SBR0330CW

0.3A SBR
SUPER BARRIER RECTIFIER

Features

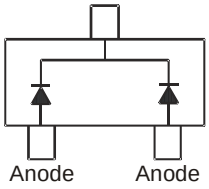
- Low Forward Voltage
- Ultra Low Reverse Leakage
- Excellent High Temperature Stability
- Patented Super Barrier Rectifier Technology
- Soft, Fast Switching Capability
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

Mechanical Data

- Case: SOT323
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Patented Super Barrier Rectifier SBR® 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 e3
- Terminal Connections: See Diagram
- Weight: 0.008 grams (Approximate)

SOT323

Top View



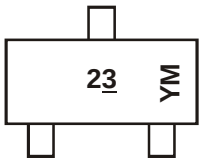
Equivalent Circuit

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 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_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 Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_{RM}	30	V
DC Forward Current	I_F (Per diode)	0.3	A
Average Rectified Output Current	Io		
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I_{FSM}	1	A

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance Thermal Resistance Junction to Ambient (Note 5)	$R_{\theta JA}$	261	°C/W
Typical Thermal Resistance Thermal Resistance Junction to Ambient (Note 6)	$R_{\theta JA}$	445	°C/W
Operating and Storage Temperature Range	T_J, T_{STG}	-65 to +150	°C

Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Forward Voltage Drop	V_F	—	—	240	mV	I_F = 0.1mA, T_J = +25°C
		—	—	300		I_F = 1mA, T_J = +25°C
		—	—	375		I_F = 10mA, T_J = +25°C
		—	—	430		I_F = 30mA, T_J = +25°C
		—	—	500		I_F = 100mA, T_J = +25°C
		—	—	580		I_F = 200mA, T_J = +25°C
		—	530	—		I_F = 300mA, T_J = +25°C
Leakage Current (Note 7)	I_R	—	—	5	µA	V_R = 30V, T_J = +25°C
		—	0.63	3		V_R = 25V, T_J = +25°C
		—	—	1		V_R = 10V, T_J = +25°C
		—	0.35	0.8		V_R = 5V, T_J = +25°C
		—	7	20		V_R = 10V, T_J = +70°C
		—	18	50		V_R = 10V, T_J = +85°C

Notes:
5. Device mounted on Polymide 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.

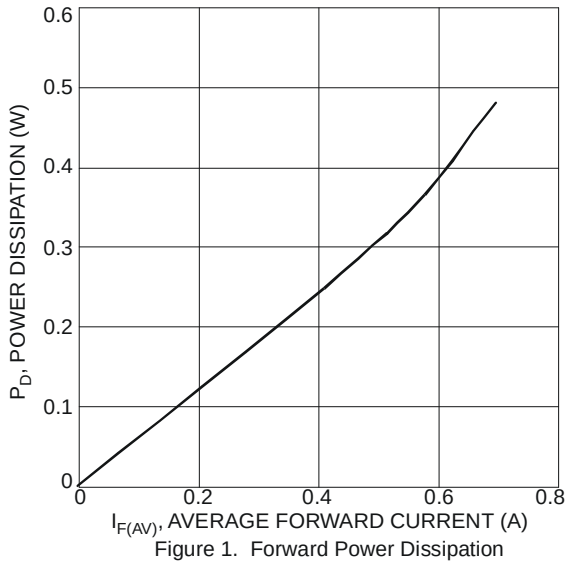


Figure 1. Forward Power Dissipation

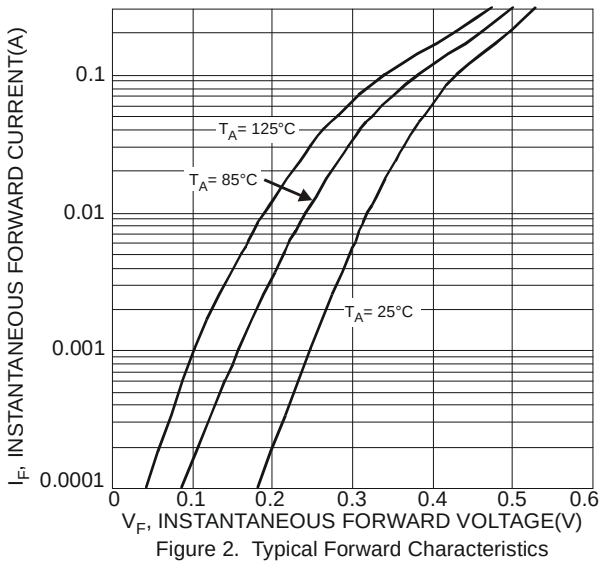


Figure 2. Typical Forward Characteristics

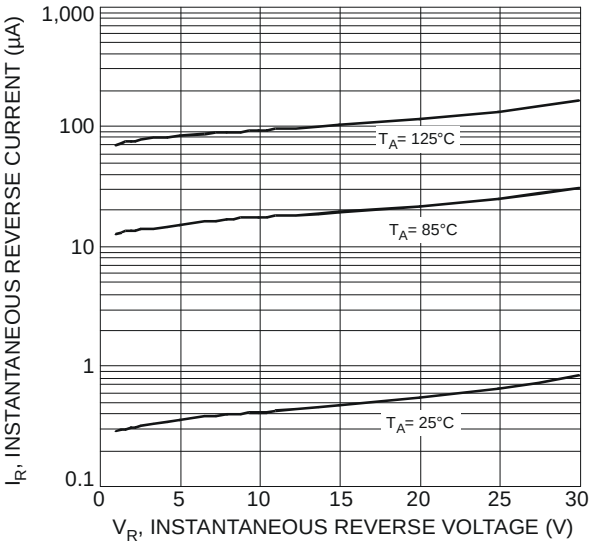


Figure 3. Typical Reverse Characteristics

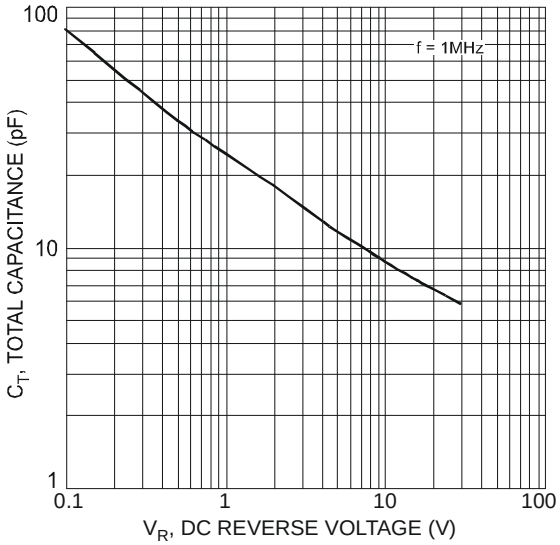


Figure 4. Total Capacitance vs. Reverse Voltage

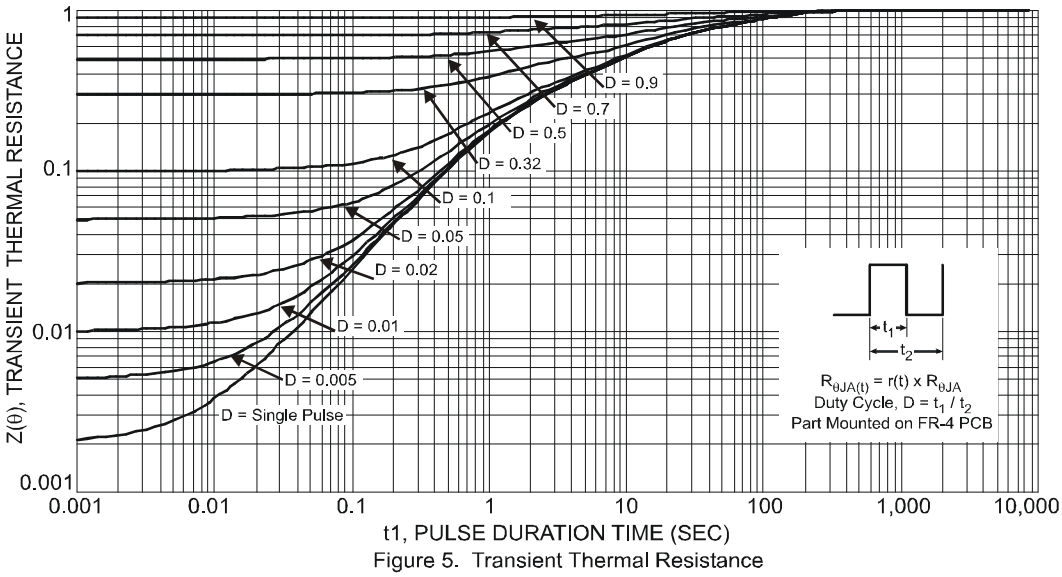
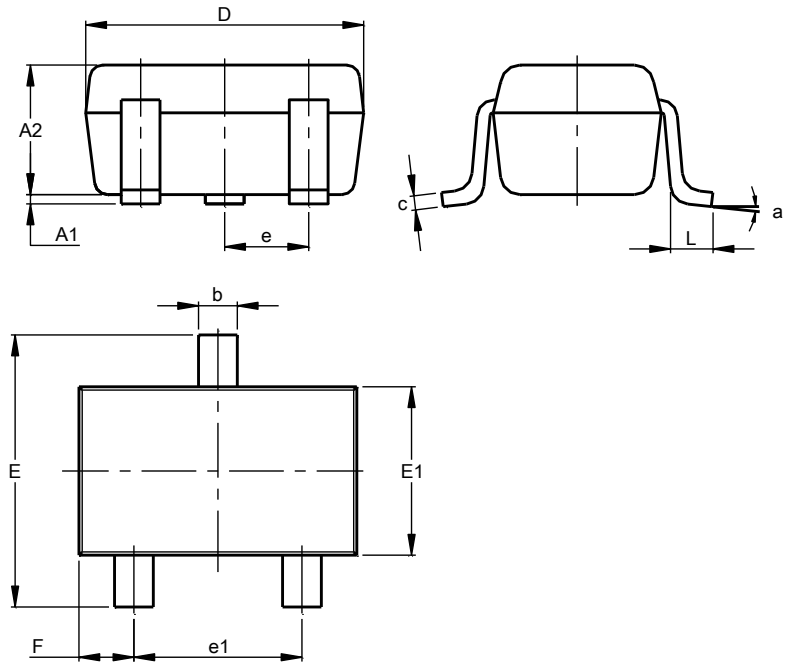


Figure 5. Transient Thermal Resistance

Package Outline Dimensions

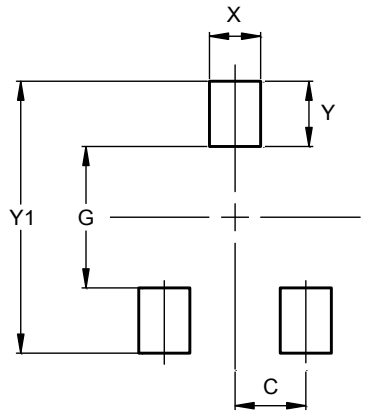
Please see AP02002 at http://www.diodes.com/datasheets/ap02002.pdf for the latest version.



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°		
All Dimensions in mm			

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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