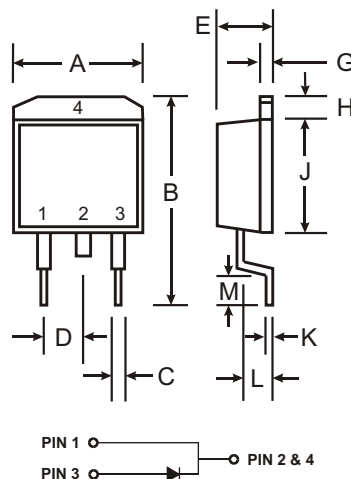


### Features

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  
**Lead Free Finish, RoHS Compliant (Note 2)**

### 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)  
 Polarity: See Diagram  
 Marking: Type Number  
 Ordering Information: See Page 2  
 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 @ T<sub>A</sub> = 25 C unless otherwise specified

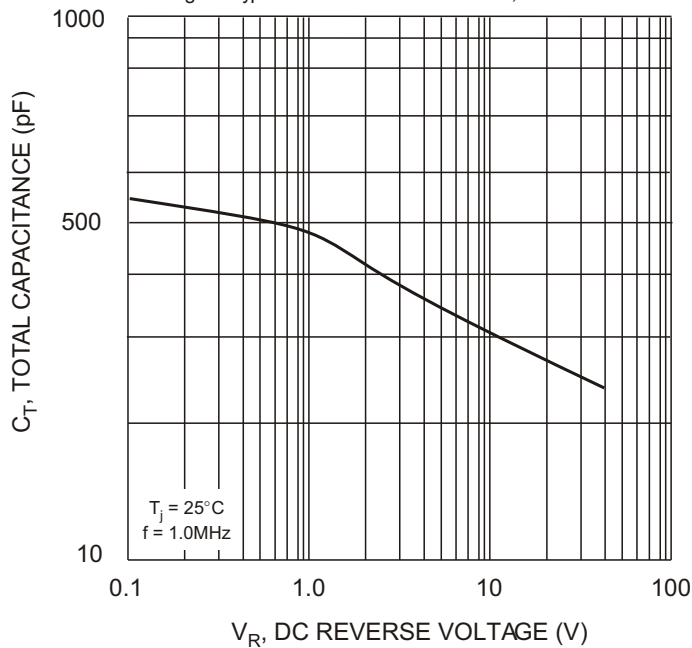
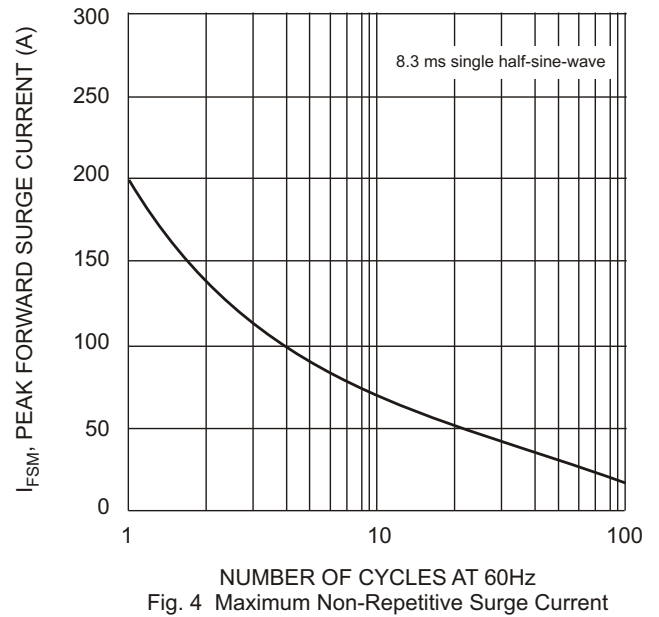
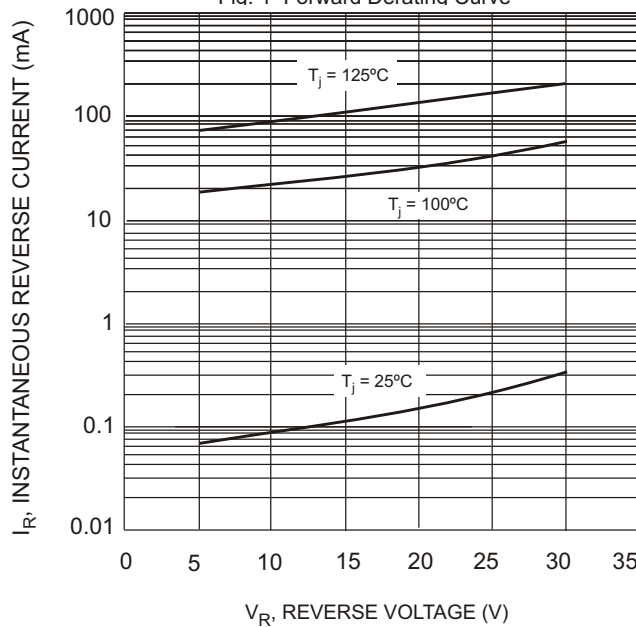
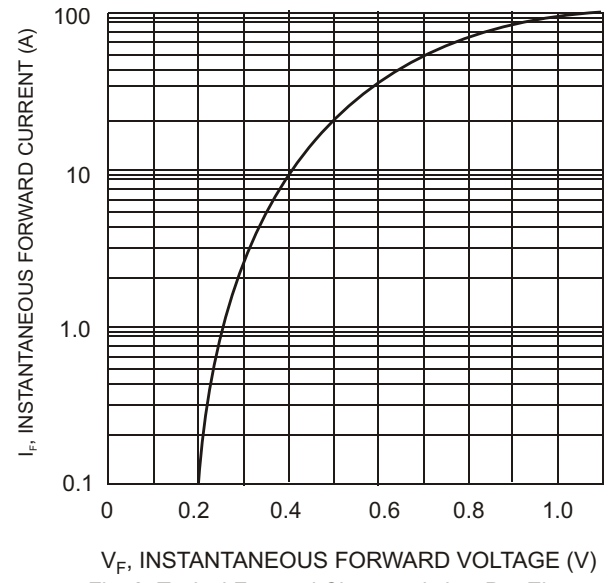
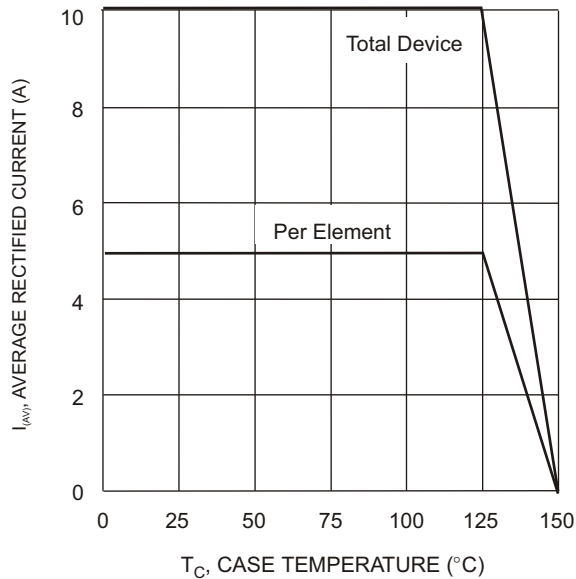
Single phase, half wave, 60Hz, resistive or inductive load.

| Characteristic                                                                                      | Symbol              | SBG1025L    | SBG1030L | Unit |
|-----------------------------------------------------------------------------------------------------|---------------------|-------------|----------|------|
| Peak Repetitive Reverse Voltage                                                                     | V <sub>RRM</sub>    | 25          | 30       | V    |
| Working Peak Reverse Voltage                                                                        | V <sub>RWM</sub>    |             |          |      |
| DC Blocking Voltage                                                                                 | V <sub>R</sub>      |             |          |      |
| 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 | I <sub>FSM</sub>    | 200         |          | A    |
| Typical Thermal Resistance Junction to Case (Note 1)                                                | R <sub>JC</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 (Note 3)                            | V <sub>(BR)R</sub> | 25<br>30 |                              |                              | V<br>V | I <sub>R</sub> = 1mA                                                                                                                                                                               |
| Forward Voltage                                               | V <sub>FM</sub>    |          | 0.34<br>0.36<br>0.55<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 (Note 3) | I <sub>RM</sub>    |          | 150                          | 1.0<br>260                   | mA     | @ T <sub>C</sub> = 25 C<br>@ T <sub>C</sub> = 125 C                                                                                                                                                |
| Typical Total Capacitance                                     | C <sub>T</sub>     |          | 350                          |                              | pF     | f = 1.0MHz, V <sub>R</sub> = 4.0V DC, Per Element                                                                                                                                                  |

- Notes: 1. Thermal resistance: junction to case mounted on heat sink.  
 2. RoHS revision 13.2.2003. High Temperature Solder Exemption Applied, See EU Directive Annex Note 7.  
 3. Short duration pulse test used to minimize self-heating effect.



## Ordering Information (Note 4)

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

Notes: 4. 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

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