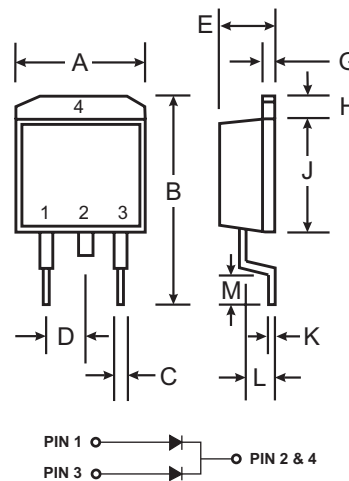


### Features

- Schottky Barrier Chip
- 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 250A Peak
- For Use in Low Voltage, High Frequency Inverters, Free Wheeling, and Polarity Protection Applications
- **Lead Free Finish/RoHS Compliant Version (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 - Bright Tin. Solderable per MIL-STD-202, Method 208
- Ordering Information, Page 2
- Polarity: See Diagram
- Marking: Type Number
- Mounting Position: Any
- Weight: 1.7 grams (approximate)



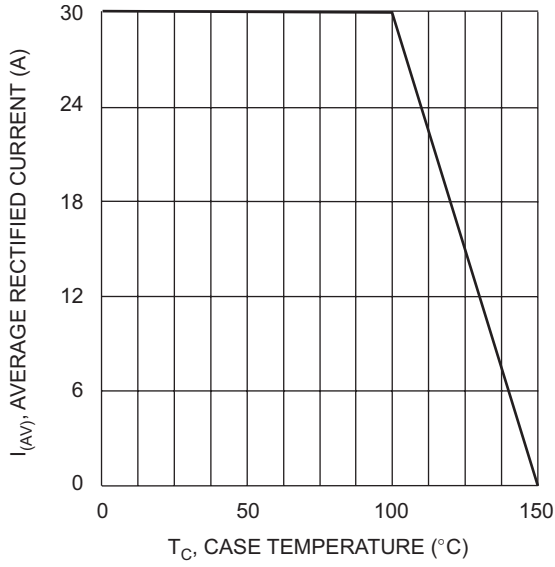
D <sup>2</sup> PAK		
Dim	Min	Max
A	9.65	10.69
B	14.60	15.88
C	0.51	1.14
D	2.29	2.79
E	4.37	4.83
G	1.14	1.40
H	1.14	1.40
J	8.25	9.25
K	0.30	0.64
L	2.03	2.92
M	2.29	2.79
All Dimensions in mm		

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

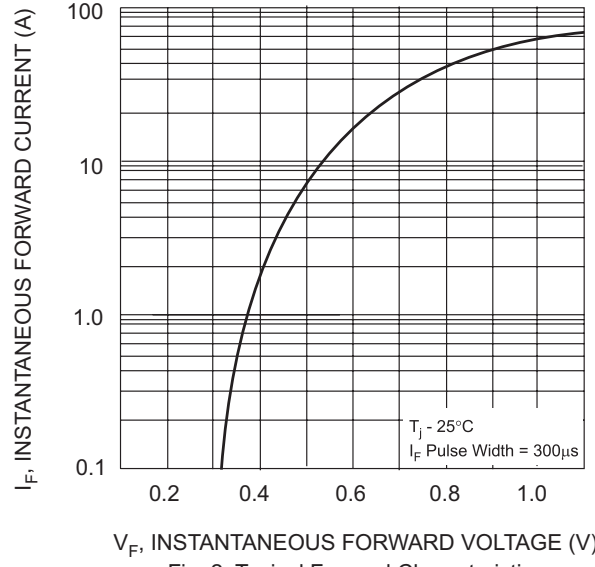
Single phase, half wave, 60Hz, resistive or inductive load.  
For capacitive load, derate current by 20%.

Characteristic	Symbol	SBG 3030CT	SBG 3040CT	SBG 3045CT	SBG 3050CT	SBG 3060CT	Unit	
Peak Repetitive Reverse Voltage	V <sub>RRM</sub>	30	40	45	50	60	V	
Working Peak Reverse Voltage	V <sub>RWM</sub>							
DC Blocking Voltage	V <sub>R</sub>							
RMS Reverse Voltage	V <sub>R(RMS)</sub>	21	28	32	35	42	V	
Average Rectified Output Current @ T <sub>C</sub> = 100°C	I <sub>O</sub>	30						A
Non-Repetitive Peak Forward Surge Current 8.3ms Single half sine-wave superimposed on rated load (JEDEC Method)	I <sub>FSM</sub>	250						A
Forward Voltage, per Element @ I <sub>F</sub> = 15A, T <sub>C</sub> = 25°C	V <sub>FM</sub>	0.55			0.70		V	
Peak Reverse Current @ T <sub>C</sub> = 25°C at Rated DC Blocking Voltage @ T <sub>C</sub> = 100°C	I <sub>RM</sub>				1.0 75		mA	
Typical Junction Capacitance (Note 2)	C <sub>j</sub>	420					pF	
Typical Thermal Resistance Junction to Case (Note 1)	R <sub>θJC</sub>	1.5					K/W	
Operating and Storage Temperature Range	T <sub>j</sub> , T <sub>STG</sub>	-65 to +150					°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.
  3. RoHS revision 13.2.2003. Glass and High Temperature Solder Exemptions Applied, see EU Directive Annex Notes 5 and 7.



T<sub>C</sub>, CASE TEMPERATURE (°C)  
Fig. 1 Forward Derating Curve



V<sub>F</sub>, INSTANTANEOUS FORWARD VOLTAGE (V)  
Fig. 2 Typical Forward Characteristics

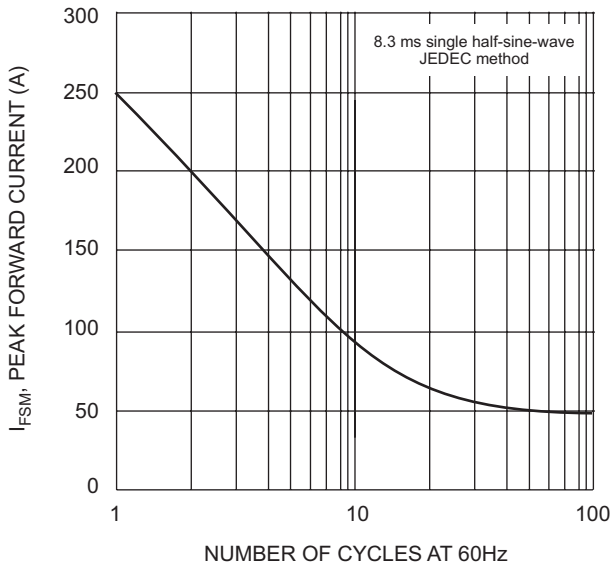
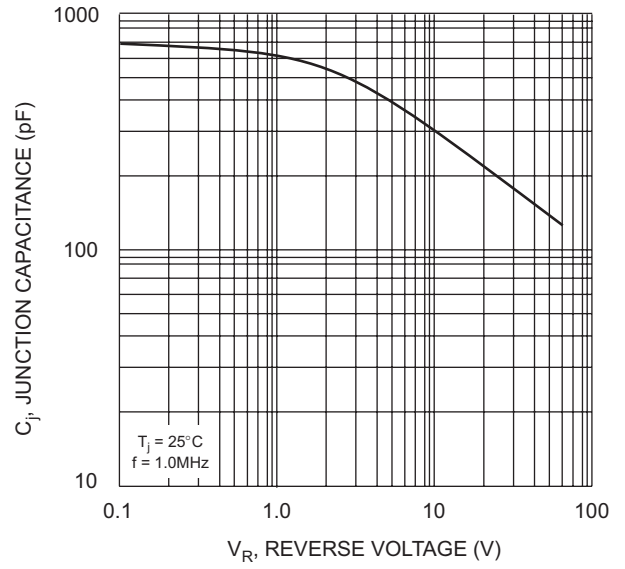


Fig. 3 Maximum Non-Repetitive Surge Current



V<sub>R</sub>, REVERSE VOLTAGE (V)  
Fig. 4 Typical Junction Capacitance

**Ordering Information** (Note 4)

Device	Packaging	Shipping
SBG3030CT-T-F	D <sup>2</sup> PAK	800/Tape & Reel, 13-inch
SBG3040CT-T-F	D <sup>2</sup> PAK	800/Tape & Reel, 13-inch
SBG3045CT-T-F	D <sup>2</sup> PAK	800/Tape & Reel, 13-inch
SBG3050CT-T-F	D <sup>2</sup> PAK	800/Tape & Reel, 13-inch
SBG3060CT-T-F	D <sup>2</sup> PAK	800/Tape & Reel, 13-inch

Notes: 4. For packaging details, visit our website at <http://www.diodes.com/datasheets/ap02007.pdf>.