
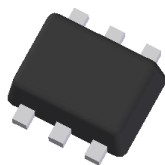


## Features

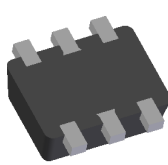
- Low Leakage Current
- Excellent High Temperature Stability
- Patented Super Barrier Rectifier Technology
- Soft, Fast Switching Capability
- 150°C Operating Junction Temperature
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

## Mechanical Data

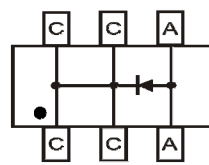
- Case: SOT563
- Case Material: Molded Plastic, "Green" Molding Compound.  
UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Matte Tin Finish annealed over Alloy 42 leadframe.  
Solderable per MIL-STD-202, Method 208 
- Terminal Connections: See Diagram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



Top View



Bottom View

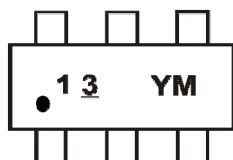

 Top View Internal  
Schematic  
Dot denotes cathode pin 1

## Ordering Information (Note 4)

Part Number	Case	Packaging
SBR130SV-7	SOT563	3000/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



1 3 = Product Type Marking Code  
 YM = Date Code Marking  
 Y = Year (ex: A = 2013)  
 M = Month ex: 9 = September  
 Dot denotes cathode pin 1

### Date Code Key

Date Code Key

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	V <sub>RRM</sub>	30	V
Working Peak Reverse Voltage	V <sub>RWM</sub>		
DC Blocking Voltage	V <sub>RM</sub>		
Average Rectified Output Current (See Figure 1)	I <sub>O</sub>	1.0	A
Non-Repetitive Peak Forward Surge Current	I <sub>FSM</sub>	2.5	A

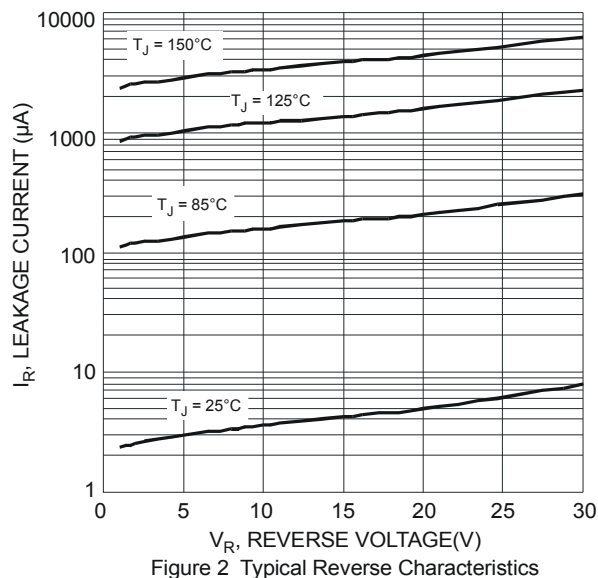
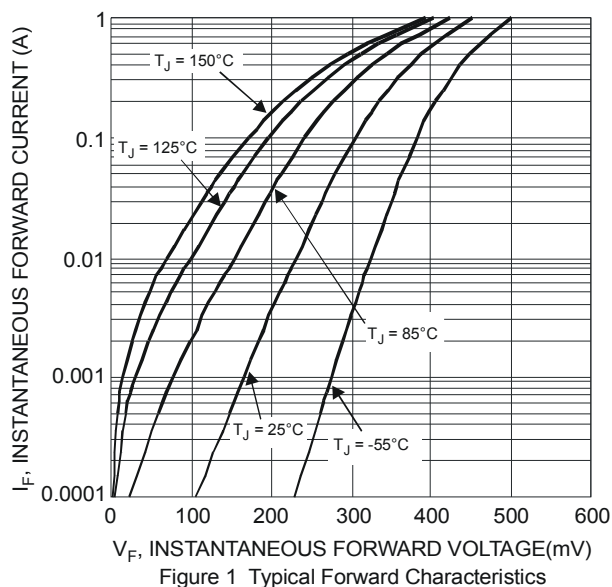
**Thermal Characteristics**

Characteristic	Symbol	Value	Unit
Thermal Resistance Junction to Ambient (Note 5)	R <sub>θJA</sub>	130	°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	1400		V <sub>R</sub> = 5V, T <sub>J</sub> = +85°C
		—	175	1800		V <sub>R</sub> = 12V, T <sub>J</sub> = +85°C
		—	2300	—		V <sub>R</sub> = 30V, T <sub>J</sub> = +125°C

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



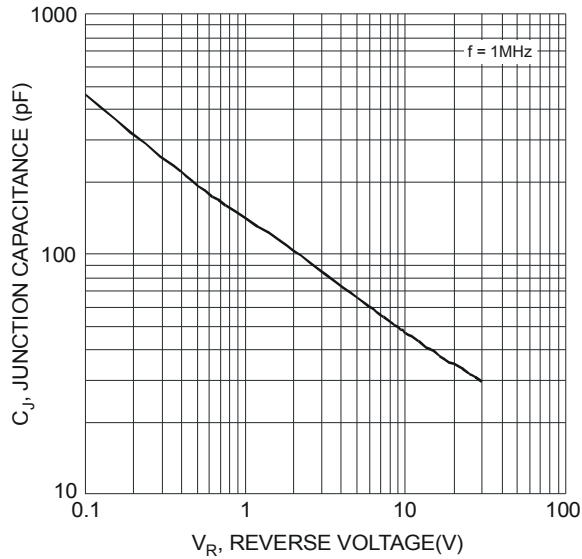


Figure 3 Typical Junction Capacitance

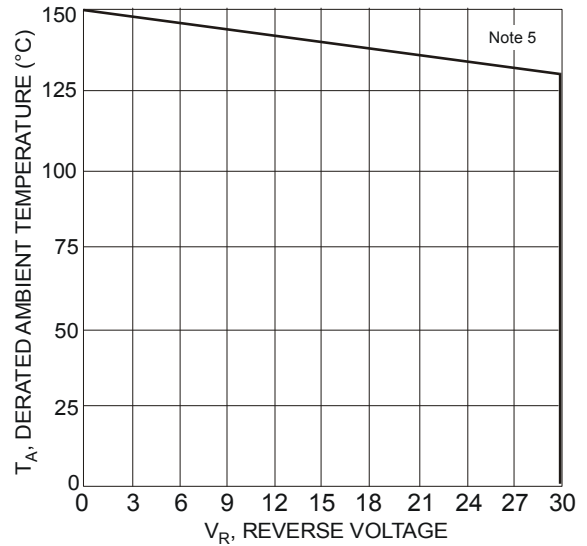
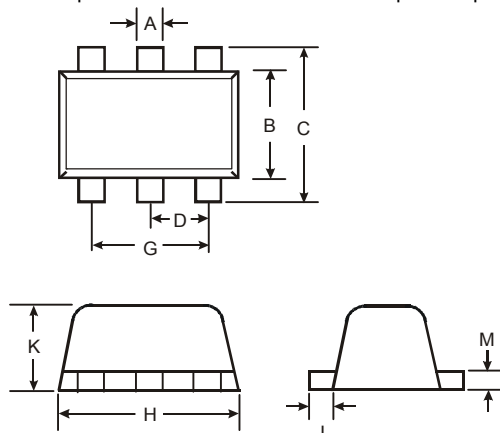


Figure 4 Operating Temperature Derating

## Package Outline Dimensions

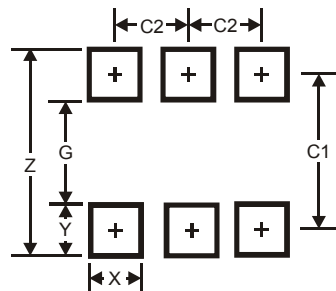
Please see AP02002 at <http://www.diodes.com/datasheets/ap02002.pdf> for latest version.



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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