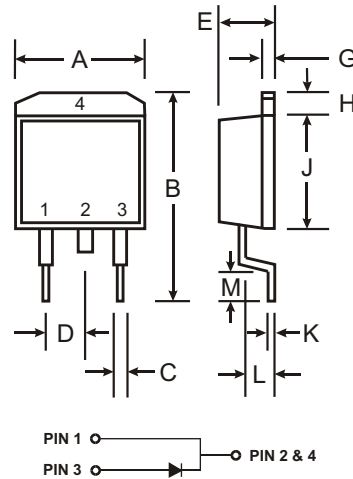


### Features

- 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

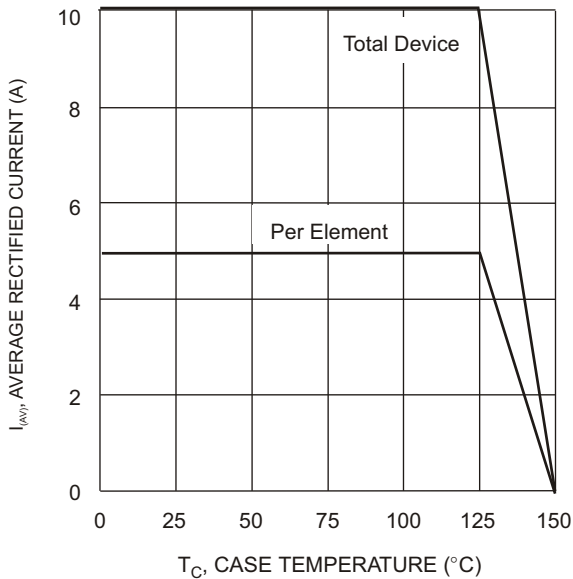
Single phase, half wave, 60Hz, resistive or inductive load.

Characteristic	Symbol	SBG1025L	SBG1030L	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V <sub>RRM</sub> V <sub>RWM</sub> 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 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

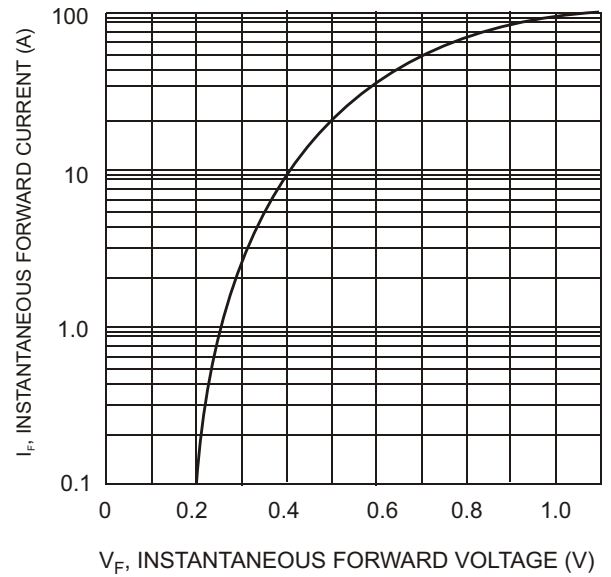
### Electrical Characteristics @ T<sub>A</sub> = 25 C unless otherwise specified

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 3) SBG1025L SBG1030L	V <sub>(BR)R</sub>	25 30			V V	I <sub>R</sub> = 1mA
Forward Voltage	V <sub>FM</sub>		0.34 0.36 0.48	0.45 0.55 0.50	V	@ I <sub>F</sub> = 10A, T <sub>C</sub> = 25 C @ I <sub>F</sub> = 10A, T <sub>C</sub> = 125 C @ I <sub>F</sub> = 20A, T <sub>C</sub> = 25 C @ I <sub>F</sub> = 20A, T <sub>C</sub> = 125 C
Peak Reverse Current at Rated DC Blocking Voltage (Note 3)	I <sub>RM</sub>		150	1.0 260	mA	@ T <sub>C</sub> = 25 C @ 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

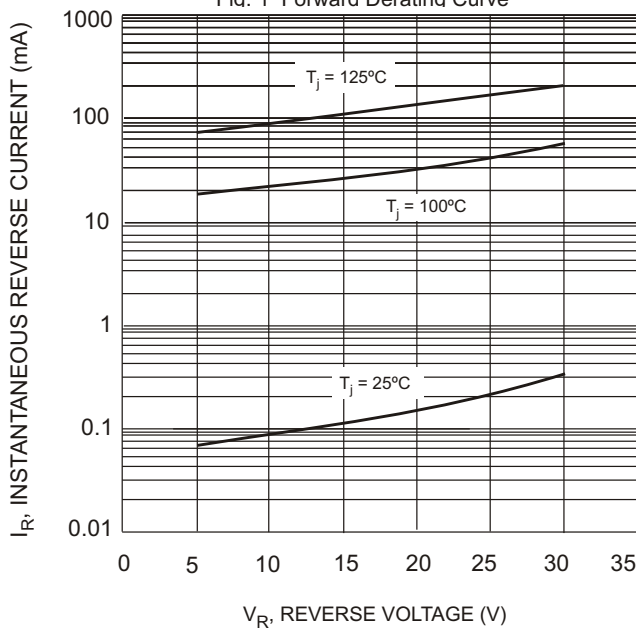
- Notes:
- Thermal resistance: junction to case mounted on heat sink.
  - RoHS revision 13.2.2003. High Temperature Solder Exemption Applied, See EU Directive Annex Note 7.
  - Short duration pulse test used to minimize self-heating effect.



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



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



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

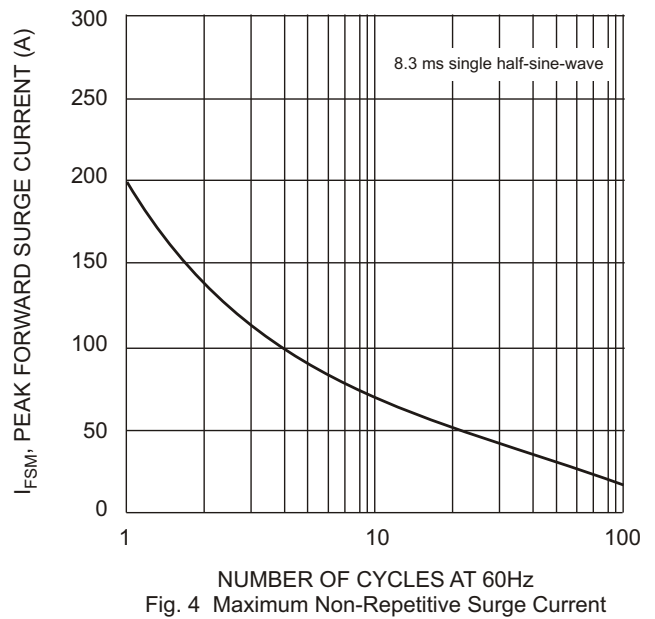


Fig. 4 Maximum Non-Repetitive Surge Current

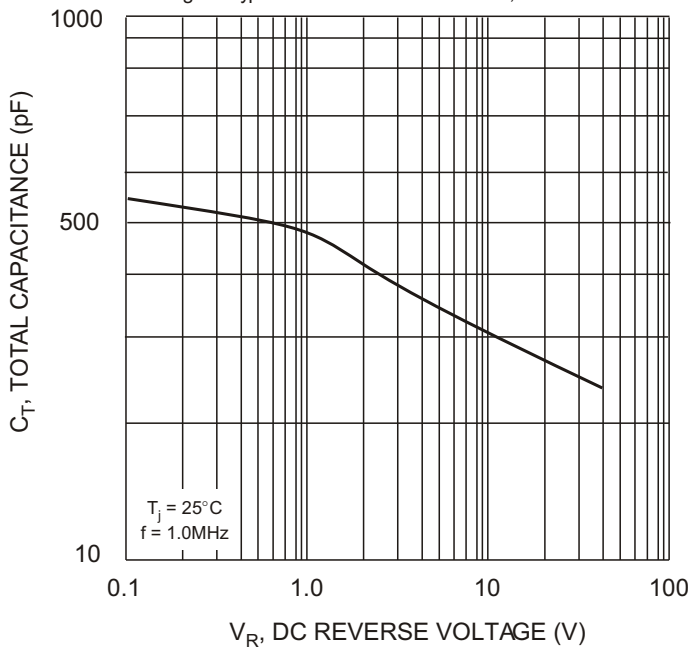


Fig. 5 Typical Total Capacitance, Per Element

**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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