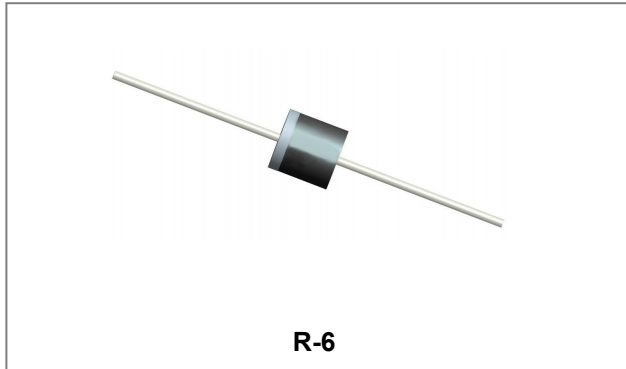


## ST2045AX SCHOTTKY BARRIER RECTIFIER



### Features

- 150°C T<sub>J</sub> operation
- Center tap configuration
- Ultralow 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<br>Working Peak Reverse Voltage<br>DC Blocking Voltage | V <sub>RRM</sub><br>V <sub>RWM</sub><br>V <sub>R</sub> | -                                                            | 45   | V     |
| Average Rectified Forward Current                                                      | I <sub>F (AV)</sub>                                    | 50% duty cycle @T <sub>C</sub> = 75°C, rectangular wave form | 20   | A     |
| Peak One Cycle Non-Repetitive Surge Current                                            | I <sub>FSM</sub>                                       | 8.3 ms, half Sine pulse, T <sub>C</sub> = 25°C               | 250  | A     |

### Electrical Characteristics:

| Characteristics       | Symbol          | Condition                                                               | Typ. | Max. | Units |
|-----------------------|-----------------|-------------------------------------------------------------------------|------|------|-------|
| Forward Voltage Drop* | V <sub>F1</sub> | @ 10A, Pulse, T <sub>J</sub> = 25 °C                                    | 0.42 | -    | V     |
|                       | V <sub>F2</sub> | @ 20A, Pulse, T <sub>J</sub> = 25 °C                                    | 0.48 | 0.58 | V     |
| Reverse Current*      | I <sub>R1</sub> | @V <sub>R</sub> = rated V <sub>R</sub> , T <sub>J</sub> = 25 °C         | 0.02 | 1.2  | mA    |
|                       | I <sub>R2</sub> | @V <sub>R</sub> = rated V <sub>R</sub> , T <sub>J</sub> = 125 °C        | 18   | 35   | mA    |
| Junction Capacitance  | C <sub>T</sub>  | @V <sub>R</sub> = 5V, T <sub>C</sub> = 25 °C<br>f <sub>SIG</sub> = 1MHz | 1700 | -    | pF    |

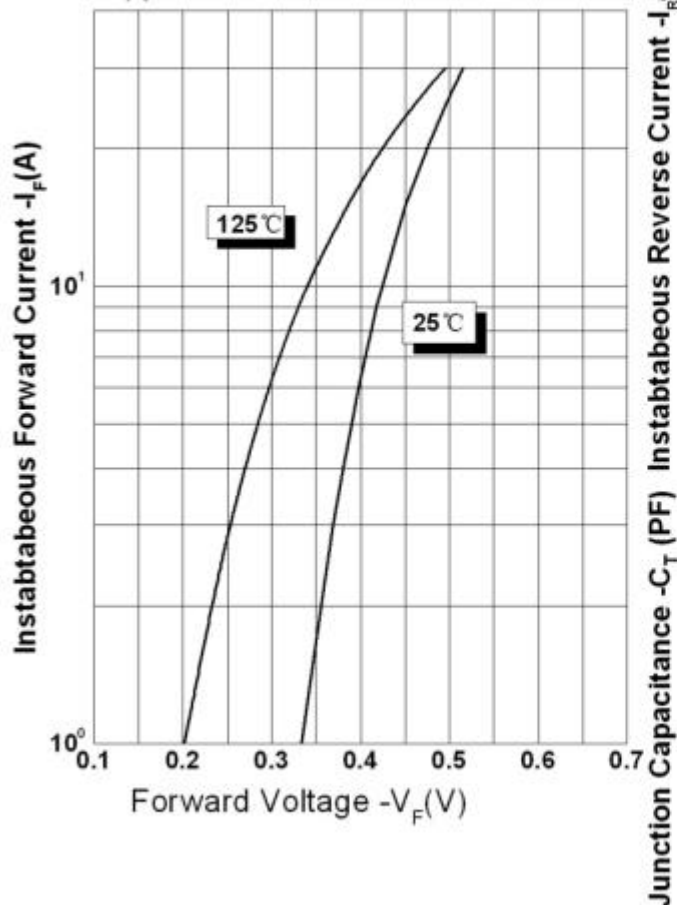
\* Pulse width < 300 μs, duty cycle < 2%

**Thermal-Mechanical Specifications:**

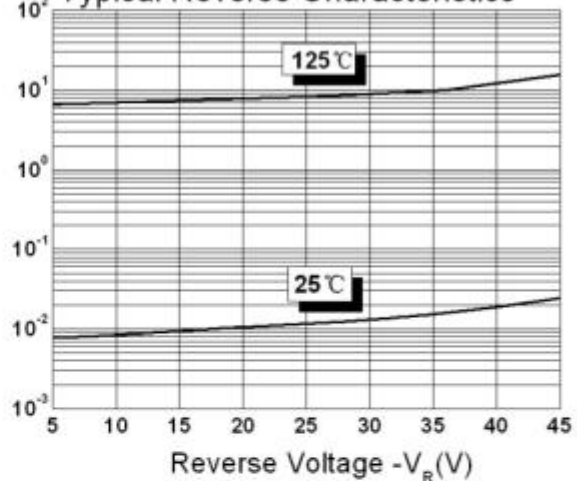
| Characteristics                                | Symbol          | Condition    | Specification | Units |
|------------------------------------------------|-----------------|--------------|---------------|-------|
| Junction Temperature                           | $T_J$           | -            | -55 to +150   | °C    |
| Storage Temperature                            | $T_{stg}$       | -            | -55 to +150   | °C    |
| Typical Thermal Resistance Junction to Ambient | $R_{\theta JA}$ | DC operation | 55            | °C/W  |
| Approximate Weight                             | wt              | -            | 2.24          | g     |
| Case Style                                     | R-6             |              |               |       |

**Ratings and Characteristics Curves**

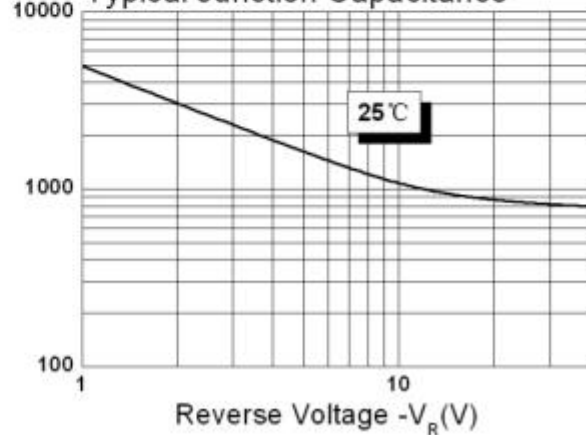
**Figure 1**  
Typical Forward Characteristics



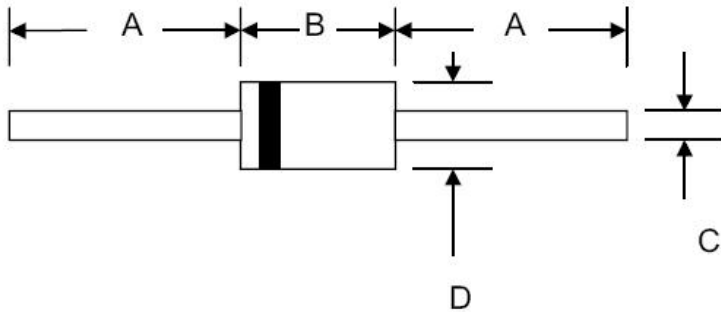
**Figure 2**  
Typical Reverse Characteristics



**Figure 3**  
Typical Junction Capacitance



## Mechanical Dimensions R-6



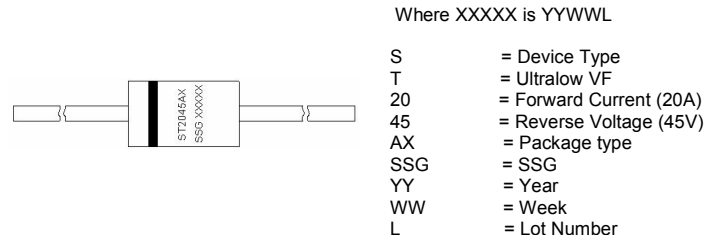
| SYMBOL | Millimeters |      | Inches |       |
|--------|-------------|------|--------|-------|
|        | Min.        | Max. | Min.   | Max.  |
| A      | 25.4        | -    | 1.000  | -     |
| B      | 8.60        | 9.10 | 0.340  | 0.360 |
| C      | 1.2         | 1.3  | 0.048  | 0.052 |
| D      | 8.60        | 9.10 | 0.340  | 0.360 |

## Ordering Information

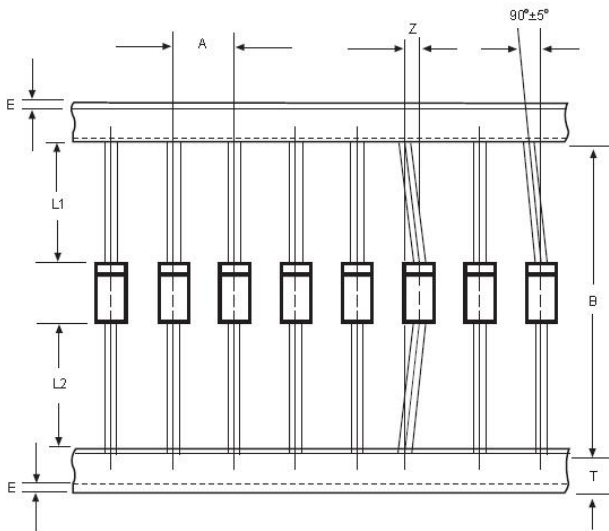
| Device   | Package      | Shipping      |
|----------|--------------|---------------|
| ST2045AX | R-6(Pb-Free) | 500pcs / reel |

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

## Marking Diagram



## Carrier Tape Specification R-6



| SYMBOL  | Millimeters |       |
|---------|-------------|-------|
|         | Min.        | Max.  |
| A       | 9.50        | 10.50 |
| B       | 50.9        | 53.9  |
| Z       | -           | 1.20  |
| T       | 5.60        | 6.40  |
| E       | -           | 0.80  |
| IL1-L2I | -           | 1.0   |

**Technical Data**  
**Data Sheet N1049, Rev. B**



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