

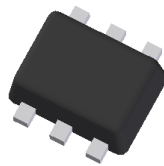
## Features

- Low Leakage Current
- Excellent High Temperature Stability
- Patented Super Barrier Rectifier Technology
- Soft, Fast Switching Capability
- +150 °C Operating Junction Temperature
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

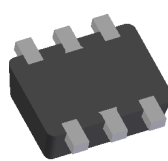
## Mechanical Data

- 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 Copper Leadframe.  
Solderable per MIL-STD-202, Method 208 ③
- Terminal Connections: See Diagram
- Weight: 0.003 grams (Approximate)

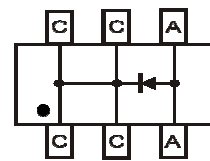
SOT563



Top View



Bottom View


 Top View Internal  
 Schematic  
 Dot denotes cathode pin 1

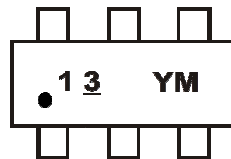
## Ordering Information (Note 4)

| Part Number | Case   | Packaging         |
|-------------|--------|-------------------|
| SBR130SV-7  | SOT563 | 3,000/Tape & Reel |

- Notes:
1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant.
  2. See [http://www.diodes.com/quality/lead\\_free.html](http://www.diodes.com/quality/lead_free.html) for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
  3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
  4. For packaging details, go to our website at <http://www.diodes.com/products/packages.html>.

## Marking Information

SOT563



1 3 = Product Type Marking Code  
 YM = Date Code Marking  
 Y = Year (ex: C = 2015)  
 M = Month ex: 9 = September  
 Dot denotes cathode pin 1

### Date Code Key

Date: 05/06/2019

| Year | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 |
|------|------|------|------|------|------|------|------|
| Code | A    | B    | C    | D    | E    | F    | G    |

| 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   |

**Maximum Ratings** (@T<sub>A</sub> = +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 <sub>RRM</sub><br>V <sub>RWM</sub><br>V <sub>RM</sub> | 30    | V    |
| Average Rectified Output Current                                                                    | I <sub>O</sub>                                          | 1.0   | A    |
| Non-Repetitive Peak Forward Surge Current<br>8.3ms Single Half Sine-Wave Superimposed on Rated Load | I <sub>FSM</sub>                                        | 2.5   | A    |

**Thermal Characteristics**

| Characteristic                                          | Symbol                            | Value       | Unit |
|---------------------------------------------------------|-----------------------------------|-------------|------|
| Typical Thermal Resistance Junction to Ambient (Note 5) | R <sub>θJA</sub>                  | 150         | °C/W |
| Operating and Storage Temperature Range                 | T <sub>J</sub> , T <sub>STG</sub> | -65 to +150 | °C   |

**Electrical Characteristics** (@T<sub>A</sub> = +25°C, unless otherwise specified.)

| Characteristic           | Symbol         | Min | Typ   | Max   | Unit | Test Condition                                 |
|--------------------------|----------------|-----|-------|-------|------|------------------------------------------------|
| Forward Voltage Drop     | V <sub>F</sub> | —   | 0.31  | 0.38  | V    | I <sub>F</sub> = 0.1A, T <sub>J</sub> = +25°C  |
|                          |                | —   | 0.39  | 0.46  |      | I <sub>F</sub> = 0.5A, T <sub>J</sub> = +25°C  |
|                          |                | —   | —     | 0.56  |      | I <sub>F</sub> = 1.0A, T <sub>J</sub> = +25°C  |
|                          |                | —   | 0.40  | 0.45  |      | I <sub>F</sub> = 1.0A, T <sub>J</sub> = +125°C |
| Leakage Current (Note 6) | I <sub>R</sub> | —   | 4     | 25    | μA   | V <sub>R</sub> = 5V, T <sub>J</sub> = +25°C    |
|                          |                | —   | 5     | 30    |      | V <sub>R</sub> = 12V, T <sub>J</sub> = +25°C   |
|                          |                | —   | 13    | 80    |      | V <sub>R</sub> = 30V, T <sub>J</sub> = +25°C   |
|                          |                | —   | 140   | 1,400 |      | V <sub>R</sub> = 5V, T <sub>J</sub> = +85°C    |
|                          |                | —   | 175   | 1,800 |      | V <sub>R</sub> = 12V, T <sub>J</sub> = +85°C   |
|                          |                | —   | 2,300 | —     |      | V <sub>R</sub> = 30V, T <sub>J</sub> = +125°C  |

Notes: 5. Part mounted on FR-4 PC board with recommended pad layout, which can be found on our website at <http://www.diodes.com>.  
 6. Short duration pulse test used to minimize self-heating effect.

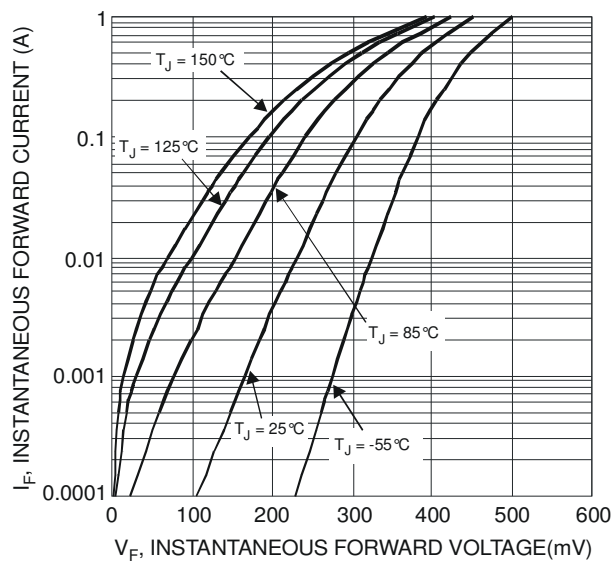


Figure 1 Typical Forward Characteristics

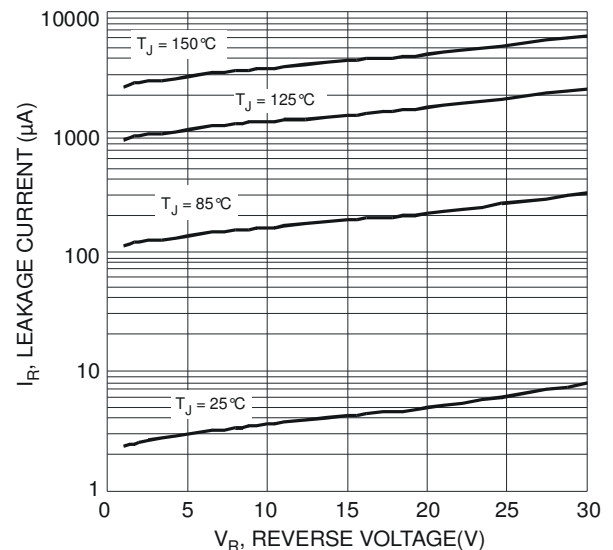


Figure 2 Typical Reverse Characteristics

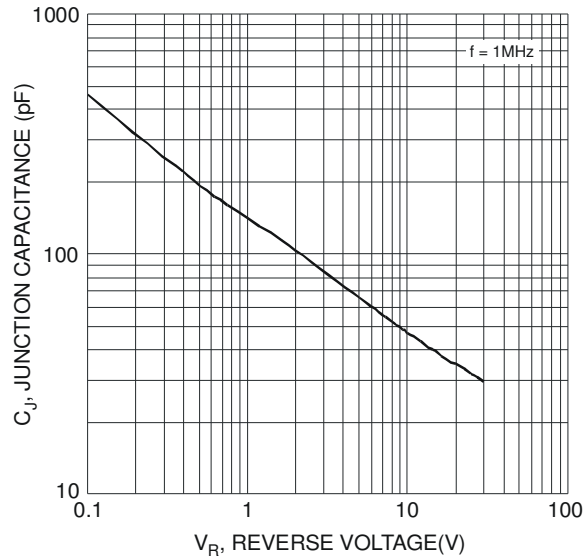


Figure 3 Typical Junction Capacitance

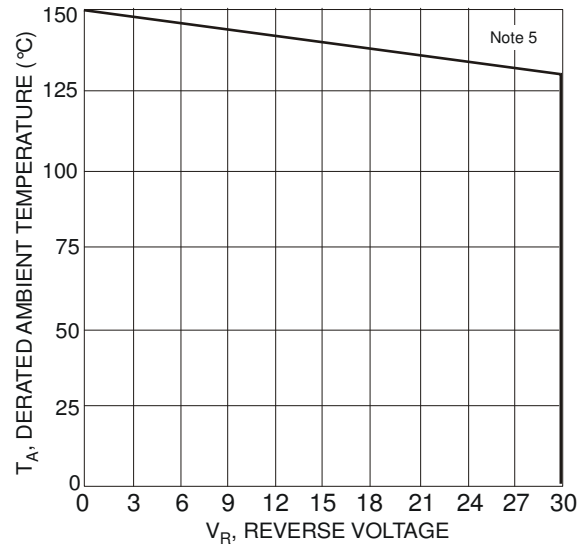
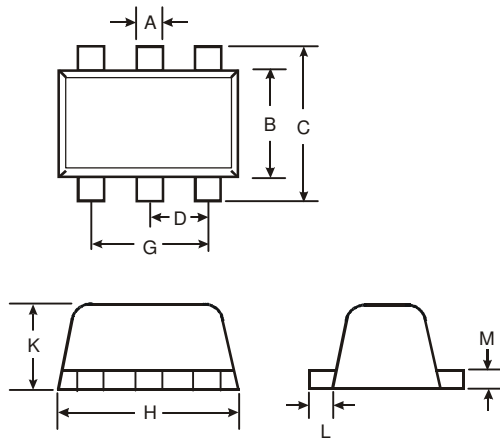


Figure 4 Operating Temperature Derating

## Package Outline Dimensions

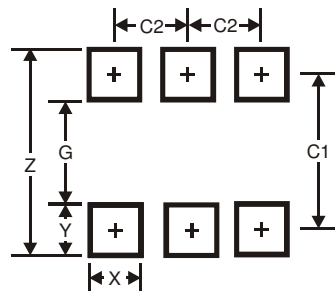
Please see AP02002 at <http://www.diodes.com/datasheets/ap02002.pdf> for the latest version.



| 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

Please see AP02001 at <http://www.diodes.com/datasheets/ap02001.pdf> for the latest version.



| 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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