

# SBG1030CT - SBG1045CT

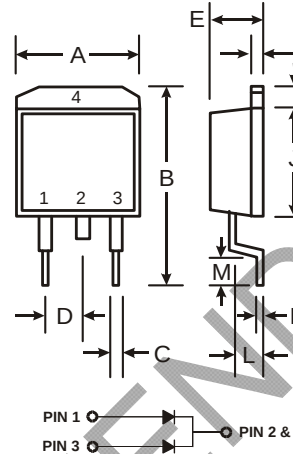
16A SURFACE MOUNT SCHOTTKY BARRIER RECTIFIER

## 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 125A 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: D<sup>2</sup>PAK
- 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 (e3)
- Ordering Information, Note 5, on Page 2
- Polarity: See Diagram
- Marking: Type Number
- Weight: 1.7 grams (approximate)



| D <sup>2</sup> 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<sub>A</sub> = 25°C unless otherwise specified

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

| Characteristic                                               | Symbol          | SBG 1030CT  | SBG 1035CT | SBG 1040CT | SBG 1045CT | Unit          |
|--------------------------------------------------------------|-----------------|-------------|------------|------------|------------|---------------|
| Peak Repetitive Reverse Voltage                              | $V_{RRM}$       |             |            |            |            |               |
| Working Peak Reverse Voltage                                 | $V_{RWM}$       | 30          | 35         | 40         | 45         | V             |
| DC Blocking Voltage (Note 4)                                 | $V_R$           |             |            |            |            |               |
| RMS Reverse Voltage                                          | $V_{R(RMS)}$    | 21          | 25         | 28         | 32         | V             |
| Average Rectified Output Current @ $T_C = 95^{\circ}C$       | $I_O$           | 10          |            |            |            | A             |
| Non-Repetitive Peak Forward Surge Current                    | $I_{FSM}$       | 125         |            |            |            | A             |
| 8.3ms Single Half Sine-Wave Superimposed on Rated Load       |                 |             |            |            |            |               |
| Forward Voltage, per Element @ $I_F = 5.0A$                  | $V_{FM}$        | 0.55        |            |            |            | V             |
| Peak Reverse Current @ $T_j = 25^{\circ}C$                   | $I_{RM}$        | 1.0         |            |            |            | mA            |
| at Rated DC Blocking Voltage (Note 4) @ $T_j = 125^{\circ}C$ |                 | 50          |            |            |            |               |
| Typical Total Capacitance (Note 2)                           | $C_T$           | 275         |            |            |            | pF            |
| Typical Thermal Resistance Junction to Case (Note 1)         | $R_{\theta JC}$ | 3.0         |            |            |            | $^{\circ}C/W$ |
| Operating and Storage Temperature Range                      | $T_j, T_{STG}$  | -65 to +125 |            |            |            | $^{\circ}C$   |

- Notes:
1. Thermal resistance junction to case mounted on heatsink.
  2. Measured at 1.0 MHz 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.
  4. Short duration pulse test used to minimize self-heating effect.

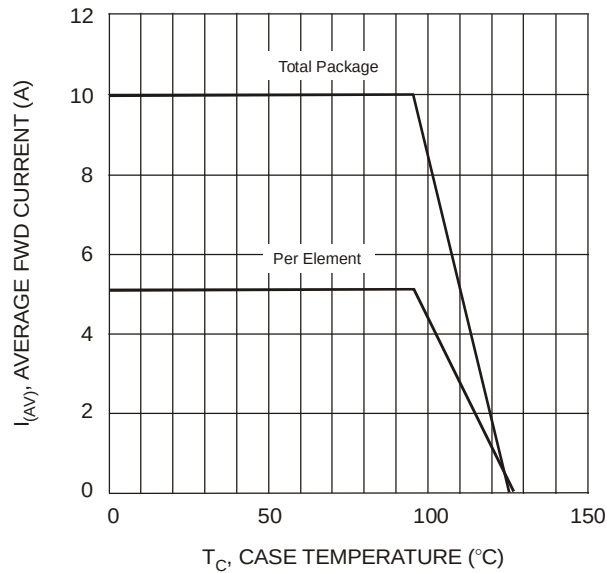


Fig. 1 Forward Current Derating Curve

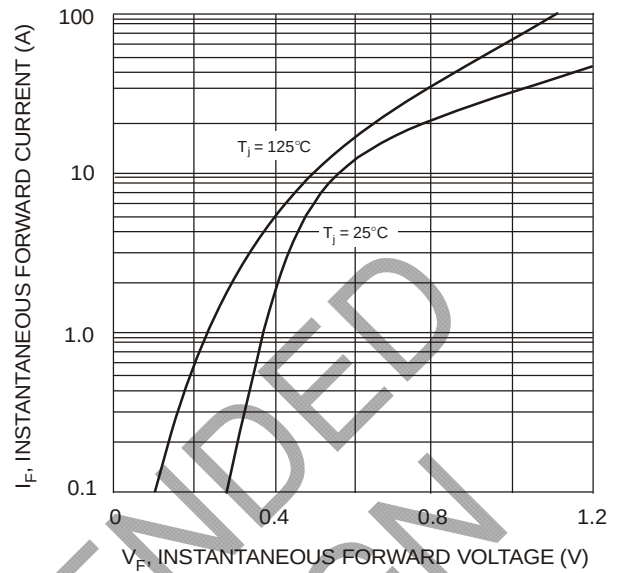


Fig. 2 Typical Forward Characteristics, Per Element

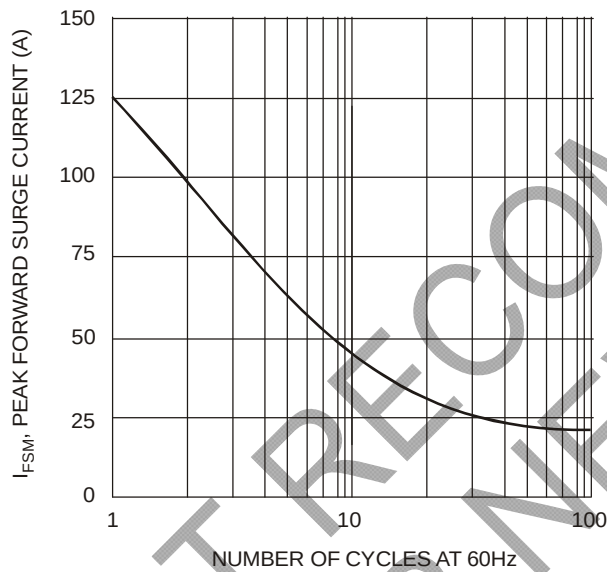


Fig. 3 Max Non-Repetitive Surge Current

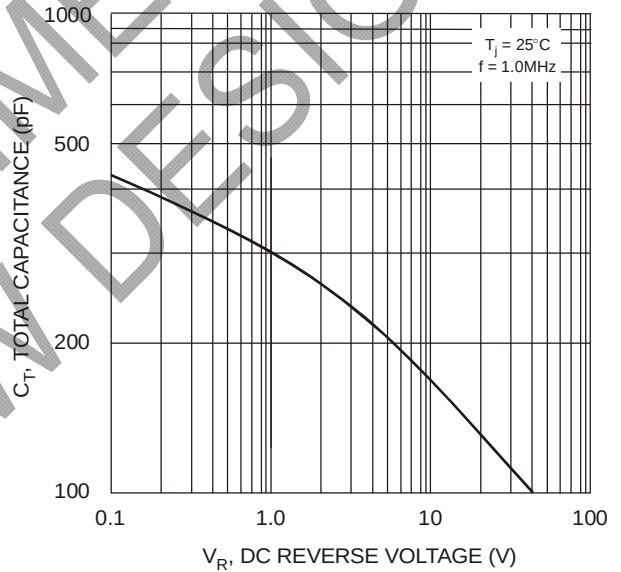


Fig. 4 Typical Total Capacitance, Per Element

## Ordering Information (Note 5)

| Device        | Packaging          | Shipping                 |
|---------------|--------------------|--------------------------|
| SBG1030CT-T-F | D <sup>2</sup> PAK | 800/Tape & Reel, 13-inch |
| SBG1035CT-T-F | D <sup>2</sup> PAK | 800/Tape & Reel, 13-inch |
| SBG1040CT-T-F | D <sup>2</sup> PAK | 800/Tape & Reel, 13-inch |
| SBG1045CT-T-F | D <sup>2</sup> 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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**Наши контакты:**

**Телефон:** +7 812 627 14 35

**Электронная почта:** [sales@st-electron.ru](mailto:sales@st-electron.ru)

**Адрес:** 198099, Санкт-Петербург,  
Промышленная ул, дом № 19, литера Н,  
помещение 100-Н Офис 331