**SBR0230T5**

**0.2A SBR®**
**SUPER BARRIER RECTIFIER**

## Features

- Low Leakage Current
- Excellent High Temperature Stability
- Patented Super Barrier Rectifier Technology
- Soft, Fast Switching Capability
- 150ºC Operating Junction Temperature
- **Lead Free Finish, RoHS Compliant**
- **"Green" Molding Compound (No Br, Sb)**

## 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
- Polarity Indicator: Cathode Band
- Terminals: Finish – Matte Tin annealed over Alloy 42 leadframe. Solderable per MIL-STD-202, Method 208
- Marking Information: See Page 2
- Ordering Information: See Page 2
- 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<br>Working Peak Reverse Voltage<br>DC Blocking Voltage | $V_{RRM}$<br>$V_{RWM}$<br>$V_{RM}$ | 30 | V |
| RMS Reverse Voltage | $V_{R(RMS)}$ | 21 | V |
| Average Rectified Output Current (See Figure 1) | $I_O$ | 0.2 | A |
| Non-Repetitive Peak Forward Surge Current 8.3ms<br>Single Half Sine-Wave Superimposed on Rated Load | $I_{FSM}$ | 5 | A |

## Thermal Characteristics

| Characteristic | Symbol | Value | Unit |
|---|---|---|---|
| Maximum Thermal Resistance<br>Thermal Resistance Junction to Soldering (Note 1) | $R_{\theta JA}$ | 400 | ºC/W |
| 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 2) | $V_{(BR)R}$ | 30 | - | - | V | $I_R$ = 400µA |
| Forward Voltage Drop | $V_F$ | - | 0.50<br>0.46<br>0.57<br>0.55 | 0.54<br>0.49<br>0.61<br>0.58 | V | $I_F$ = 0.1A, $T_J$ = 25ºC<br>$I_F$ = 0.1A, $T_J$ = 85ºC<br>$I_F$ = 0.2A, $T_J$ = 25ºC<br>$I_F$ = 0.2A, $T_J$ = 85ºC |
| Leakage Current (Note 2) | $I_R$ | - | 0.2<br>- | 2<br>0.1 | µA<br>mA | $V_R$ = 30V, $T_J$ = 25ºC<br>$V_R$ = 30V, $T_J$ = 125ºC |
| Reverse Recovery Time | $t_{rr}$ | - | 5 | - | ns | $I_F$ = 10mA through $I_R$ = 10mA to $I_R$ = 1mA, $R_L$ = 100Ω |

Notes: 1. FR-4 PCB, 2 oz. Copper, minimum recommended pad layout per http://www.diodes.com/datasheets/ap02001.pdf.
2. Short duration pulse test used to minimize self-heating effect.

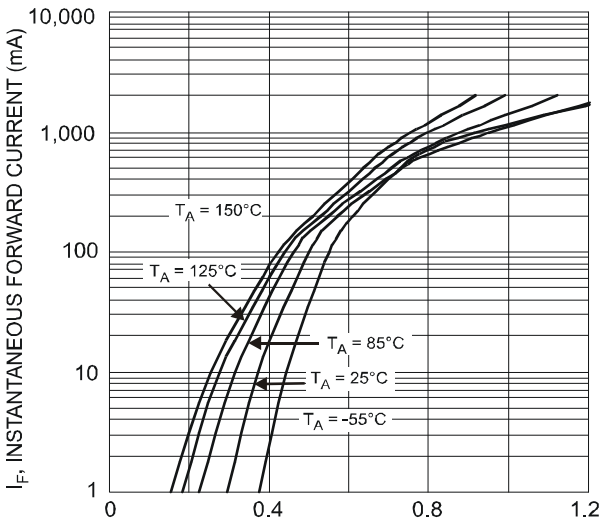



Fig.1 Typical Forward Characteristics

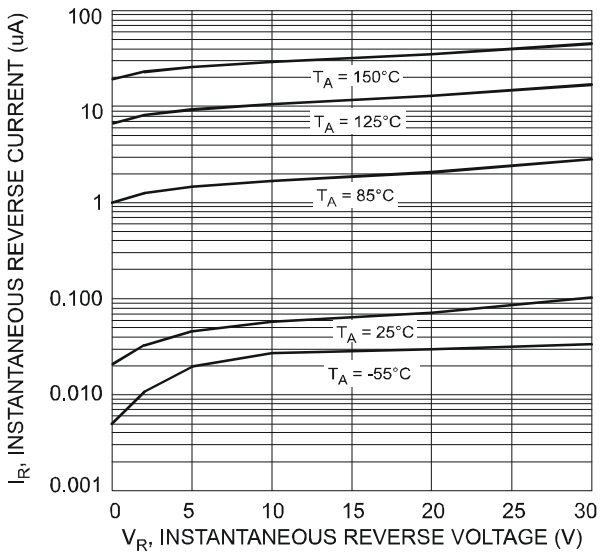



Fig. 2 Typical Reverse Characteristics

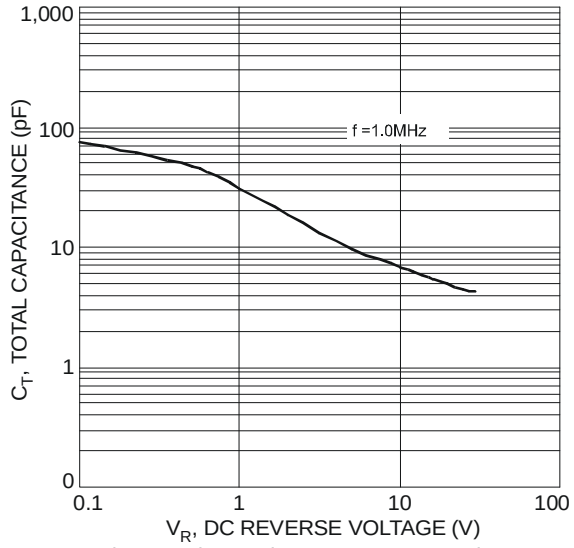



Fig. 3 Total Capacitance vs. Reverse Voltage

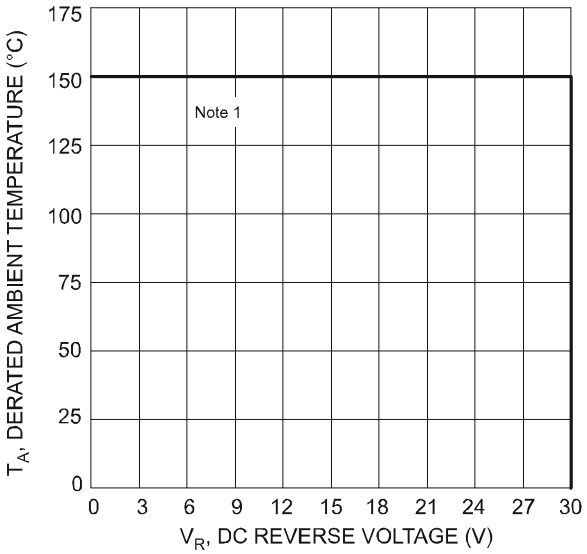



Fig. 4 Operating Temperature Derating

## Ordering Information (Note 3)

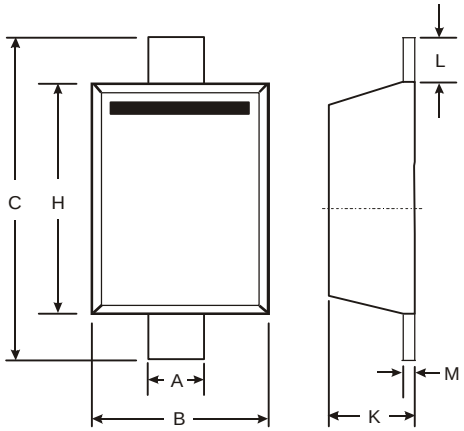
| Part Number | Case | Packaging |
|---|---|---|
| SBR0230T5-7 (Note 4) | SOD-523 | 3000/Tape & Reel |

Notes: 3. For packaging details, go to our website at http://www.diodes.com/datasheets/ap02007.pdf.
4. Dispensed in every other cavity of the tape.

## Marking Information

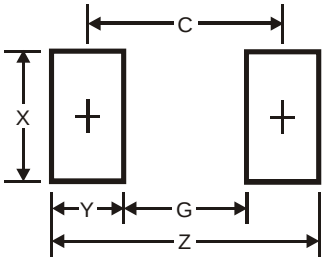

23 = Product Type Marking Code

## 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 |

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