



**THE DATASHEET OF  
SBL1645CT**

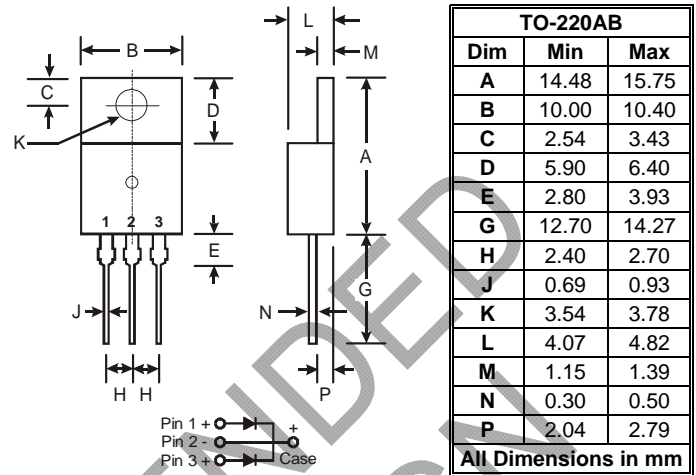


### Features

- 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
- For Use in Low Voltage, High Frequency Inverters, Free Wheeling, and Polarity Protection Applications
- **Lead Free Finish, RoHS Compliant (Note 3)**

### Mechanical Data

- Case: TO-220AB
- 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: As Marked on Body
- Marking: Type Number
- Weight: 2.24 grams (approximate)



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

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

Characteristic	Symbol	SBL 1630CT	SBL 1635CT	SBL 1640CT	SBL 1645CT	SBL 1650CT	SBL 1660CT	Unit
Peak Repetitive Reverse Voltage	V <sub>RRM</sub>							
Working Peak Reverse Voltage	V <sub>RWM</sub>	30	35	40	45	50	60	V
DC Blocking Voltage	V <sub>R</sub>							
RMS Reverse Voltage	V <sub>R(RMS)</sub>	21	24.5	28	31.5	35	42	V
Average Rectified Output Current (Note 1)	I <sub>o</sub>	16						A
@ T <sub>C</sub> = 95°C								
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I <sub>FSM</sub>	250						A
Forward Voltage Drop	V <sub>FM</sub>	0.55				0.70		V
@ I <sub>F</sub> = 8.0A, T <sub>C</sub> = 25°C								
Peak Reverse Current	I <sub>RM</sub>	0.5						mA
@ T <sub>C</sub> = 25°C								
at Rated DC Blocking Voltage		50						
@ T <sub>C</sub> = 100°C								
Typical Junction Capacitance (Note 2)	C <sub>j</sub>	700						pF
Typical Thermal Resistance Junction to Case (Note 1)	R <sub>θJC</sub>	3.5						°C/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 heatsink.
  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.

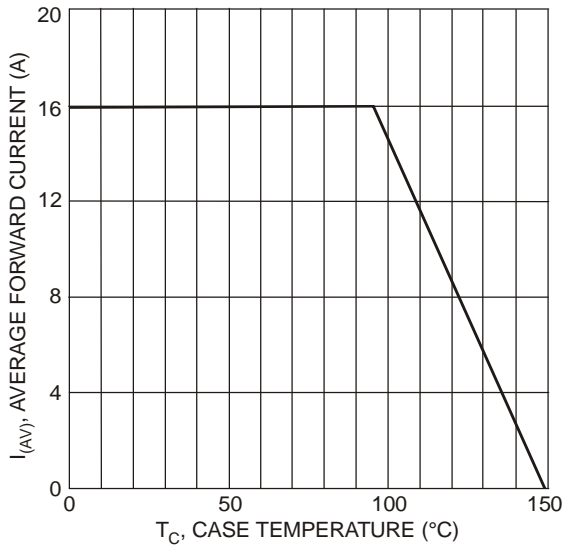


Fig. 1 Forward Current Derating Curve

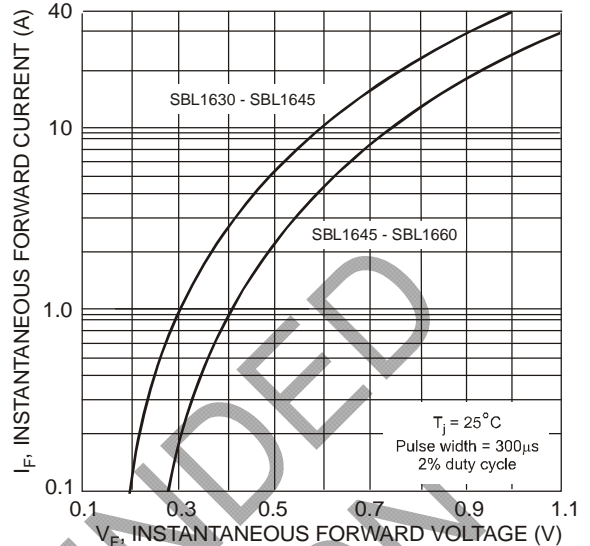


Fig. 2 Typical Forward Voltage

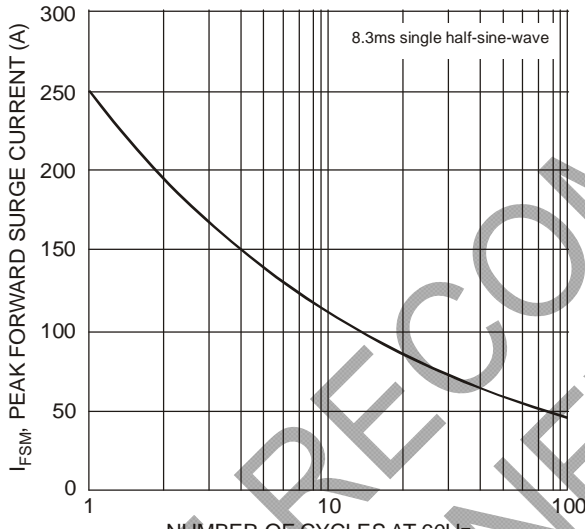


Fig. 3 Max Non-Repetitive Surge Current

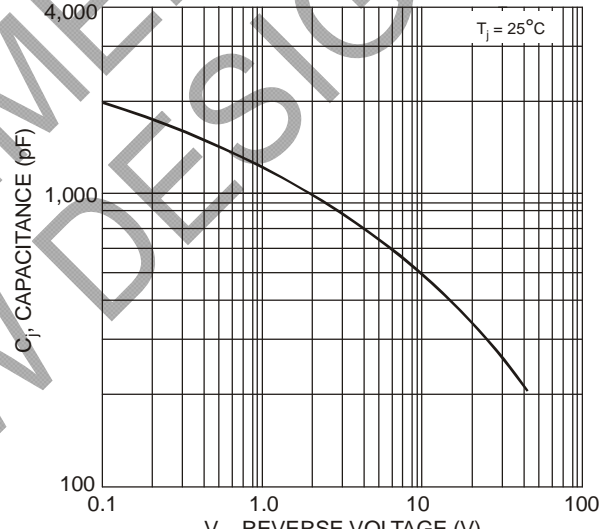


Fig. 4 Typical Junction Capacitance

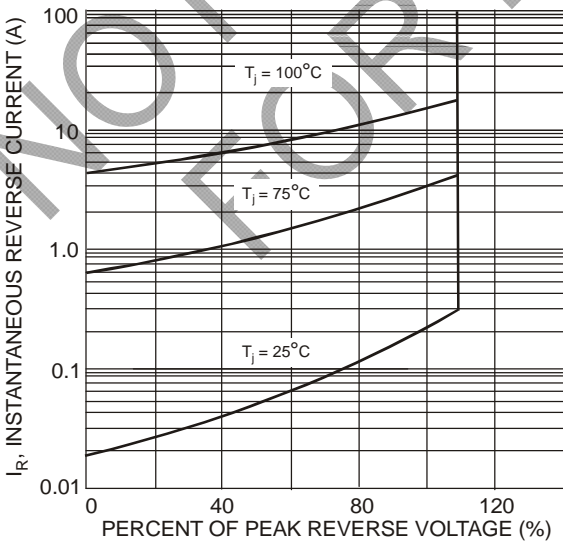


Fig. 5 Typical Reverse Characteristics

## Ordering Information (Note 4)

Device	Packaging	Shipping
SBL16xxCT*	TO-220AB	50/Tube

\* xx = Device type, e.g. SBL1645CT

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

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