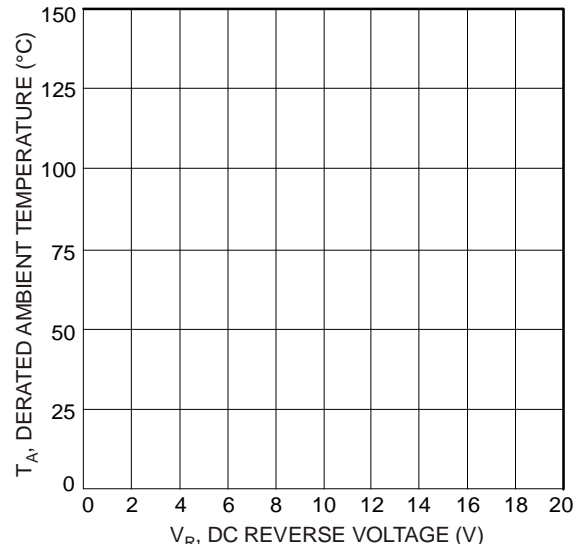


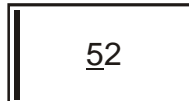
Fig. 6 Operating Temperature Derating

SBR is a registered trademark of Diodes Incorporated.

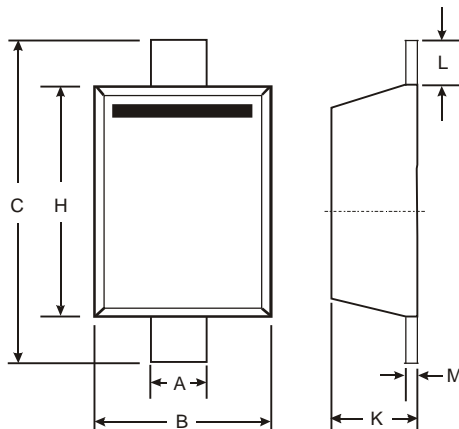
Ordering Information (Note 3)

| Part Number | Case | Packaging |
|--------------|---------|------------------|
| SBR05U20T5-7 | SOD-523 | 3000/Tape & Reel |

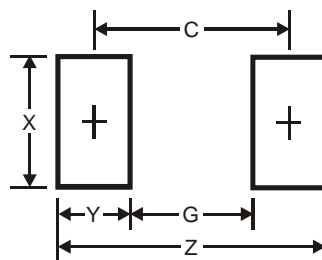
Notes: 3. For packaging details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

Marking Information


52 = Product Type Marking Code
Dot Denotes Cathode Side

Package Outline Dimensions


| SOD-523 | | |
|----------------------|------|------|
| Dim | Min | Max |
| A | 0.25 | 0.35 |
| B | 0.70 | 0.90 |
| C | 1.50 | 1.70 |
| H | 1.10 | 1.30 |
| K | 0.55 | 0.70 |
| L | 0.10 | 0.30 |
| M | 0.10 | 0.20 |
| All Dimensions in mm | | |

Suggested Pad Layout


| Dimensions | Value (in mm) |
|------------|---------------|
| Z | 2.3 |
| G | 1.1 |
| X | 0.8 |
| Y | 0.6 |
| C | 1.7 |

IMPORTANT NOTICE

Diodes Incorporated and its subsidiaries reserve the right to make modifications, enhancements, improvements, corrections or other changes without further notice to any product herein. Diodes Incorporated does not assume any liability arising out of the application or use of any product described herein; neither does it convey any license under its patent rights, nor the rights of others. The user of products in such applications shall assume all risks of such use and will agree to hold Diodes Incorporated and all the companies whose products are represented on our website, harmless against all damages.

LIFE SUPPORT

Diodes Incorporated products are not authorized for use as critical components in life support devices or systems without the expressed written approval of the President of Diodes Incorporated.

SBR is a registered trademark of Diodes Incorporated.