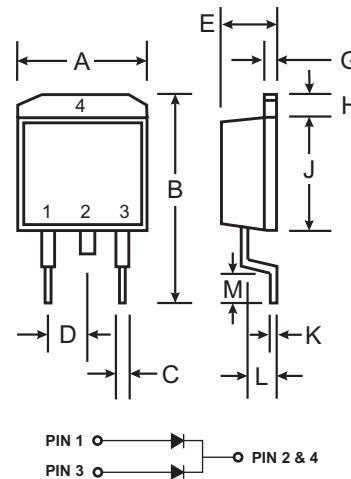


Features

- Schottky Barrier Chip
- Guard Ring Die Construction for Transient Protection
- Low Power Loss, High Efficiency
- High Surge Capability
- High Current Capability and Low Forward Voltage Drop
- Surge Overload Rating to 225A Peak
- For Use in Low Voltage, High Frequency Inverters, Free Wheeling, and Polarity Protection Applications
- **Lead Free Finish/RoHS Compliant (Note 3)**

Mechanical Data

- Case: D²PAK
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020C
- Terminals: Finish - Bright Tin. Solderable per MIL-STD-202, Method 208
- Ordering Information, Page 2
- Polarity: See Diagram
- Marking: Type Number
- Mounting Position: Any
- Weight: 1.7 grams (approximate)



| D ² PAK | | |
|----------------------|-------|-------|
| Dim | Min | Max |
| A | 9.65 | 10.69 |
| B | 14.60 | 15.88 |
| C | 0.51 | 1.14 |
| D | 2.29 | 2.79 |
| E | 4.37 | 4.83 |
| G | 1.14 | 1.40 |
| H | 1.14 | 1.40 |
| J | 8.25 | 9.25 |
| K | 0.30 | 0.64 |
| L | 2.03 | 2.92 |
| M | 2.29 | 2.79 |
| All Dimensions in mm | | |

Maximum Ratings and Electrical Characteristics @ T_A = 25°C unless otherwise specified

Single phase, half wave, 60Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

| Characteristic | Symbol | SBG 2030CT | SBG 2035CT | SBG 2040CT | SBG 2045CT | Unit |
|-----------------------------------------------------------------------------------------------------------------------|-----------------------------------|-------------|------------|------------|------------|------|
| Peak Repetitive Reverse Voltage | V _{RRM} | 30 | 35 | 40 | 45 | V |
| Working Peak Reverse Voltage | V _{RWM} | | | | | |
| DC Blocking Voltage | V _R | | | | | |
| RMS Reverse Voltage | V _{R(RMS)} | 21 | 25 | 28 | 32 | V |
| Average Rectified Output Current @ T _C = 105°C | I _O | 20 | | | | A |
| Non-Repetitive Peak Forward Surge Current 8.3ms Single half sine-wave superimposed on rated load (JEDEC Method) | I _{FSM} | 225 | | | | A |
| Forward Voltage, per Element @ I _F = 10A | V _{FM} | 0.55 | | | | V |
| Peak Reverse Current @ T _j = 25°C at Rated DC Blocking Voltage @ T _j = 100°C | I _{RM} | 1.0 50 | | | | mA |
| Typical Junction Capacitance (Note 2) | C _j | 650 | | | | pF |
| Typical Thermal Resistance Junction to Case (Note 1) | R _{θJC} | 2.0 | | | | K/W |
| Operating and Storage Temperature Range | T _j , T _{STG} | -65 to +150 | | | | °C |

- Notes:
1. Thermal resistance: junction to case mounted on heat sink.
 2. Measured at 1.0MHz and applied reverse voltage of 4.0V DC.
 3. RoHS revision 13.2.2003. Glass and High Temperature Solder Exemptions Applied, see *EU Directive Annex Notes 5 and 7*.

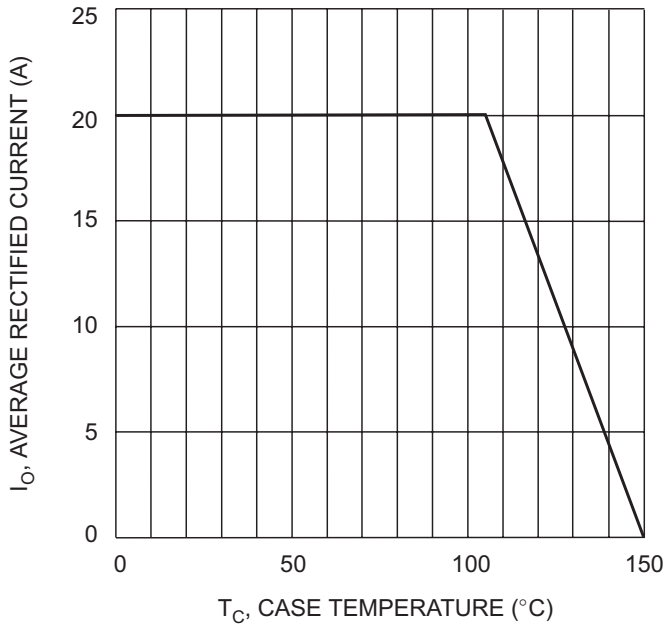


Fig. 1 Forward Current Derating Curve

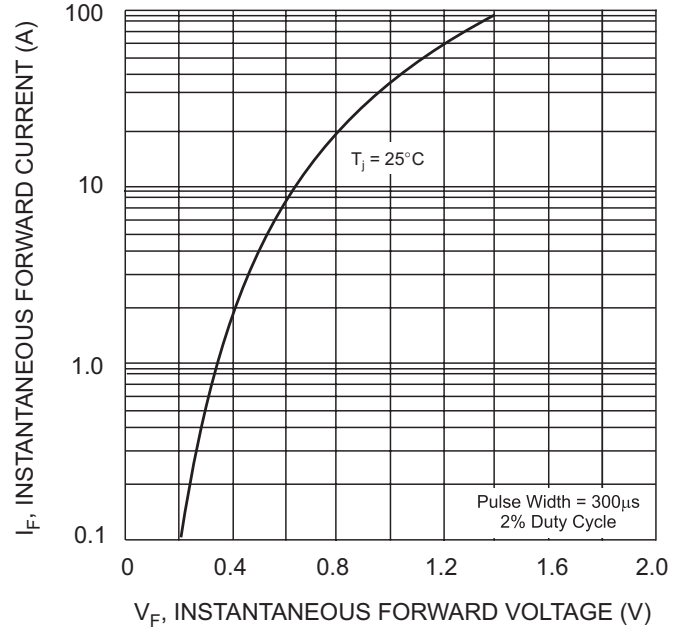


Fig. 2 Typical Forward Characteristics

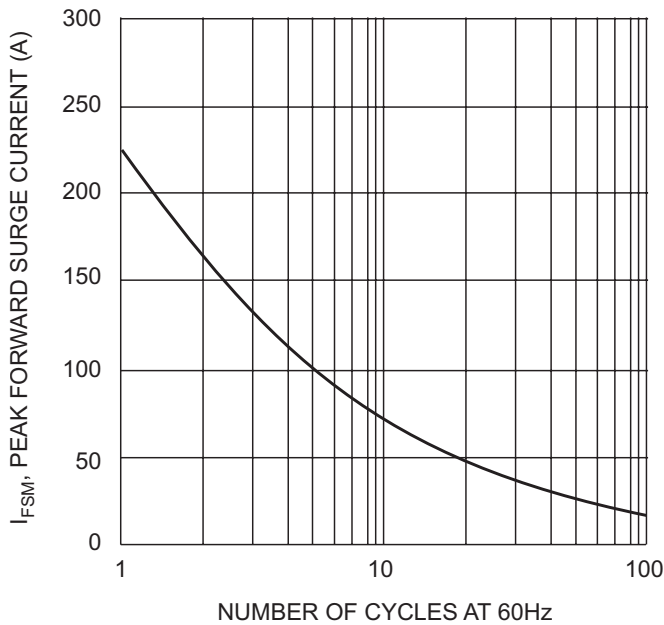


Fig. 3 Max Non-Repetitive Surge Current

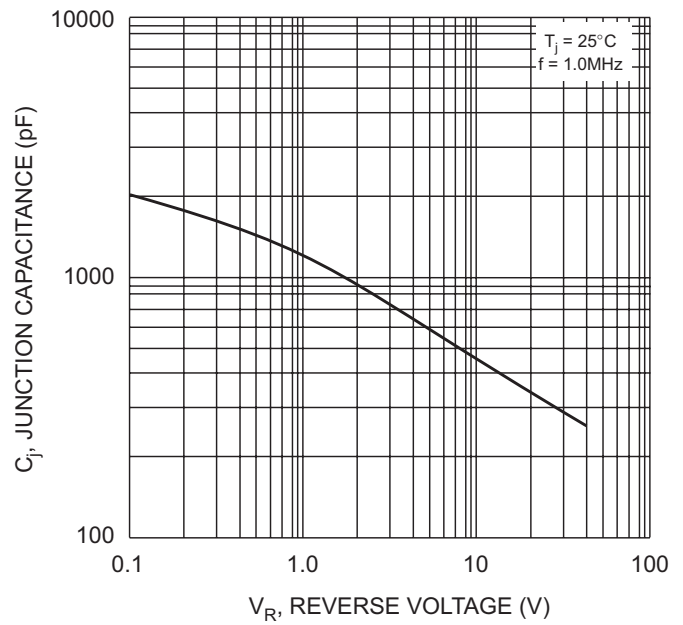


Fig. 4 Typical Junction Capacitance

Ordering Information (Note 4)

| Device | Packaging | Shipping |
|---------------|--------------------|--------------------------|
| SBG2030CT-T-F | D ² PAK | 800/Tape & Reel, 13-inch |
| SBG2035CT-T-F | D ² PAK | 800/Tape & Reel, 13-inch |
| SBG2040CT-T-F | D ² PAK | 800/Tape & Reel, 13-inch |
| SBG2045CT-T-F | D ² PAK | 800/Tape & Reel, 13-inch |

Notes: 4. For packaging details, visit our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

IMPORTANT NOTICE

Diodes, Inc. and its subsidiaries reserve the right to make changes without further notice to any product herein to make corrections, modifications, enhancements, improvements, or other changes. Diodes, Inc. does not assume any liability arising out of the application or use of any product described herein; neither does it convey any license under its patent rights, nor the rights of others. The user of products in such applications shall assume all risks of such use and will agree to hold Diodes Incorporated and all the companies whose products are represented on our website, harmless against all damages.

LIFE SUPPORT

The products located on our website at www.diodes.com are not recommended for use in life support systems where a failure or malfunction of the component may directly threaten life or cause injury without the express written approval of Diodes Incorporated.