

Features

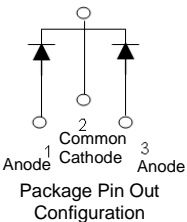
- Low Forward Voltage Drop
- Low Leakage Current
- Excellent High Temperature Stability
- Patented Super Barrier Rectifier Technology
- Soft, Fast Switching Capability
- 175°C Operating Junction Temperature
- **Lead Free Finish, RoHS Compliant (Note 1)**
- **Also Available in Green Molding Compound (Note 2)**

Mechanical Data

- Case: D²Pak
- Case Material: Molded Plastic, 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**
- Weight: 1.6 grams (approximate)



Top View

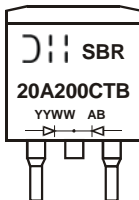


Ordering Information (Notes 2 & 3)

| Part Number | Case | Packaging |
|-------------------|--------------------|-----------------|
| SBR20A200CTB | D ² Pak | 50 pieces/tube |
| SBR20A200CTB-G | D ² Pak | 50 pieces/tube |
| SBR20A200CTB-13 | D ² Pak | 800/Tape & Reel |
| SBR20A200CTB-13-G | D ² Pak | 800/Tape & Reel |

Notes: 1. EU Directive 2002/95/EC (RoHS). All applicable RoHS exemptions applied, see EU Directive 2002/95/EC Annex Notes
 2. For Green Molding Compound version part numbers, add "-G" suffix to part number above. Examples: SBR20A200CTB-G.
 3. For packaging details, go to our website at <http://www.diodes.com>.

Marking Information



SBR20A200CTB = Product Type Marking Code
 AB = Foundry and Assembly Code
 YYWW = Date Code Marking
 YY = Last two digits of year (ex: 07 = 2007)
 WW = Week (01 - 53)

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} | 200 | V |
| Working Peak Reverse Voltage | V _{RWM} | | |
| DC Blocking Voltage | V _{RM} | | |
| Average Rectified Output Current @ T _C = 150°C | I _O | 20 | A |
| Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load | I _{FSM} | 180 | A |

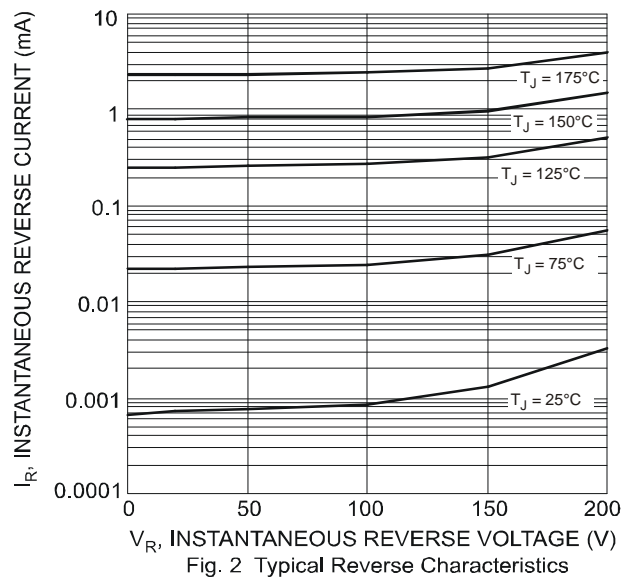
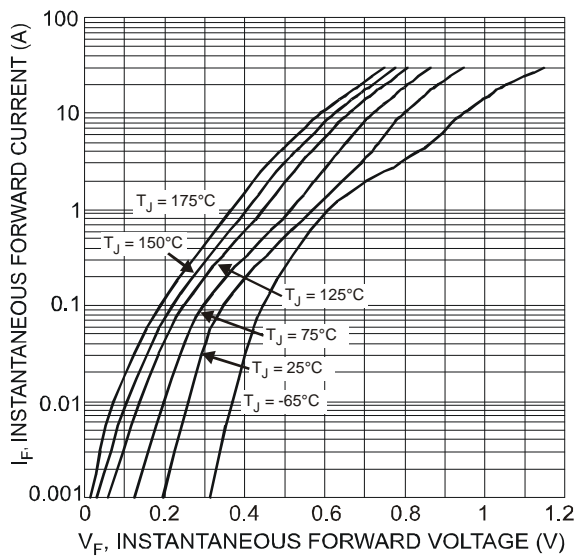
Thermal Characteristics

| Characteristic | Symbol | Value | Unit |
|--|-----------------------------------|-------------|------|
| Maximum Thermal Resistance (per leg) | | | |
| Thermal Resistance Junction to Case (Note 4) | R _{θJC} | 4 | °C/W |
| Thermal Resistance, Junction to Ambient (Note 4) | R _{θJA} | 43 | |
| Operating and Storage Temperature Range | T _J , T _{STG} | -65 to +175 | °C |

Electrical Characteristics @T_A = 25°C unless otherwise specified

| Characteristic | Symbol | Min | Typ | Max | Unit | Test Condition |
|--------------------------|-----------------|-----|-------|------|------|--|
| Forward Voltage Drop | V _F | - | - | 0.86 | V | I _F = 10A, T _J = 25°C |
| | | | - | 0.96 | | I _F = 20A, T _J = 25°C |
| | | | 0.66 | 0.72 | | I _F = 10A, T _J = 125°C |
| Leakage Current (Note 5) | I _R | - | 0.003 | 0.1 | mA | V _R = 200V, T _J = 25°C |
| | | | 0.51 | 10 | | V _R = 200V, T _J = 125°C |
| Reverse Recovery Time | t _{rr} | - | 24 | 30 | ns | I _F = 0.5A, I _R = 1A, I _{RR} = 0.25A |
| | | - | 20 | 25 | | I _F = 1A, V _R = 30V, di/dt = 100A/μs, T _J = 25°C |

Notes: 4. FR-4 PCB, 2 oz. Copper, minimum recommended pad layout per <http://www.diodes.com/datasheets/ap02001.pdf>
5. Short duration pulse test used to minimize self-heating effect.



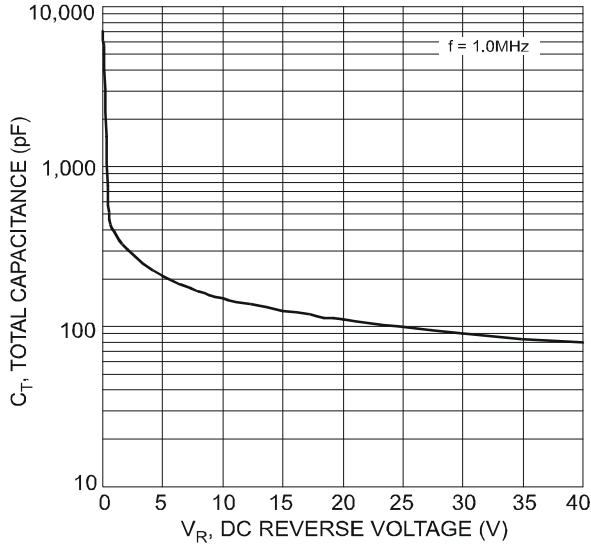


Fig. 3 Total Capacitance vs. Reverse Voltage

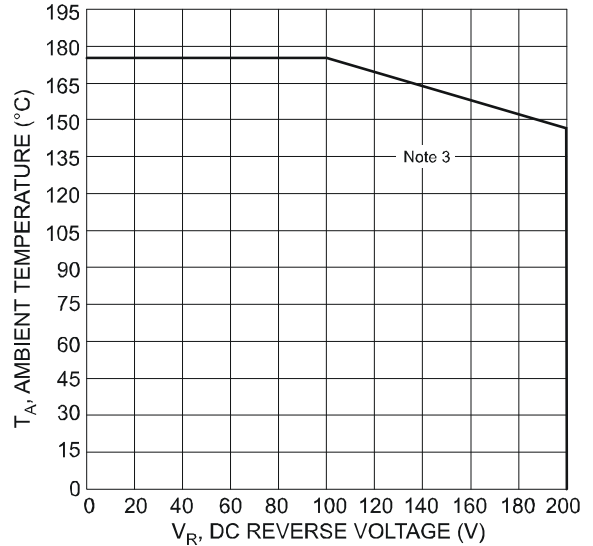
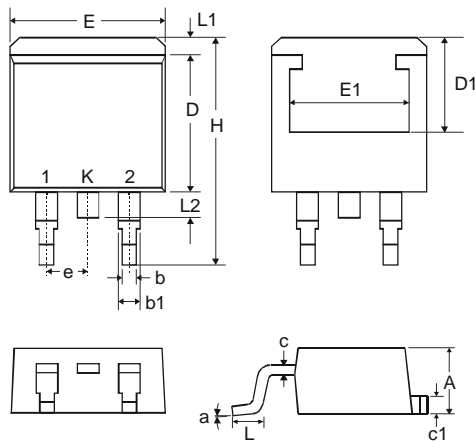


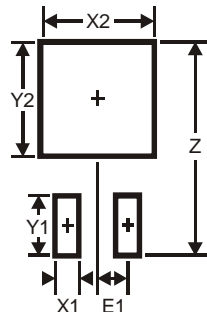
Fig. 4 Operating Temperature Derating

Package Outline Dimensions



| D ² PAK | | |
|----------------------|----------|-------|
| Dim | Min | Max |
| A | 4.07 | 4.82 |
| b | 0.51 | 0.99 |
| b1 | 1.15 | 1.77 |
| c | 0.356 | 0.58 |
| c1 | 1.143 | 1.65 |
| D | 8.39 | 9.65 |
| D1 | 6.55 | — |
| E | 9.66 | 10.66 |
| E1 | 6.23 | — |
| e | 2.54 Typ | |
| H | 14.61 | 15.87 |
| L | 1.78 | 2.79 |
| L1 | — | 1.67 |
| L2 | — | 1.77 |
| a | 0° | 8° |
| All Dimensions in mm | | |

Suggested Pad Layout



| Dimensions | Value (in mm) |
|------------|---------------|
| Z | 16.9 |
| X1 | 1.1 |
| X2 | 10.8 |
| Y1 | 3.5 |
| Y2 | 7.01 |
| E1 | 2.5 |

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