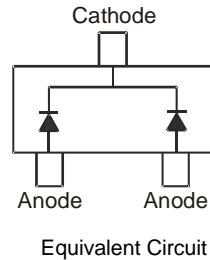


## Features

- Low Forward Voltage
- Ultra Low Reverse Leakage
- Excellent High Temperature Stability
- Patented Super Barrier Rectifier Technology
- Soft, Fast Switching Capability
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

## Mechanical Data

- Case: SOT323
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Patented Super Barrier Rectifier SBR<sup>®</sup> Technology
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish - Matte Tin Annealed over Alloy 42 Leadframe. Solderable per MIL-STD-202, Method 208
- Terminal Connections: See Diagram
- Weight: 0.008 grams (Approximate)

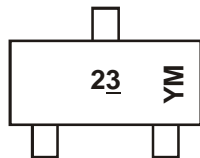


## Ordering Information (Note 4)

Part Number	Case	Packaging
SBR0330CW-7	SOT323	3,000/Tape & Reel

- Notes:
1. EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant. All applicable RoHS exemptions applied.
  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



23 = Product Type Marking Code  
 YM = Date Code Marking  
 Y = Year (ex: C = 2015)  
 M = Month (ex: 9 = September)

### Date Code Key

Year	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Code	C	D	E	F	G	H	I	J	K	L

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>		
DC Forward Current	I <sub>F</sub> (Per diode)	0.3	A
Average Rectified Output Current	I <sub>o</sub>		
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I <sub>FSM</sub>	1	A

**Thermal Characteristics**

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance	R <sub>θJA</sub>	261	°C/W
Thermal Resistance Junction to Ambient (Note 5)			
Typical Thermal Resistance	R <sub>θJA</sub>	445	°C/W
Thermal Resistance Junction to Ambient (Note 6)			
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>	—	—	240	mV	I <sub>F</sub> = 0.1mA, T <sub>J</sub> = +25°C
		—	—	300		I <sub>F</sub> = 1mA, T <sub>J</sub> = +25°C
		—	—	375		I <sub>F</sub> = 10mA, T <sub>J</sub> = +25°C
		—	—	430		I <sub>F</sub> = 30mA, T <sub>J</sub> = +25°C
		—	—	500		I <sub>F</sub> = 100mA, T <sub>J</sub> = +25°C
		—	—	580		I <sub>F</sub> = 200mA, T <sub>J</sub> = +25°C
		—	530	—		I <sub>F</sub> = 300mA, T <sub>J</sub> = +25°C
Leakage Current (Note 7)	I <sub>R</sub>	—	—	5	µA	V <sub>R</sub> = 30V, T <sub>J</sub> = +25°C
		—	0.63	3		V <sub>R</sub> = 25V, T <sub>J</sub> = +25°C
		—	—	1		V <sub>R</sub> = 10V, T <sub>J</sub> = +25°C
		—	0.35	0.8		V <sub>R</sub> = 5V, T <sub>J</sub> = +25°C
		—	7	20		V <sub>R</sub> = 10V, T <sub>J</sub> = +70°C
		—	18	50		V <sub>R</sub> = 10V, T <sub>J</sub> = +85°C
		—	—	—		V <sub>R</sub> = 10V, T <sub>J</sub> = +85°C

- Notes: 5. Device mounted on Polyimide substrate, 10cm x 10cm, 2oz, copper, PC boards.  
6. Device mounted on FR-4 PCB, 2oz. Copper, minimum recommended pad layout per <http://www.diodes.com/datasheets/ap02001.pdf>.  
7. Short duration pulse test used to minimize self-heating effect.

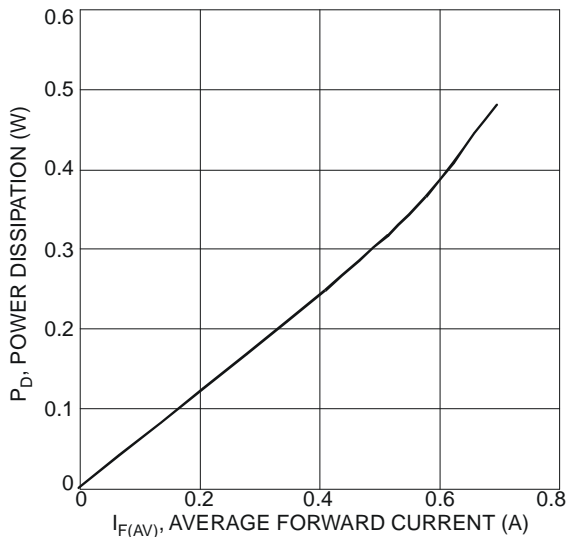


Figure 1. Forward Power Dissipation

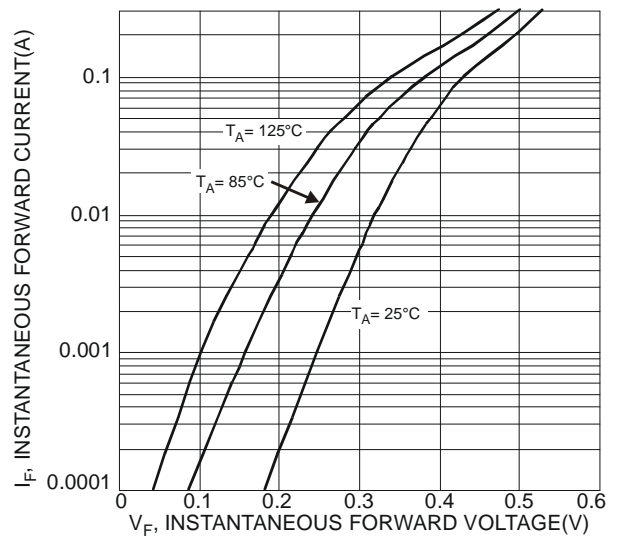


Figure 2. Typical Forward Characteristics

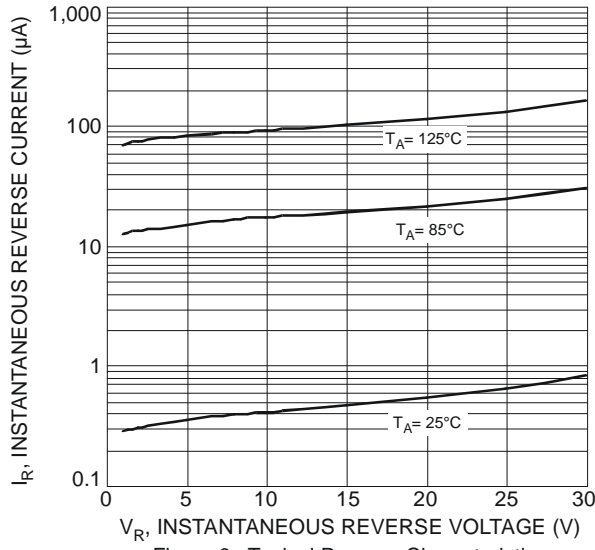


Figure 3. Typical Reverse Characteristics

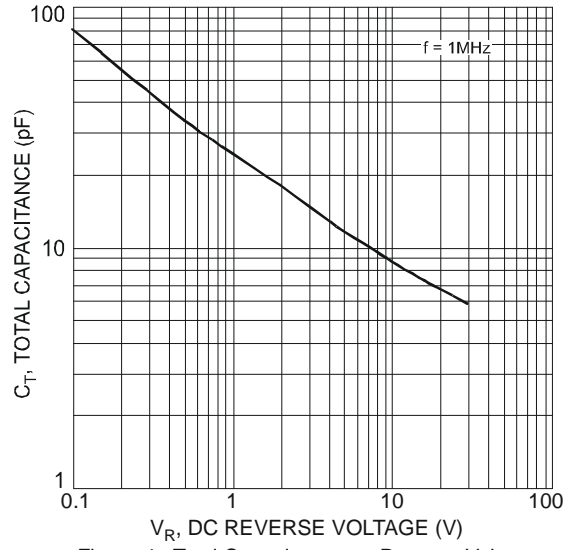


Figure 4. Total Capacitance vs. Reverse Voltage

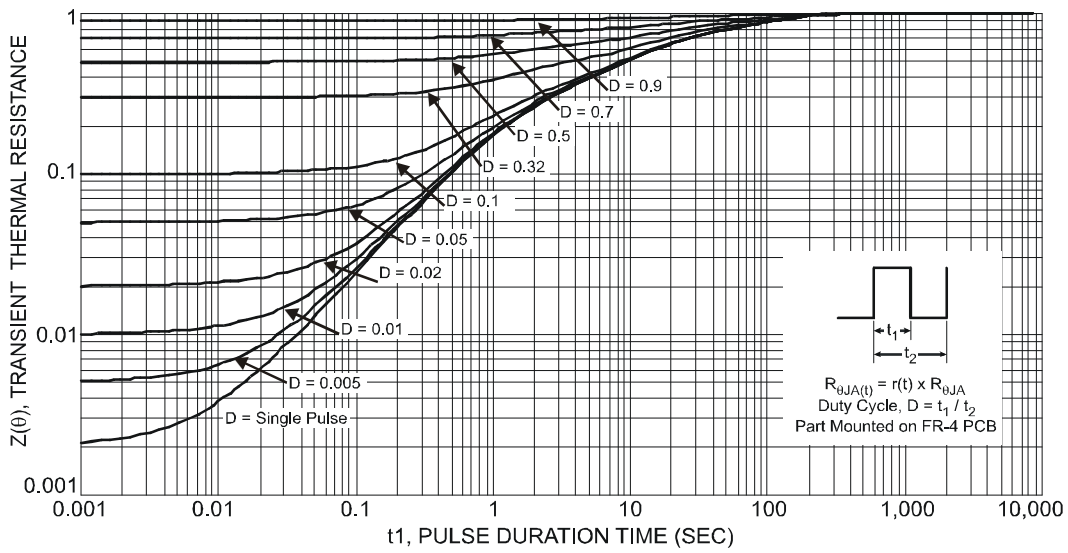
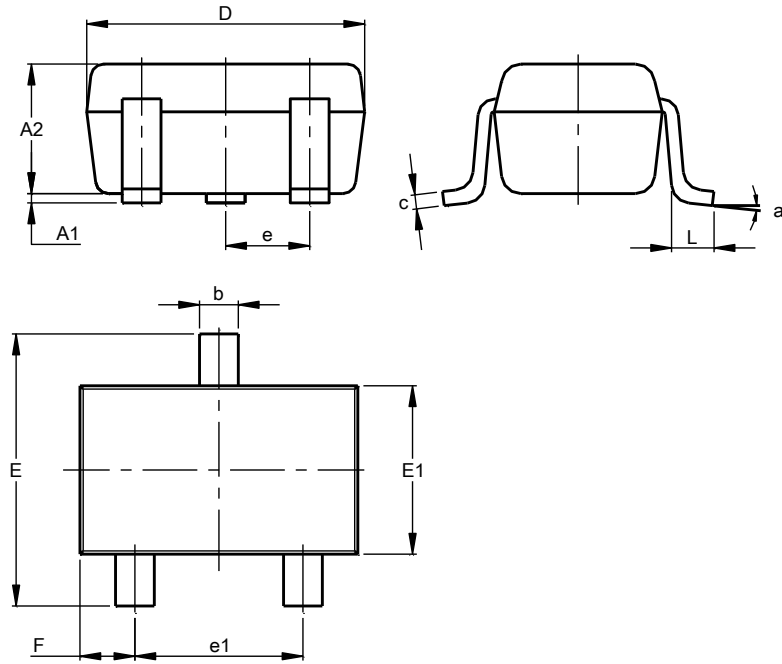


Figure 5. Transient Thermal Resistance

**Package Outline Dimensions**

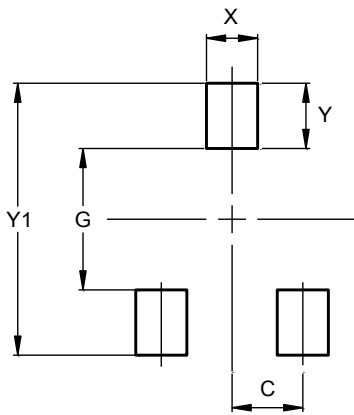
Please see AP02002 at <http://www.diodes.com/datasheets/ap02002.pdf> for the latest version.



SOT323			
Dim	Min	Max	Typ
A1	0.00	0.10	0.05
A2	0.90	1.00	0.95
b	0.25	0.40	0.30
c	0.10	0.18	0.11
D	1.80	2.20	2.15
E	2.00	2.20	2.10
E1	1.15	1.35	1.30
e	0.650 BSC		
e1	1.20	1.40	1.30
F	0.375	0.475	0.425
L	0.25	0.40	0.30
a	8°		
<b>All Dimensions in mm</b>			

**Suggested Pad Layout**

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



Dimensions	Value (in mm)
C	0.650
G	1.300
X	0.470
Y	0.600
Y1	2.500

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