



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

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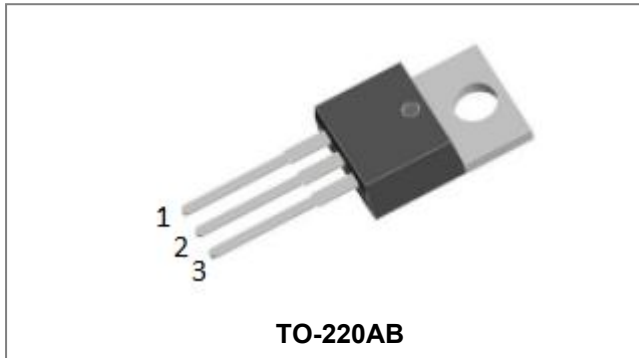
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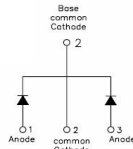
## SBR2045CT SCHOTTKY RECTIFIER



### Features

- 150°C T<sub>J</sub> operation
- Center tap configuration
- Low forward voltage drop
- High purity, high temperature epoxy encapsulation for enhanced
- mechanical strength and moisture resistance
- High frequency operation
- Guard ring for enhanced ruggedness and long term reliability
- This is a Pb – Free Device
- All SMC parts are traceable to the wafer lot
- Additional testing can be offered upon request

### Circuit Diagram



### Applications

- Switching power supply
- Converters
- Free-Wheeling diodes
- Reverse battery protection

### Maximum Ratings:

| Characteristics                                      | Symbol              | Condition                                                    | Max.                          | Units |
|------------------------------------------------------|---------------------|--------------------------------------------------------------|-------------------------------|-------|
| Peak Repetitive Reverse Voltage                      | V <sub>RRM</sub>    | -                                                            | 45                            | V     |
| Working Peak Reverse Voltage                         | V <sub>RWM</sub>    |                                                              |                               |       |
| DC Blocking Voltage                                  | V <sub>R</sub>      |                                                              |                               |       |
| Average Rectified Forward Current                    | I <sub>F (AV)</sub> | 50% duty cycle @T <sub>c</sub> =135°C, rectangular wave form | 10(Per Leg)<br>20(Per Device) | A     |
| Peak One Cycle Non-Repetitive Surge Current(Per Leg) | I <sub>FSM</sub>    | 8.3ms, Half Sine pulse, T <sub>c</sub> = 25 °C               | 150                           | A     |

### Electrical Characteristics:

| Characteristics                 | Symbol           | Condition                                                             | Typ. | Max.   | Units |
|---------------------------------|------------------|-----------------------------------------------------------------------|------|--------|-------|
| Forward Voltage Drop(Per Leg)*  | V <sub>F1</sub>  | @ 10A, Pulse, T <sub>J</sub> = 25 °C                                  | 0.59 | 0.75   | V     |
|                                 | V <sub>F2</sub>  | @ 10A, Pulse, T <sub>J</sub> = 125 °C                                 | 0.55 | 0.65   | V     |
| Reverse Current(Per Leg)*       | I <sub>R1</sub>  | @V <sub>R</sub> = rated V <sub>R</sub> , T <sub>J</sub> = 25 °C       | 0.05 | 1.0    | mA    |
|                                 | I <sub>R2</sub>  | @V <sub>R</sub> = rated V <sub>R</sub> , T <sub>J</sub> = 125 °C      | 6    | 15.0   | mA    |
| Junction Capacitance(Per Leg)   | C <sub>T</sub>   | @V <sub>R</sub> = 5V, T <sub>c</sub> = 25 °C, f <sub>SIG</sub> = 1MHz | 240  | 300    | pF    |
| Repetitive peak reverse current | I <sub>RRM</sub> | tp = 2 μs square F= 1 kHz                                             | -    | 1      | A     |
| Non-Repetitive Avalanche Energy | E <sub>AS</sub>  | T <sub>J</sub> = 25°C, I <sub>AS</sub> = 2 A, L = 1mH                 | -    | 2      | mJ    |
| Series Inductance(Per Leg)      | L <sub>S</sub>   | Measured lead to lead 5 mm from package body                          | 8.0  | -      | nH    |
| Voltage Rate of Change          | dv/dt            | -                                                                     | -    | 10,000 | V/μs  |

\* Pulse width < 300 μs, duty cycle < 2%

**Thermal-Mechanical Specifications:**

| Characteristics                                      | Symbol          | Condition    | Specification | Units |
|------------------------------------------------------|-----------------|--------------|---------------|-------|
| Junction Temperature                                 | $T_J$           | -            | -55 to +150   | °C    |
| Storage Temperature                                  | $T_{stg}$       | -            | -55 to +150   | °C    |
| Typical Thermal Resistance Junction to Case(Per Leg) | $R_{\theta JC}$ | DC operation | 5             | °C/W  |
| Approximate Weight                                   | wt              | -            | 2             | g     |

**Ratings and Characteristics Curves**

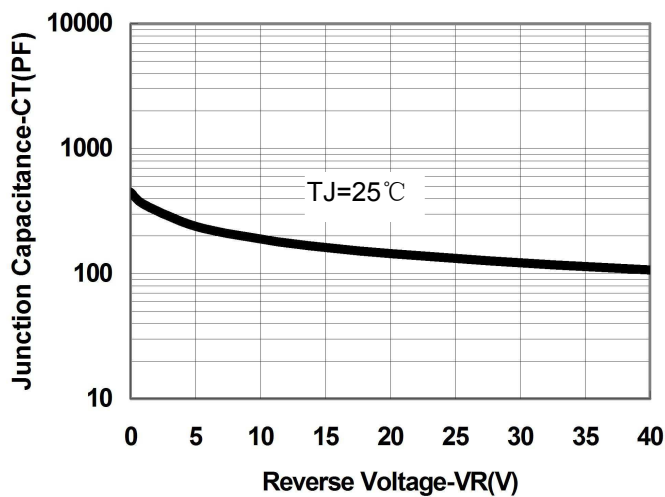


Fig.1-Typical Junction Capacitance

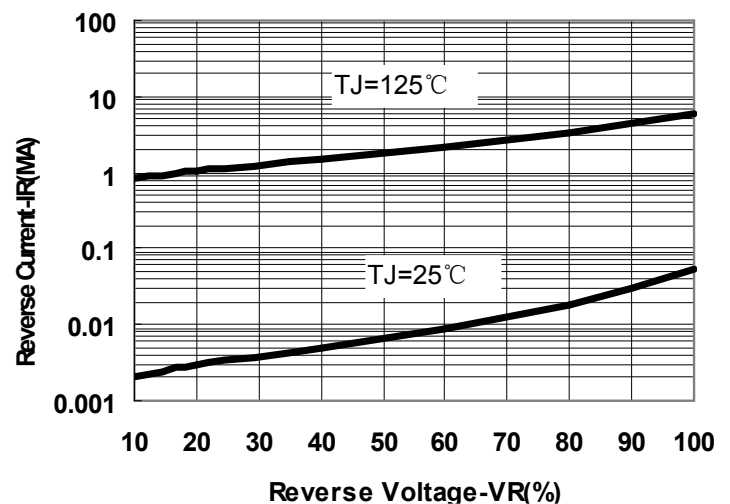


Fig.2-Typical Reverse Characteristics

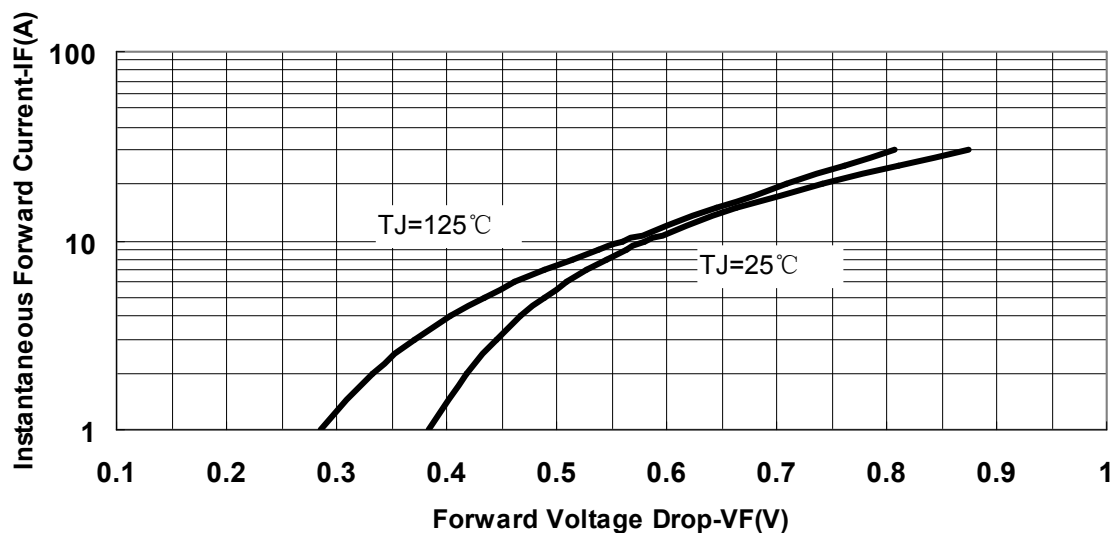
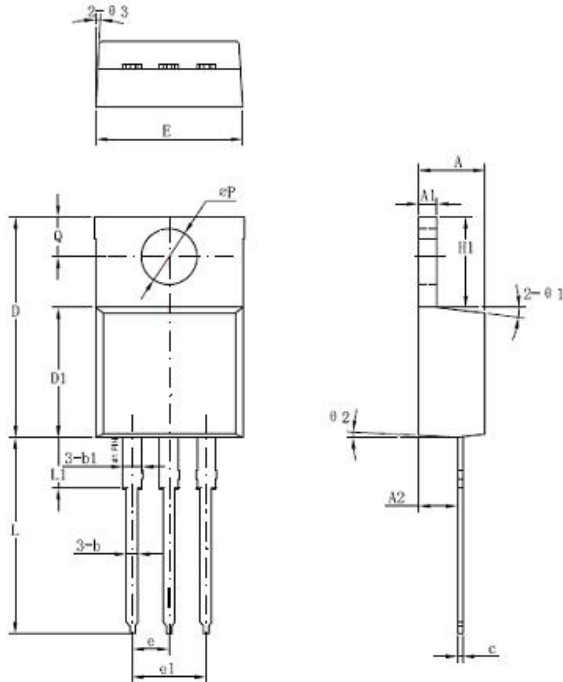


Fig.3-Typical Instantaneous Forward Voltage Characteristics

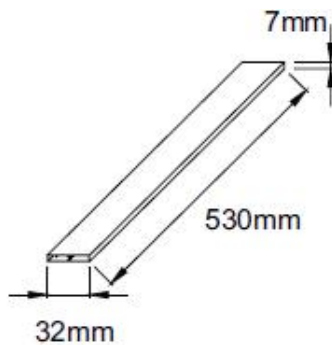


**Mechanical Dimensions TO-220AB**

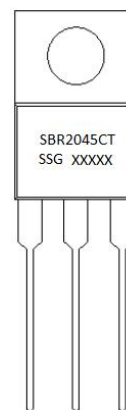


| Symbol | Dimensions in millimeters |         |       |
|--------|---------------------------|---------|-------|
|        | Min                       | Typical | Max   |
| A      | 4.42                      | 4.57    | 4.72  |
| A1     | 1.17                      | 1.27    | 1.37  |
| A2     | 2.52                      | 2.69    | 2.89  |
| b      | 0.71                      | 0.81    | 0.96  |
| b1     | 1.17                      | 1.27    | 1.37  |
| c      | 0.31                      | 0.38    | 0.61  |
| D      | 14.94                     | 15.24   | 15.54 |
| D1     | 8.85                      | 9.00    | 9.15  |
| E      | 10.01                     | 10.16   | 10.31 |
| e      |                           | 2.54    |       |
| e1     | 4.98                      | 5.06    | 5.18  |
| H1     | 6.04                      | 6.24    | 6.44  |
| L      | 12.7                      | 13.56   | 13.80 |
| L1     | 3.56                      | 3.5     | 3.96  |
| ΦP     | 3.74                      | 3.84    | 4.04  |
| Q      | 2.54                      | 2.74    | 2.94  |
| Θ1     |                           | 7°      |       |
| Θ2     |                           | 3°      |       |
| Θ3     |                           | 4°      |       |

**Tube Specification**



**Marking Diagram**



Where XXXXX is YYWWL

SBR = Device Type  
20 = Forward Current (20A)  
45 = Reverse Voltage(45V)  
CT = Configuration  
SSG = SSG  
YY = Year  
WW = Week  
L = Lot Number

**Cautions:** Molding resin  
Epoxy resin UL:94V-0

**Ordering Information**

| Device    | Package            | Shipping     |
|-----------|--------------------|--------------|
| SBR2045CT | TO-220AB (Pb-Free) | 50 pcs/ tube |

For information on tape and reel specifications, including part orientation and tape sizes, please refer to our tape and reel packaging specification.

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