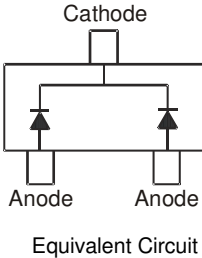


Features

- 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[Ⓔ]
- Terminal Connections: See Diagram
- Weight: 0.008 grams (Approximate)

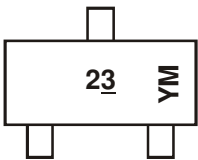


Ordering Information (Note 4)

| 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 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 | V _{RRM} | 30 | V |
| Working Peak Reverse Voltage | V _{RWM} | | |
| DC Blocking Voltage | V _{RM} | | |
| DC Forward Current | I _F (Per diode) | 0.3 | A |
| Average Rectified Output Current | I _o | | |
| 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 | R _{θJA} | 261 | °C/W |
| Thermal Resistance Junction to Ambient (Note 5) | | | |
| Typical Thermal Resistance | R _{θJA} | 445 | °C/W |
| Thermal Resistance Junction to Ambient (Note 6) | | | |
| 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 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.

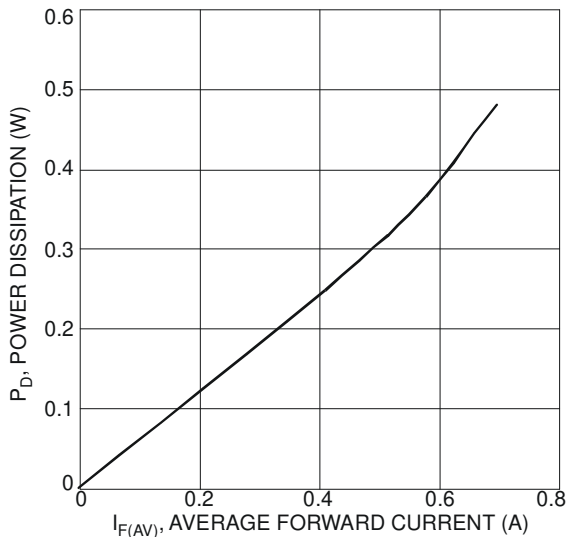


Figure 1. Forward Power Dissipation

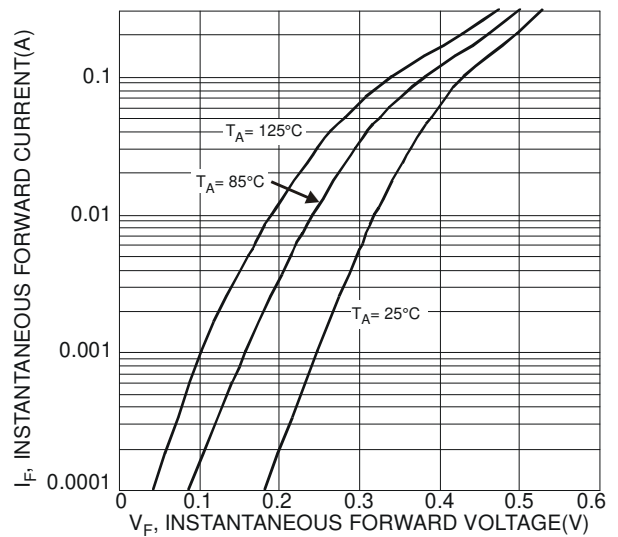


Figure 2. Typical Forward Characteristics

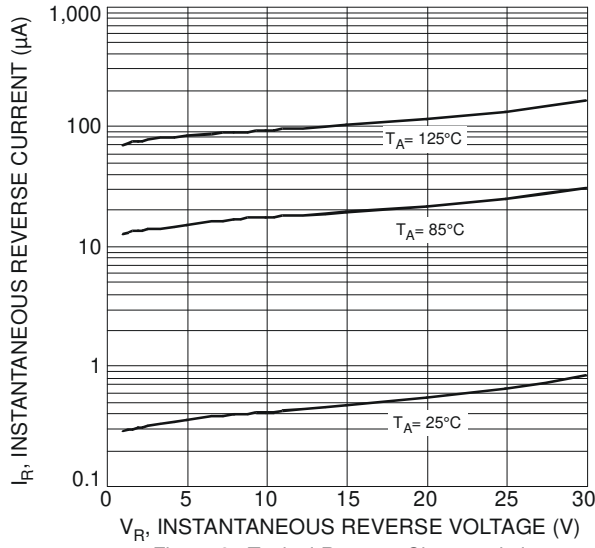


Figure 3. Typical Reverse Characteristics

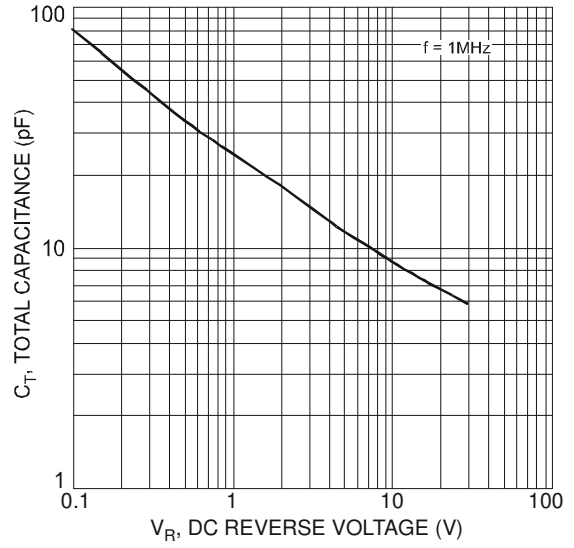


Figure 4. Total Capacitance vs. Reverse Voltage

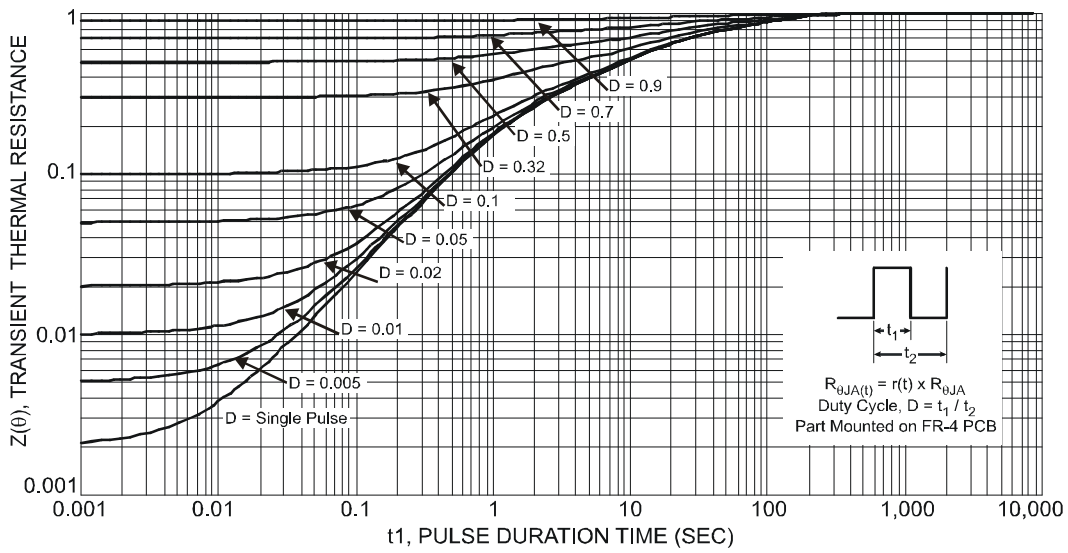
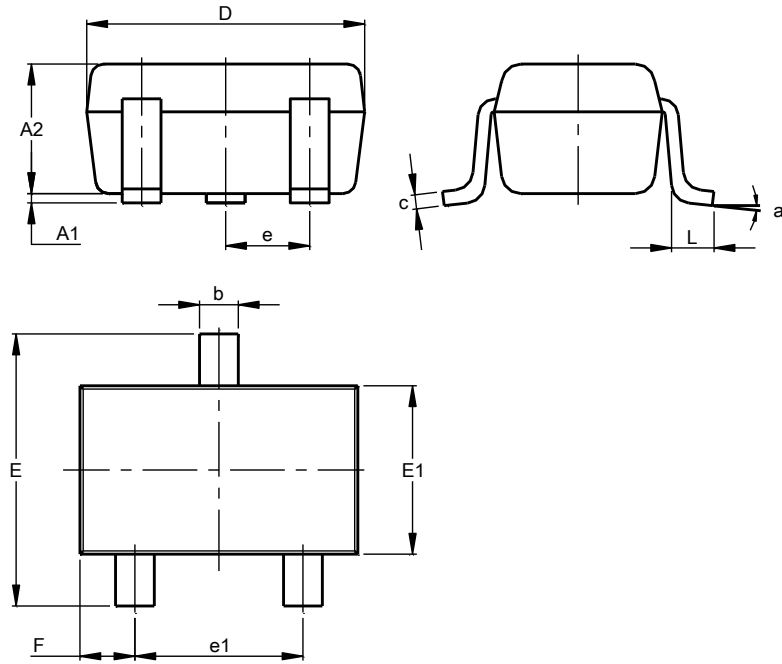


Figure 5. Transient Thermal Resistance

Package Outline Dimensions

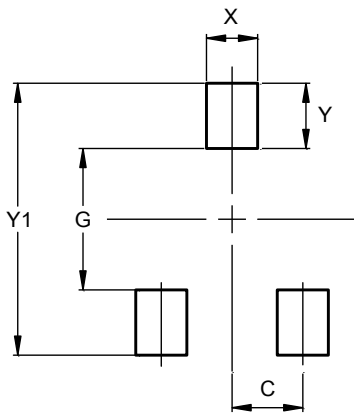
Please see AP02002 at <http://www.diodes.com/datasheets/ap02002.pdf> for the latest version.



| 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° | | |
| 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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