



**THE DATASHEET OF  
SBG1025L-T**

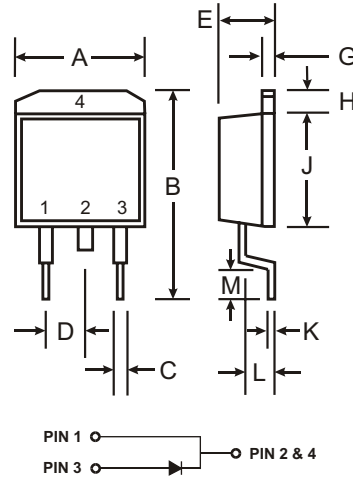


### Features

- Guard Ring Die Construction for Transient Protection
- Low Power Loss, High Efficiency
- High Surge Capability
- Very Low Forward Voltage Drop
- For Use in Low Voltage, High Frequency Inverters, Free Wheeling, and Polarity Protection Applications
- Plastic Material: UL Flammability Classification Rating 94V-0

### Mechanical Data

- Case: D<sup>2</sup>PAK Molded Plastic
- Terminals: Solderable per MIL-STD-202, Method 208
- Polarity: See Diagram
- Marking: Type Number
- Weight: 1.7 grams (approx.)
- Ordering Information: See Sheet 2



| 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 @ T<sub>A</sub> = 25°C unless otherwise specified

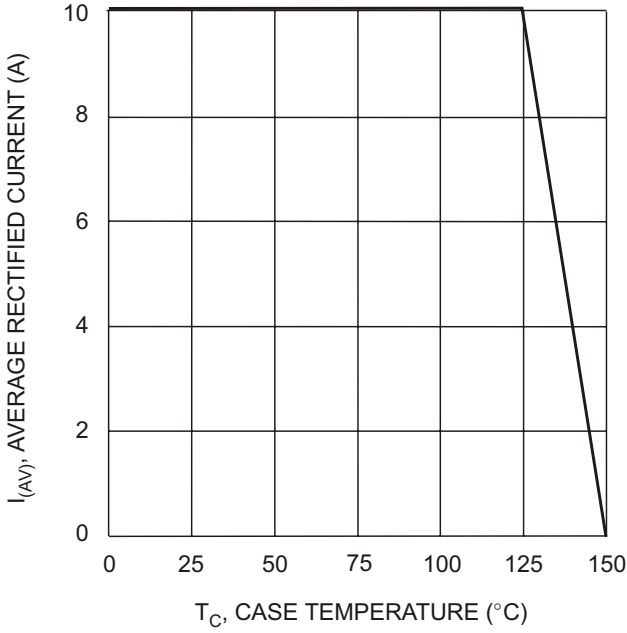
Single phase, half wave, 60Hz, resistive or inductive load.  
For capacitive load, derate current by 20%.

| Characteristic                                                                                                        | Symbol                                                 | SBG1025L    | SBG1030L | Unit |
|-----------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|-------------|----------|------|
| Peak Repetitive Reverse Voltage<br>Working Peak Reverse Voltage<br>DC Blocking Voltage                                | V <sub>RRM</sub><br>V <sub>RWM</sub><br>V <sub>R</sub> | 25          | 30       | V    |
| RMS Reverse Voltage                                                                                                   | V <sub>R(RMS)</sub>                                    | 18          | 21       | V    |
| Average Rectified Output Current @ T <sub>C</sub> = 120°C                                                             | I <sub>O</sub>                                         | 10          |          | A    |
| Non-Repetitive Peak Forward Surge Current<br>8.3ms Single half sine-wave Superimposed on Rated Load<br>(JEDEC Method) | I <sub>FSM</sub>                                       | 200         |          | A    |
| Typical Thermal Resistance Junction to Case (Note 1)                                                                  | R <sub>θJC</sub>                                       | 3.0         |          | °C/W |
| Operating Temperature Range                                                                                           | T <sub>j</sub>                                         | -65 to +125 |          | °C   |
| Storage Temperature Range                                                                                             | T <sub>STG</sub>                                       | -65 to +150 |          | °C   |

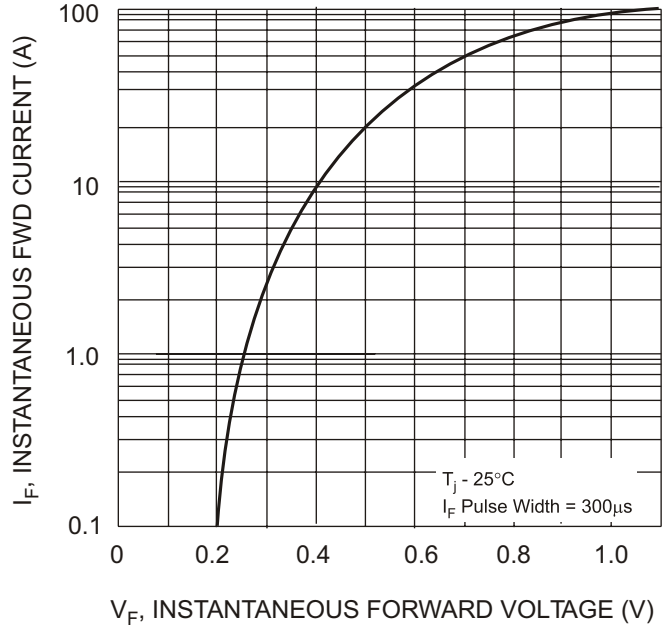
### Electrical Characteristics @ T<sub>A</sub> = 25°C unless otherwise specified

| Characteristic                                       | Symbol             | Min         | Typ               | Max                          | Unit   | Test Condition                                                                                                                                                                                     |
|------------------------------------------------------|--------------------|-------------|-------------------|------------------------------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Reverse Breakdown Voltage<br>SBG1025L<br>SBG1030L    | V <sub>(BR)R</sub> | 25<br>30    | —<br>—            | —<br>—                       | V<br>V | I <sub>R</sub> = 1mA                                                                                                                                                                               |
| Forward Voltage                                      | V <sub>FM</sub>    | —<br>—<br>— | 0.34<br>—<br>0.48 | 0.45<br>0.36<br>0.55<br>0.50 | V      | @ I <sub>F</sub> = 10A, T <sub>C</sub> = 25°C<br>@ I <sub>F</sub> = 10A, T <sub>C</sub> = 125°C<br>@ I <sub>F</sub> = 20A, T <sub>C</sub> = 25°C<br>@ I <sub>F</sub> = 20A, T <sub>C</sub> = 125°C |
| Peak Reverse Current<br>at Rated DC Blocking Voltage | I <sub>RM</sub>    | —<br>—      | —<br>150          | 1.0<br>260                   | mA     | @ T <sub>C</sub> = 25°C<br>@ T <sub>C</sub> = 125°C                                                                                                                                                |
| Typical Junction Capacitance                         | C <sub>j</sub>     | —           | 350               | —                            | pF     | f = 1.0MHz, V <sub>R</sub> = 4.0V DC                                                                                                                                                               |

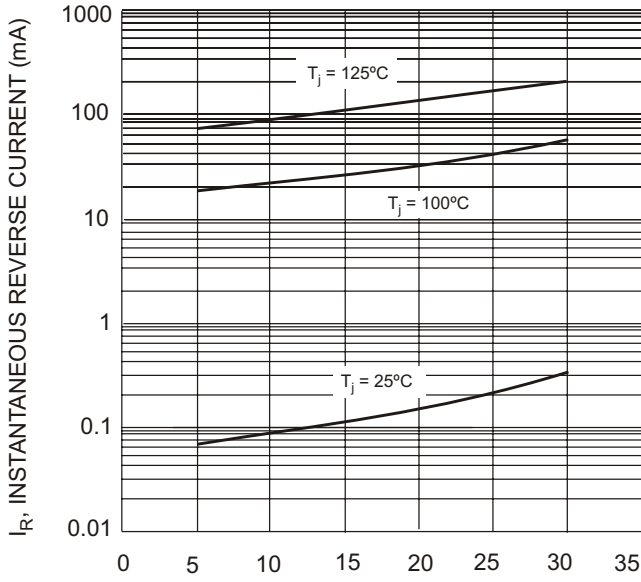
Notes: 1. Thermal resistance: junction to case mounted on heat sink.



$T_C$ , CASE TEMPERATURE (°C)  
Fig. 1 Forward Derating Curve



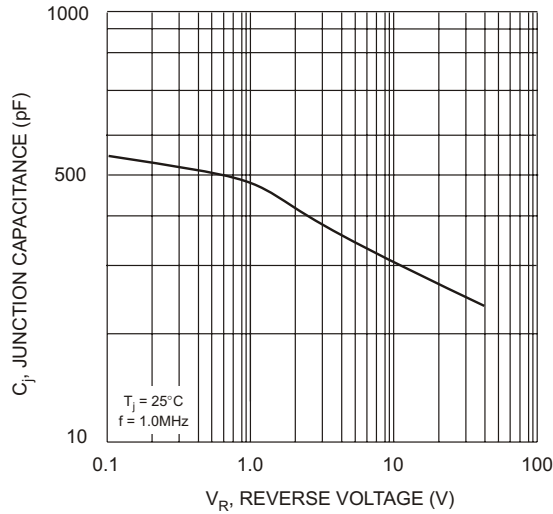
$V_F$ , INSTANTANEOUS FORWARD VOLTAGE (V)  
Fig. 2 Typical Forward Characteristics



$V_R$ , REVERSE VOLTAGE (V)  
Fig. 3 Typical Reverse Characteristics



NUMBER OF CYCLES AT 60Hz  
Fig. 4 Maximum Non-Repetitive Surge Current



$V_R$ , REVERSE VOLTAGE (V)  
Fig. 5 Typical Junction Capacitance

**Ordering Information** (Note 2)

| Device     | Packaging          | Shipping        |
|------------|--------------------|-----------------|
| SBG1025L   | D <sup>2</sup> PAK | 50/Tube         |
| SBG1025L-T | D <sup>2</sup> PAK | 800/Tape & Reel |
| SBG1030L   | D <sup>2</sup> PAK | 50/Tube         |
| SBG1030L-T | D <sup>2</sup> PAK | 800/Tape & Reel |



Notes: 2. For Packaging Details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

**Marking Information**

SBG10XXL = Product type marking code (SBG1025L or SBG1030L)  
DII = Manufacturers' code marking  
YWW = Date code marking  
Y = Last digit of year ex: 2 for 2002  
WW = Week code 01 to 52

## Looking for pricing, stock, or lifecycle information?

Click below to explore more details on WIN SOURCE:

-  [View SBG1025L-T on WIN SOURCE](#)
-  [Diodes Incorporated Information](#)

## Optimize Your Supply Chain with WIN SOURCE Solutions

-  Global Sourcing Solution
-  Obsolete Management
-  Cost Control Management
-  Shortage Management
-  Alternative Solution
-  Excess Inventory Management