NEW PRODUCT

**SBR130SV**

**1.0A 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 By Design/RoHS Compliant (Note 1)**
- **"Green" Device (Note 2)**

## Mechanical Data

- Case: SOT563
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Matte Tin Finish annealed over Alloy 42 leadframe. Solderable per MIL-STD-202, Method 208
- Terminal Connections: See Diagram
- Weight: 0.003 grams (approximate)

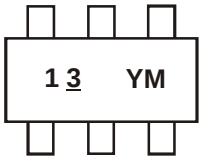
Top View Bottom View

## Ordering Information (Note 3)

| Part Number | Case | Packaging |
|---|---|---|
| SBR130SV-7 | SOT563 | 3000/Tape & Reel |

Notes:
1. No purposefully added lead.
2. Diodes Inc.'s "Green" policy can be found on our website at http://www.diodes.com.
3. For packaging details, go to our website at http://www.diodes.com.

## Marking Information




1 3 = Product Type Marking Code
YM = Date Code Marking
Y = Year (ex: X = 2010)
M = Month ex: 9 = September

Date Code Key

| Year | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
|---|---|---|---|---|---|---|---|
| Code | X | Y | Z | A | B | C | D |

| Month | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Code | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | O | N | D |

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## Maximum Ratings @$T_A$ = 25℃ 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 |
| Average Rectified Output Current (See Figure 1) | $I_O$ | 1.0 | A |
| Non-Repetitive Peak Forward Surge Current | $I_{FSM}$ | 2.5 | A |

## Thermal Characteristics

| Characteristic | Symbol | Value | Unit |
|---|---|---|---|
| Thermal Resistance Junction to Ambient (Note 4) | $R_{\theta JA}$ | 130 | ºC/W |
| Operating and Storage Temperature Range | $T_J$, $T_{STG}$ | -65 to +150 | ºC |

## Electrical Characteristics @$T_A$ = 25℃ unless otherwise specified

| Characteristic | Symbol | Min | Typ | Max | Unit | Test Condition |
|---|---|---|---|---|---|---|
| Forward Voltage Drop | $V_F$ | - | 0.39<br>-<br>0.40 | 0.46<br>0.56<br>0.45 | V | $I_F$ = 0.5A, $T_J$ = 25ºC<br>$I_F$ = 1.0A, $T_J$ = 25ºC<br>$I_F$ = 1.0A, $T_J$ = 125ºC |
| Leakage Current (Note 4) | $I_R$ | - | 8 | 100 | µA | $V_R$ = 30V, $T_J$ = 25ºC |
| | | - | 2.3 | - | mA | $V_R$ = 30V, $T_J$ = 125ºC |

Notes: 4. Device mounted on FR-4 substrate PC board, with minimum recommended pad layout
5. Short duration pulse test used to minimize self-heating effect.

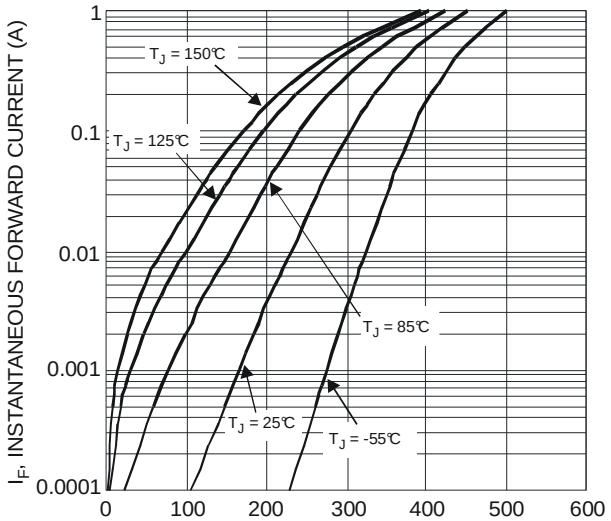


Fig. 1 Typical Forward Characteristics

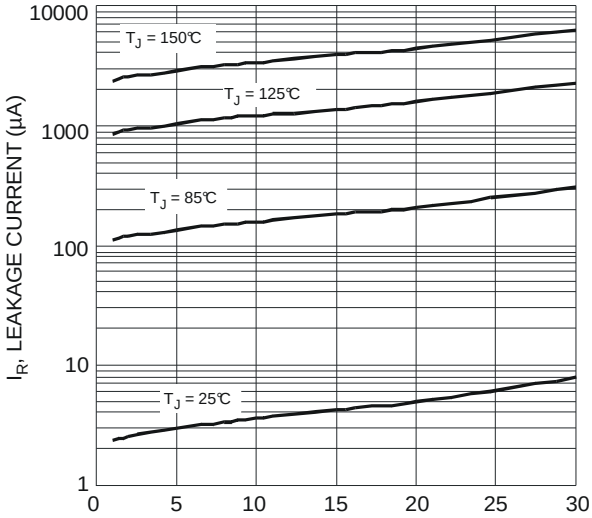


Fig. 2 Typical Reverse Characteristics

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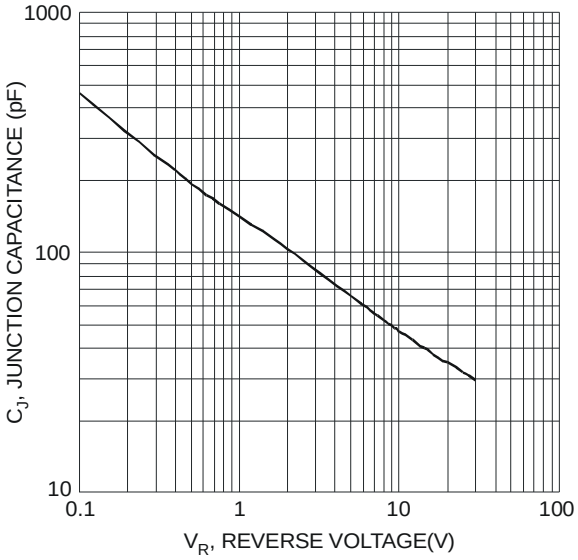



Fig. 3 Typical Junction Capacitance

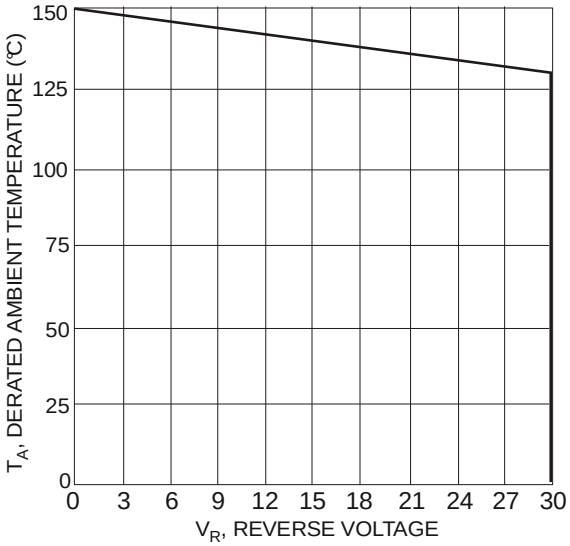
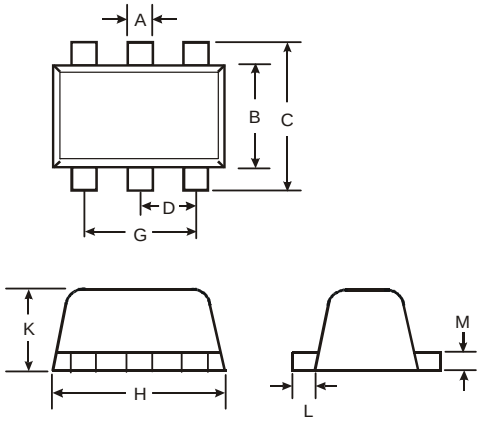


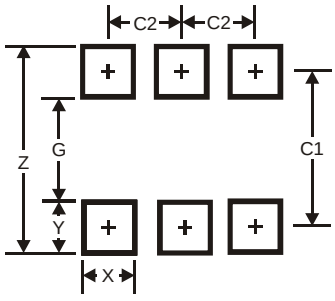

Fig. 4 Operating Temperature Derating

## Package Outline Dimensions




| SOT563 | | | |
|---|---|---|---|
| **Dim** | **Min** | **Max** | **Typ** |
| **A** | 0.15 | 0.30 | 0.20 |
| **B** | 1.10 | 1.25 | 1.20 |
| **C** | 1.55 | 1.70 | 1.60 |
| **D** | - | - | 0.50 |
| **G** | 0.90 | 1.10 | 1.00 |
| **H** | 1.50 | 1.70 | 1.60 |
| **K** | 0.55 | 0.60 | 0.60 |
| **L** | 0.10 | 0.30 | 0.20 |
| **M** | 0.10 | 0.18 | 0.11 |
| **All Dimensions in mm** | | | |

## Suggested Pad Layout




| Dimensions | Value (in mm) |
|---|---|
| **Z** | 2.2 |
| **G** | 1.2 |
| **X** | 0.375 |
| **Y** | 0.5 |
| **C1** | 1.7 |
| **C2** | 0.5 |

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