

60A SBR® **SUPER BARRIER RECTIFIER**

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 2)
- Also Available in Green Molding Compound (Note 5)

Mechanical Data

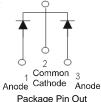
- Case: TO-220AB
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Terminals: Matte Tin Finish annealed over Copper Lead Frame. Solderable per MIL-STD-202, Method 208 @3
- Polarity: As Marked on Body
- Ordering Information: See Page 2
- Marking Information: See Page 2
- Weight: 1.85 grams (approximate)



TO-220AB Top View



TO-220AB **Bottom View**



Package Pin Out Configuration

Maximum Ratings (Per Leg) @TA = 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 _{RWM} V _{RM} | 200 | ٧ |
| , | Per Leg) Total) | lo | 30 60 | А |
| Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load | | I _{FSM} | 250 | A |

Thermal Characteristics (Per Leg)

| Characteristic | Symbol | Value | Unit |
|---|--------------------------------------|-------------|------|
| Typical Thermal Resistance Thermal Resistance, Junction to Case (Note 3) Thermal Resistance, Junction to Ambient (Note 3) | R _{θJC} R _{θJA} | 1.2 8.4 | °C/W |
| Operating and Storage Temperature Range | T _J , T _{STG} | -65 to +175 | °C |

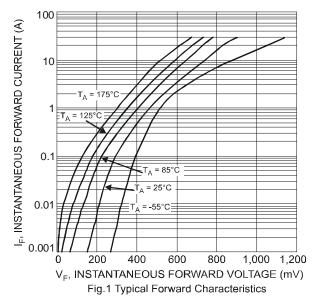
Electrical Characteristics (Per Leg) @TA = 25°C unless otherwise specified

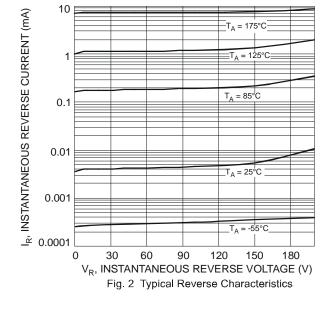
| Characteristic | Symbol | Min | Тур | Max | Unit | Test Condition |
|--------------------------|-----------------|-----|--------------|--------------|----------|---|
| Forward Voltage Drop | V _F | - | 0.91 0.74 | 0.96 0.77 | V | I _F = 30A, T _J = 25°C I _F = 30A, T _J = 125°C |
| Leakage Current (Note 1) | I _R | - | 10 2 | 100 20 | μA mA | V _R = 200V, T _J = 25°C V _R = 200V, T _J = 125°C |
| Reverse Recovery Time | t _{rr} | = | 38 | 50 | ns | I _F = 0.5A, I _R = 1A, I _{RR} = 0.25A |
| | | - | 25 | 35 | | $I_F = 1A$, $V_R = 30V$ di/dt = 100A/ μ s, $T_J = 25^{\circ}C$ |

Notes:

- 1. Short duration pulse test used to minimize self-heating effect.
- 2. EU Directive 2002/95/EC (RoHS). All applicable RoHS exemptions applied. Please visit our website at http://www.diodes.com/products/lead_free.html.
- 3. Device mounted on heatsink (Black Aluminum, 50mm x 37mm x 15mm)







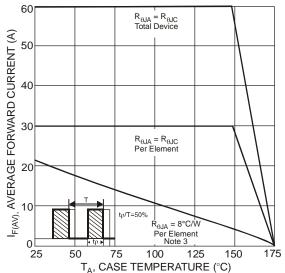


Fig. 3 Forward Current Derating Curve

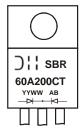
Ordering Information (Notes 4 & 5)

| Part Number | Case | Packaging |
|---------------|----------|----------------|
| SBR60A200CT | TO-220AB | 50 pieces/tube |
| SBR60A200CT-G | TO-220AB | 50 pieces/tube |

Notes: 4. For packaging details, go to our website at http://www.diodes.com/datasheets/ap02007.pdf.

5. For Green Molding Compound version part numbers, add "-G" suffix to part number above. Examples: SBR60A200CT-G.

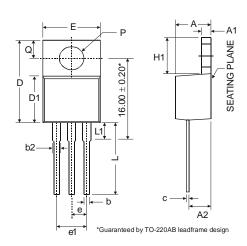
Marking Information



SBR60A200CT = Product Type Marking Code AB = Foundry and Assembly Code YYWW = Date Code Marking YY = Last two digits of year (ex: 07 = 2007) WW = Week (01-52)



Package Outline Dimensions



| TO-220AB | | | | | |
|----------------------|-------|------|-------|--|--|
| Dim | Min | Тур | Max | | |
| Α | 3.56 | 1 | 4.82 | | |
| A 1 | 0.51 | 1 | 1.39 | | |
| A2 | 2.04 | 1 | 2.92 | | |
| b | 0.39 | 0.81 | 1.01 | | |
| b2 | 1.15 | 1.24 | 1.77 | | |
| C | 0.356 | 1 | 0.61 | | |
| D | 14.22 | 1 | 16.51 | | |
| D1 | 8.39 | - | 9.01 | | |
| е | 2.54 | | | | |
| e1 | | 5.08 | | | |
| Е | 9.66 | 1 | 10.66 | | |
| H1 | 5.85 | - | 6.85 | | |
| L | 12.70 | 1 | 14.73 | | |
| L1 | - | | 6.35 | | |
| Р | 3.54 | - | 4.08 | | |
| ø | 2.54 | - | 3.42 | | |
| All Dimensions in mm | | | | | |

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