



# THE DATASHEET OF SBL1045





# SBL1030 - SBL1060

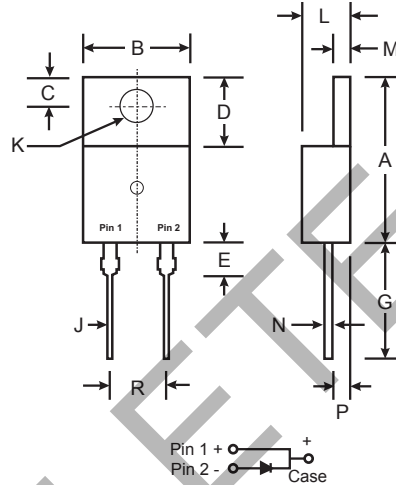
## 10A SCHOTTKY BARRIER RECTIFIER

### 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-220AC
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020C
- Polarity: See Diagram
- Terminals: Finish – Bright Tin. Solderable per MIL-STD-202, Method 208
- Marking: Type Number
- Weight: 2.24 grams (approx.)



TO-220AC		
Dim	Min	Max
A	14.48	15.75
B	10.00	10.40
C	2.54	3.43
D	5.90	6.40
E	2.80	3.93
G	12.70	14.27
J	0.69	0.93
K	3.54	3.78
L	4.07	4.82
M	1.15	1.39
N	0.30	0.50
P	2.04	2.79
R	4.83	5.33
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	SBL 1030	SBL 1035	SBL 1040	SBL 1045	SBL 1050	SBL 1060	Unit
Peak Repetitive Reverse Voltage	V <sub>RRM</sub>	30	35	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	24.5	28	31.5	35	42	V
Average Rectified Output Current @ T <sub>C</sub> = 95°C (Note 1)	I <sub>O</sub>	10						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 Drop @ I <sub>F</sub> = 10A, T <sub>C</sub> = 25°C	V <sub>FM</sub>	0.60				0.75		V
Peak Reverse Current at Rated DC Blocking Voltage @ T <sub>C</sub> = 25°C @ T <sub>C</sub> = 100°C	I <sub>RM</sub>	1.0			50			mA
Typical Junction Capacitance (Note 2)	C <sub>j</sub>	700						pF
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*.

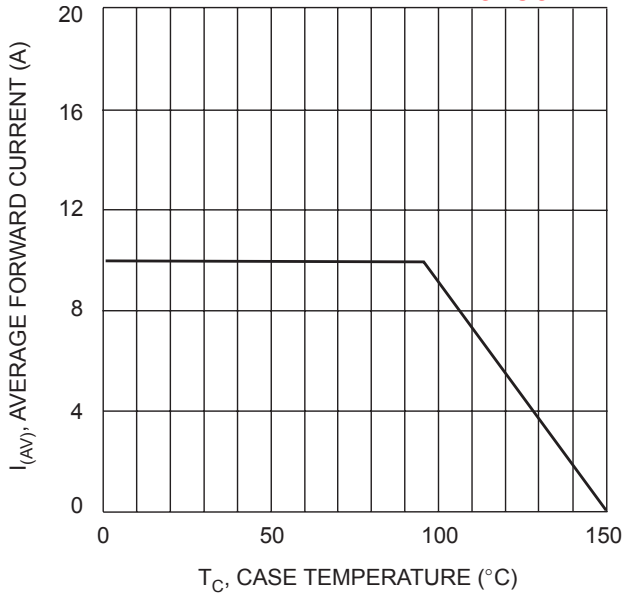


Fig. 1 Forward Current Derating Curve

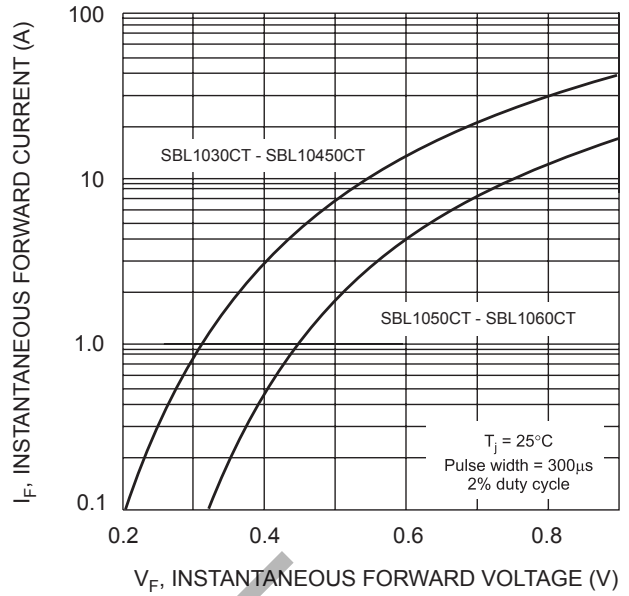


Fig. 2 Typical Forward Characteristics

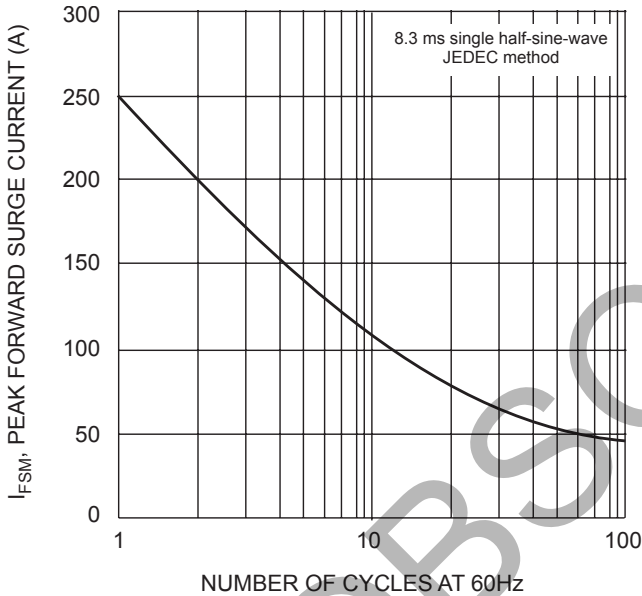


Fig. 3 Max Non-Repetitive Surge Current

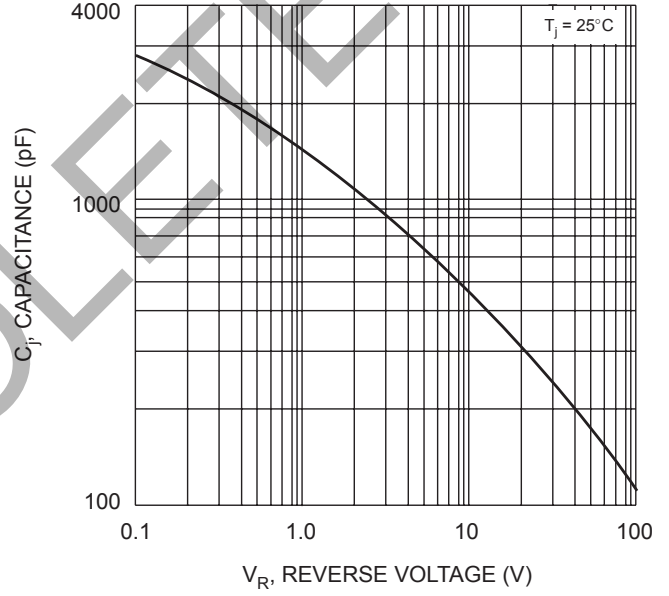


Fig. 4 Typical Junction Capacitance per Element

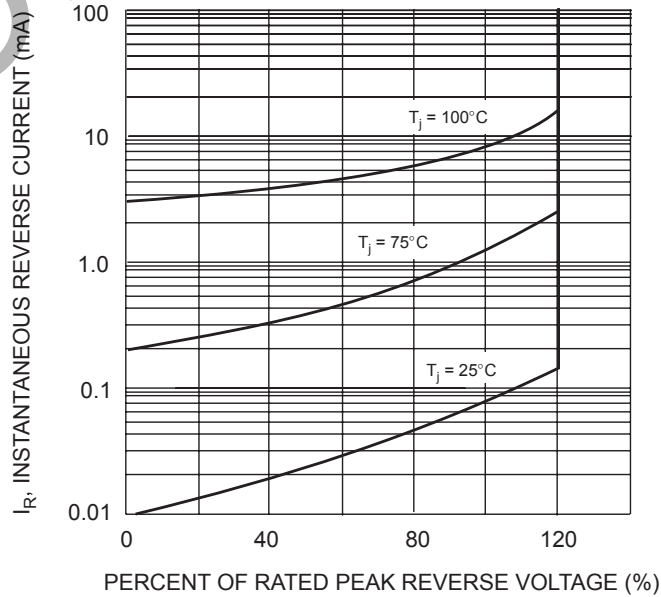


Fig. 5 Typical Reverse Characteristics

**Ordering Information** (Note 4)

Device	Packaging	Shipping
SBL10xx*	TO-220AC	50/Tube

\* xx = Device type, e.g. SBL1045

Notes: 4. For packaging details, visit our website at <http://www.diodes.com/datasheets/ap02008.pdf>.

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