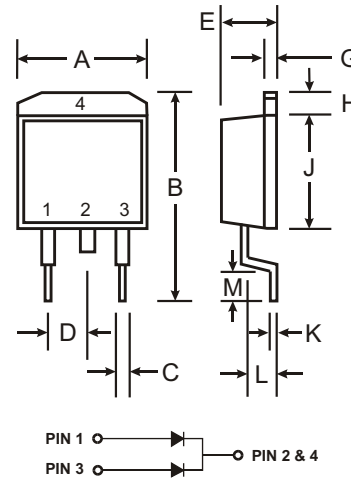


### Features

- 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 175A 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
- Ordering Information 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 1630CT	SBG 1635CT	SBG 1640CT	SBG 1645CT	Unit
Peak Repetitive Reverse Voltage	V <sub>RRM</sub>	30	35	40	45	V
Working Peak Reverse Voltage	V <sub>RWM</sub>					
DC Blocking Voltage (Note 4)	V <sub>R</sub>					
RMS Reverse Voltage	V <sub>R(RMS)</sub>	21	25	28	32	V
Average Rectified Output Current @ T <sub>C</sub> = 95 C	I <sub>O</sub>	16				A
Non-Repetitive Peak Forward Surge Current 8.3ms Single half sine-wave superimposed on rated load	I <sub>FSM</sub>	175				A
Forward Voltage, per Element @ I <sub>F</sub> = 8.0A	V <sub>FM</sub>	0.55				V
Peak Reverse Current @ T <sub>j</sub> = 25 C at Rated DC Blocking Voltage (Note 4) @ T <sub>j</sub> = 125 C	I <sub>RM</sub>	1.0 50				mA
Typical Total Capacitance (Note 2)	C <sub>T</sub>	275				pF
Typical Thermal Resistance Junction to Case (Note 1)	R <sub>JC</sub>	3.0				°C/W
Operating and Storage Temperature Range	T <sub>j</sub> , T <sub>STG</sub>	-65 to +125				C

- Notes:
1. Thermal resistance: junction to case mounted on heat sink.
  2. Measured at 1.0MHz and applied reverse voltage of 4.0V DC, per element.
  3. RoHS revision 13.2.2003. High Temperature Solder Exemption Applied, see *EU Directive Annex Note 7*.
  4. Short duration pulse test used to minimize self-heating effect.

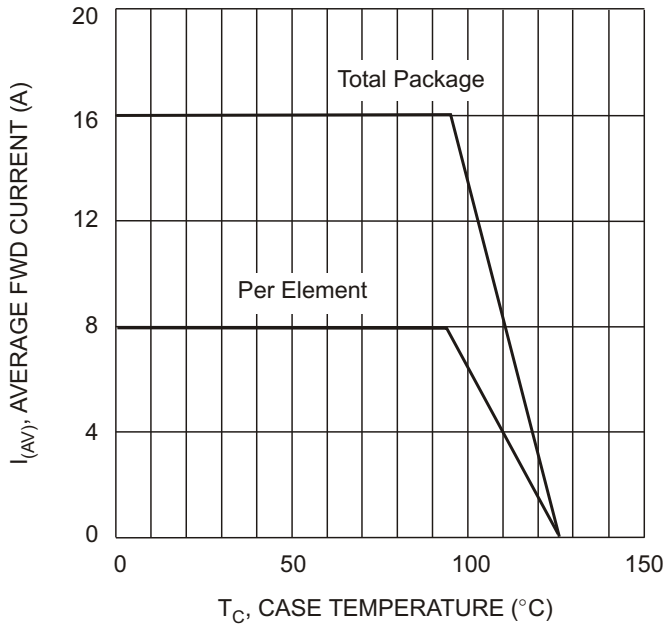


Fig. 1 Forward Current Derating Curve

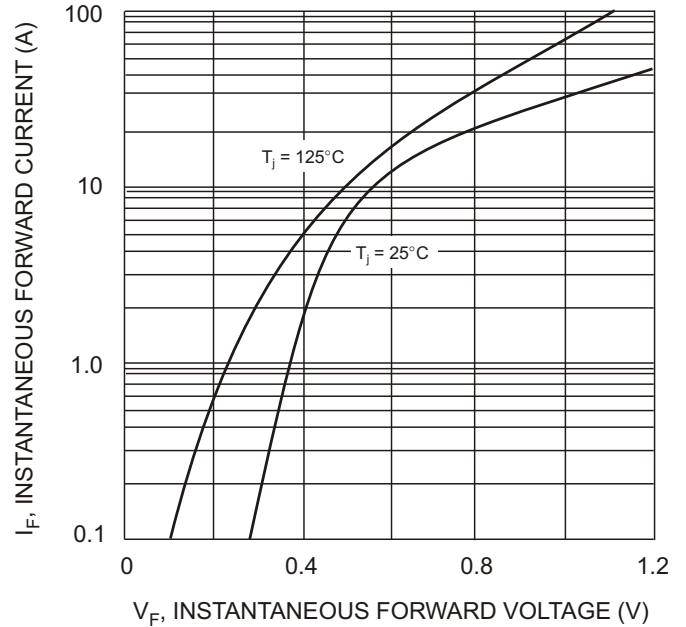


Fig. 2 Typical Forward Characteristics, Per Element

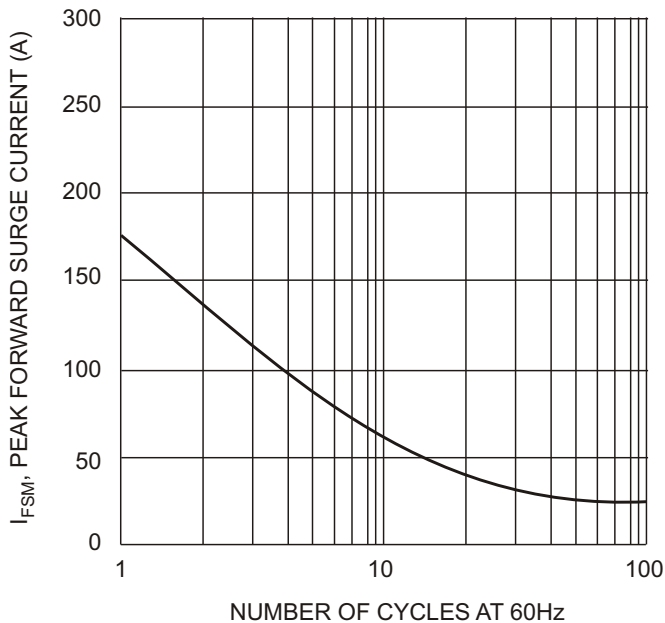


Fig. 3 Max Non-Repetitive Surge Current

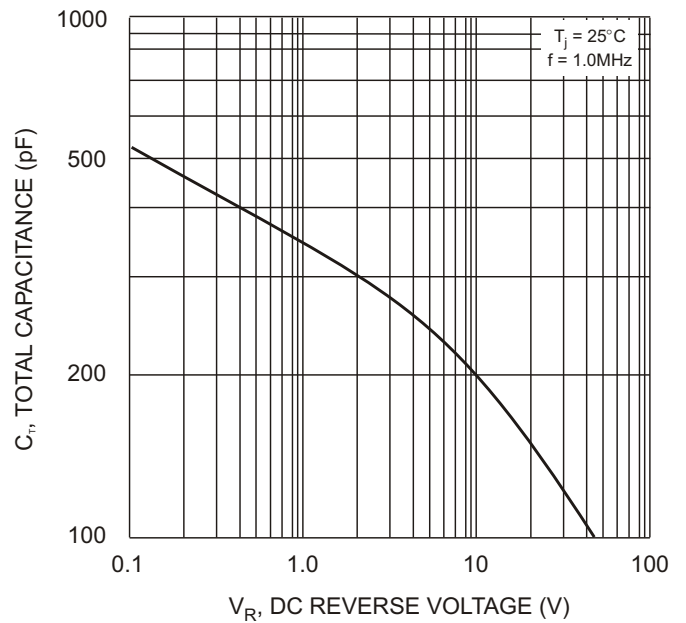


Fig. 4 Typical Total Capacitance, Per Element

**Ordering Information** (Note 5)

Device	Packaging	Shipping
SBG1630CT-T-F	D <sup>2</sup> PAK	800/Tape & Reel, 13-inch
SBG1635CT-T-F	D <sup>2</sup> PAK	800/Tape & Reel, 13-inch
SBG1640CT-T-F	D <sup>2</sup> PAK	800/Tape & Reel, 13-inch
SBG1645CT-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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