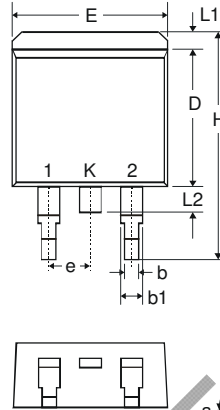


### Features

- 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)**



D <sup>2</sup> PAK		
Dim	Min	Max
A	4.07	4.82
b	0.51	0.99
b1	1.15	1.77
c	0.356	0.58
c1	1.143	1.65
D	8.39	9.65
D1	6.55	—
E	9.66	10.66
E1	6.23	—
e	2.54 Typ	
H	14.61	15.87
L	1.78	2.79
L1	—	1.67
L2	—	1.77
a	0°	8°
All Dimensions in mm		

### 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 **(e3)**
- Polarity: See Diagram
- Marking: Type Number
- Ordering Information: See Page 2
- Weight: 1.7 grams (approximate)

### 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>			
Working Peak Reverse Voltage	V <sub>VRWM</sub>	25	30	V
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	I <sub>FSM</sub>		200	A
8.3ms Single half sine-wave Superimposed on Rated Load				
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 (Note 3)	V <sub>(BR)R</sub>	25	—	—	V	I <sub>R</sub> = 1mA
		30	—	—	V	
Forward Voltage	V <sub>FM</sub>	—	0.34	0.45	V	@ I <sub>F</sub> = 10A, T <sub>C</sub> = 25°C
		—	—	0.36		@ I <sub>F</sub> = 10A, T <sub>C</sub> = 125°C
		—	0.48	0.55		@ I <sub>F</sub> = 20A, T <sub>C</sub> = 25°C
		—	—	0.50		@ 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>	—	—	1.0	mA	@ T <sub>C</sub> = 25°C
		—	150	260		@ 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.

**NOT RECOMMENDED  
FOR NEW DESIGN**

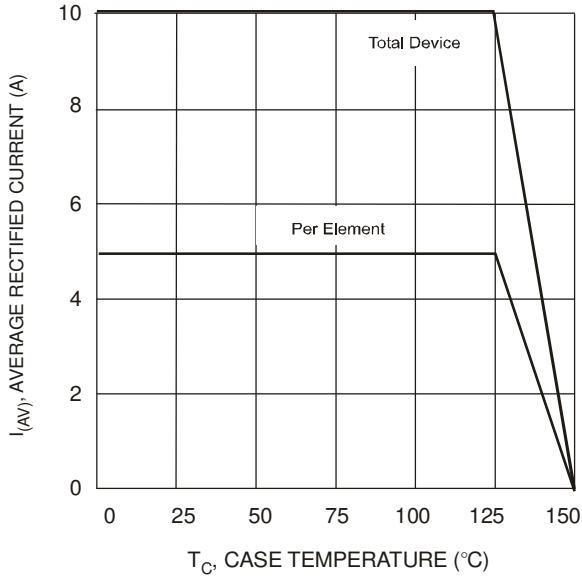


Fig. 1 Forward Derating Curve

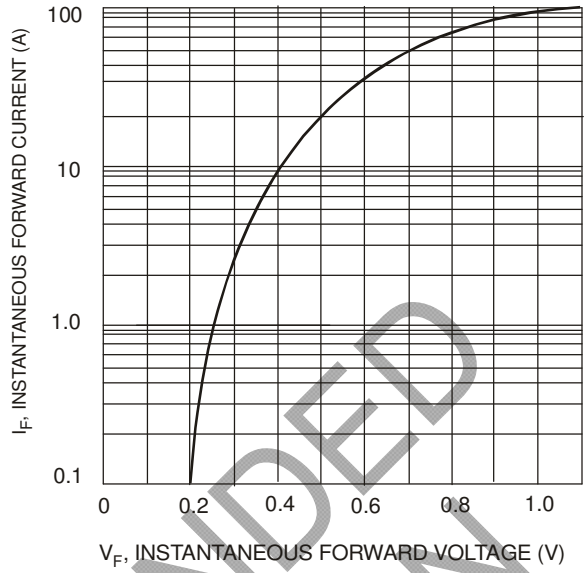


Fig. 2 Typical Forward Characteristics, Per Element

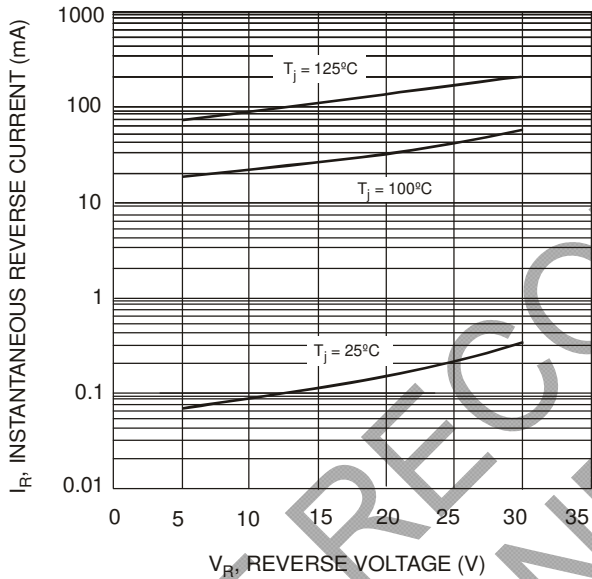


Fig. 3 Typical Reverse Characteristics, Per Element

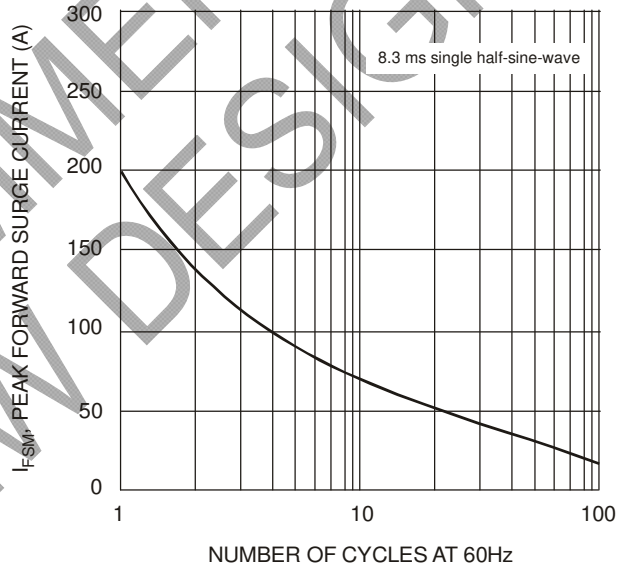


Fig. 4 Maximum Non-Repetitive Surge Current

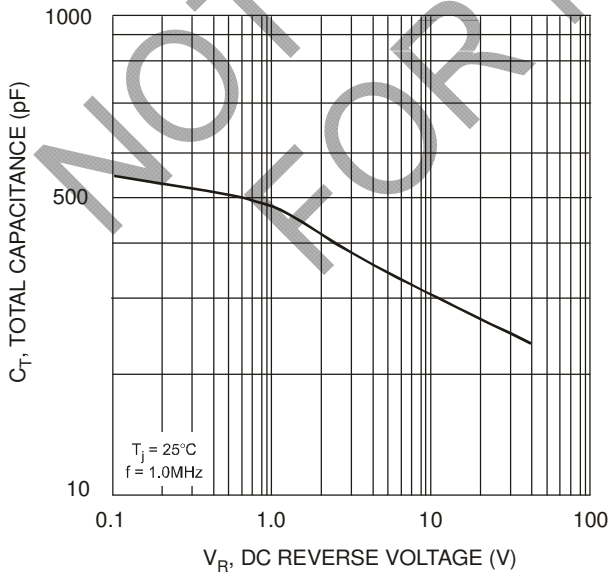


Fig. 5 Typical Total Capacitance, Per Element

## 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, visit our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

## Marking Information



SBG10XXL = Product type marking code (SBG1025L or SBG1030L)  
 ☺ = 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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