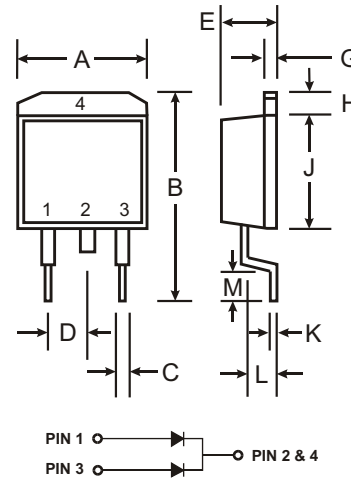


Features

- 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 175A 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 - Tin. Solderable per MIL-STD-202, Method 208
- Ordering Information on Page 2
- Polarity: See Diagram
- Marking: Type Number
- 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 1630CT | SBG 1635CT | SBG 1640CT | SBG 1645CT | Unit |
|--|-----------------------------------|-------------|------------|------------|------------|------|
| Peak Repetitive Reverse Voltage | V _{RRM} | 30 | 35 | 40 | 45 | V |
| Working Peak Reverse Voltage | V _{RWM} | | | | | |
| DC Blocking Voltage (Note 4) | V _R | | | | | |
| RMS Reverse Voltage | V _{R(RMS)} | 21 | 25 | 28 | 32 | V |
| Average Rectified Output Current @ T _C = 95 C | I _O | 16 | | | | A |
| Non-Repetitive Peak Forward Surge Current 8.3ms Single half sine-wave superimposed on rated load | I _{FSM} | 175 | | | | A |
| Forward Voltage, per Element @ I _F = 8.0A | V _{FM} | 0.55 | | | | V |
| Peak Reverse Current @ T _j = 25 C at Rated DC Blocking Voltage (Note 4) @ T _j = 125 C | I _{RM} | 1.0 50 | | | | mA |
| Typical Total Capacitance (Note 2) | C _T | 275 | | | | pF |
| Typical Thermal Resistance Junction to Case (Note 1) | R _{JC} | 3.0 | | | | °C/W |
| Operating and Storage Temperature Range | T _j , T _{STG} | -65 to +125 | | | | 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, per element.
 3. RoHS revision 13.2.2003. High Temperature Solder Exemption Applied, see *EU Directive Annex Note 7*.
 4. Short duration pulse test used to minimize self-heating effect.

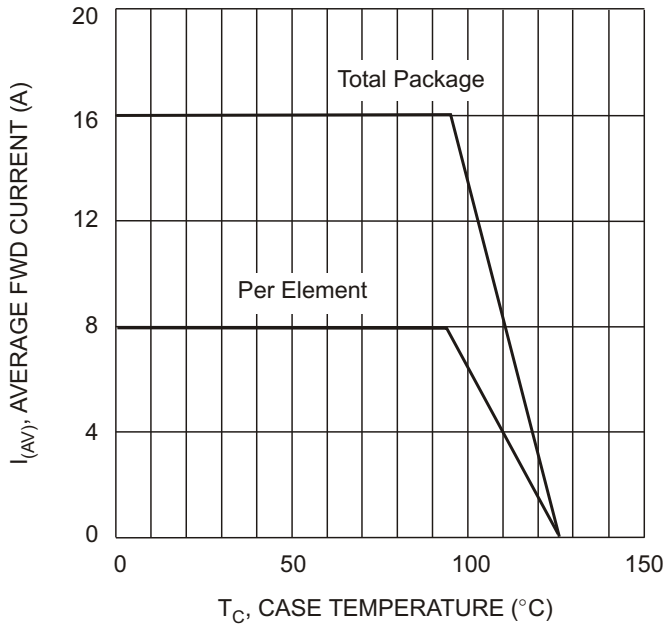


Fig. 1 Forward Current Derating Curve

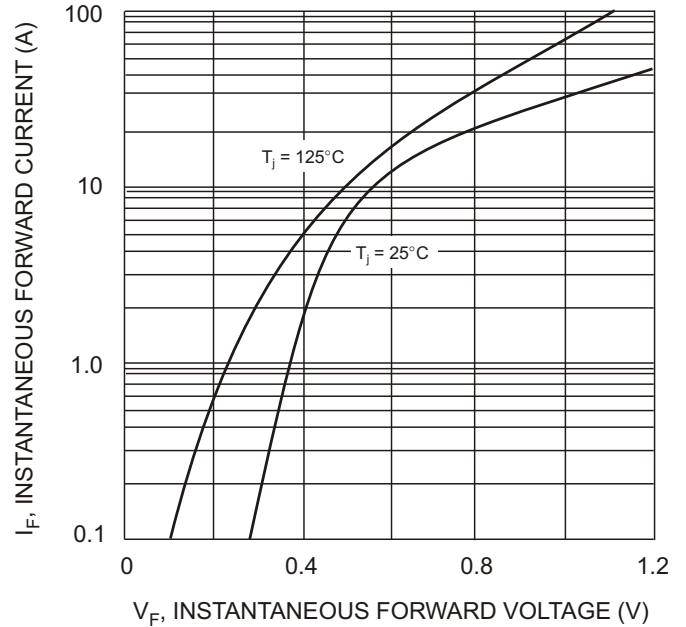


Fig. 2 Typical Forward Characteristics, Per Element

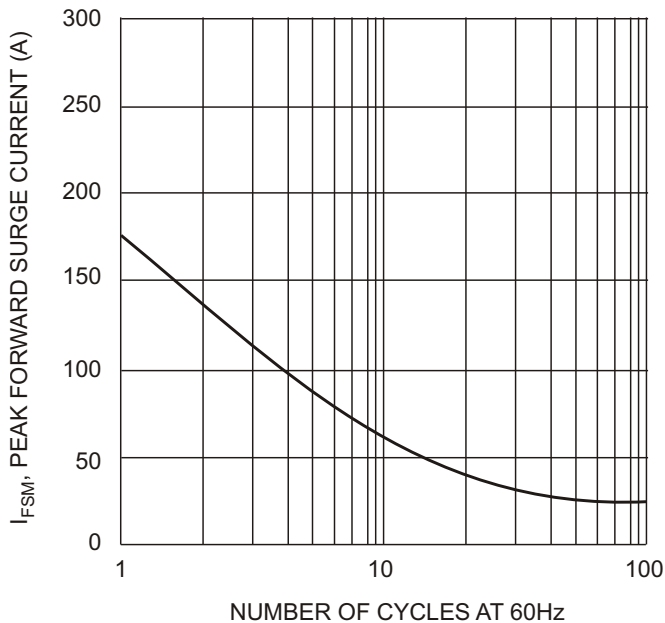


Fig. 3 Max Non-Repetitive Surge Current

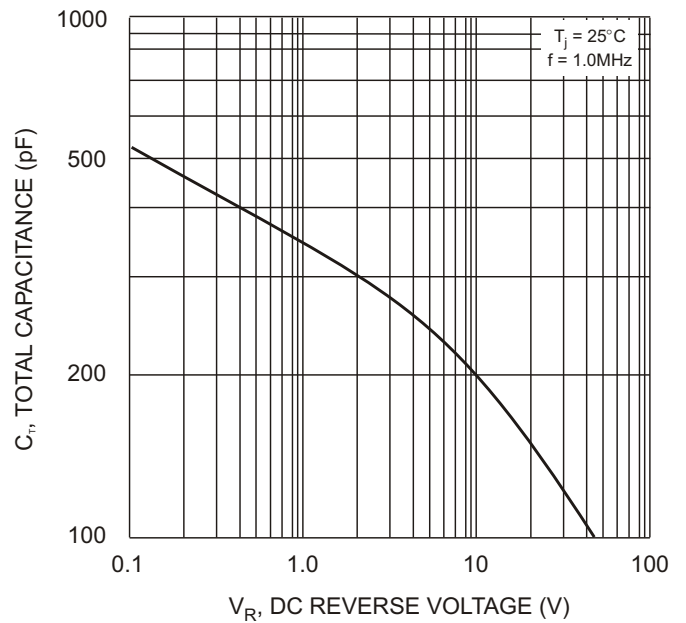


Fig. 4 Typical Total Capacitance, Per Element

Ordering Information (Note 5)

| Device | Packaging | Shipping |
|---------------|--------------------|--------------------------|
| SBG1630CT-T-F | D ² PAK | 800/Tape & Reel, 13-inch |
| SBG1635CT-T-F | D ² PAK | 800/Tape & Reel, 13-inch |
| SBG1640CT-T-F | D ² PAK | 800/Tape & Reel, 13-inch |
| SBG1645CT-T-F | D ² PAK | 800/Tape & Reel, 13-inch |

Notes: 5. For packaging details, visit our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

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