

### SCHOTTKY BARRIER RECTIFIERS

#### FEATURES

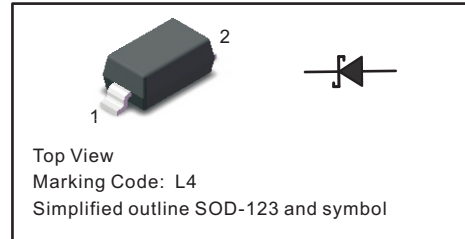
- Metal silicon junction, majority carrier conduction
- Guarding for overvoltage protection
- Low power loss, high efficiency
- High current capability
- low forward voltage drop
- High surge capability
- For use in low voltage, high frequency inverters, free wheeling, and polarity protection applications

#### MECHANICAL DATA

- Case: SOD-123
- Terminals: Solderable per MIL-STD-750, Method 2026
- Approx. Weight: 16mg/0.00056oz

#### PINNING

| PIN | DESCRIPTION |
|-----|-------------|
| 1   | Cathode     |
| 2   | Anode       |



#### Maximum Ratings and Electrical characteristics

Ratings at 25 °C ambient temperature unless otherwise specified.

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| Parameter                                                                                         | Symbols         | BAT54W                                                | Units                |
|---------------------------------------------------------------------------------------------------|-----------------|-------------------------------------------------------|----------------------|
| Peak Repetitive Reverse Voltage                                                                   | $V_{RRM}$       | 30                                                    | V                    |
| Maximum Average Forward Current at $T_a=25^{\circ}\text{C}$                                       | $I_O$           | 0.2                                                   | A                    |
| Peak Forward Surge Current, 8.3ms single half sine-wave superimposed on rated load (JEDEC method) | $I_{FSM}$       | 13                                                    | A                    |
| Maximum Instantaneous Forward Voltage                                                             | $V_F$           | 0.32 @ $I_F=0.001\text{A}$<br>1.0 @ $I_F=0.1\text{A}$ | V                    |
| Maximum DC Reverse Current at Rated DC Blocking Voltage                                           | $I_R$           | 2.0 @ $V_R=25\text{V}$                                | $\mu\text{A}$        |
| Typical Thermal Resistance                                                                        | $R_{\theta JA}$ | 435                                                   | $^{\circ}\text{C/W}$ |
| Typical Junction Capacitance at $V_R=0\text{V}$ , $f=1\text{MHz}$                                 | $C_j$           | 60                                                    | pF                   |
| Storage and Operating Junction Temperature Range                                                  | $T_j, T_{stg}$  | -55 ~ +125                                            | $^{\circ}\text{C}$   |

NOTES:(1)P.C.B. mounted with 5\*5mm copper pad areas.

Fig.1 Forward Current Derating Curve

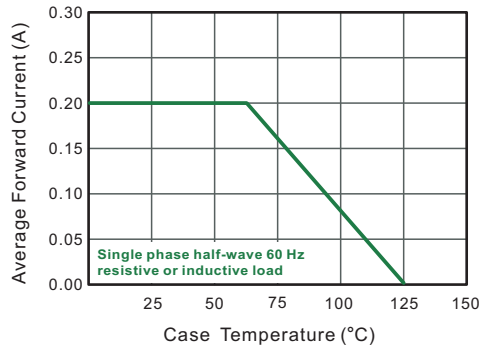


Fig.2 Typical Reverse Characteristics

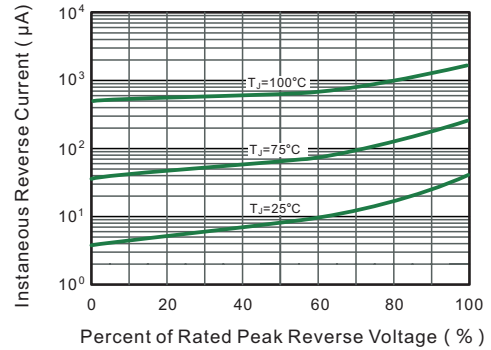


Fig.4 Typical Forward Characteristics

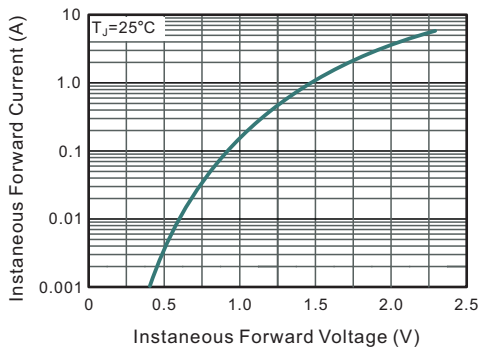


Fig.4 Typical Junction Capacitance

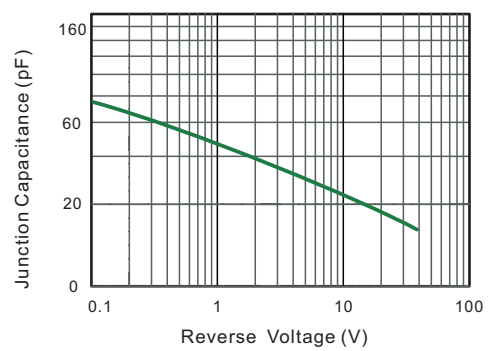


Fig.5 Maximum Non-Repetitive Peak Forward Surge Current

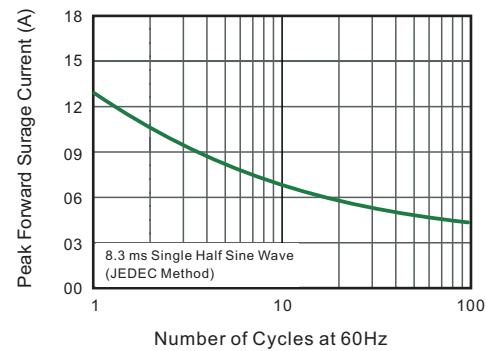
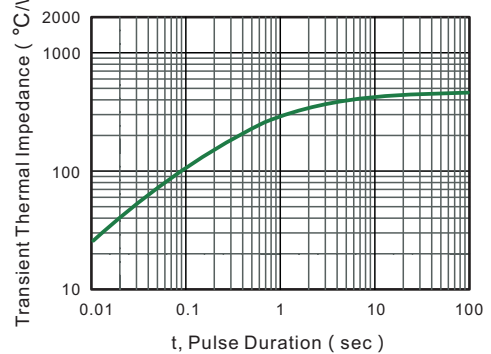
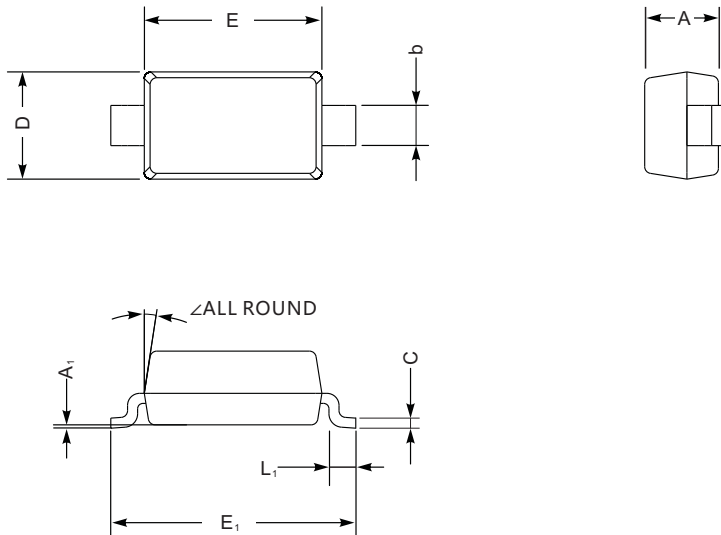


Fig.6 Typical Transient Thermal Impedance



PACKAGE OUTLINE  
Plastic surface mounted package; 2 leads

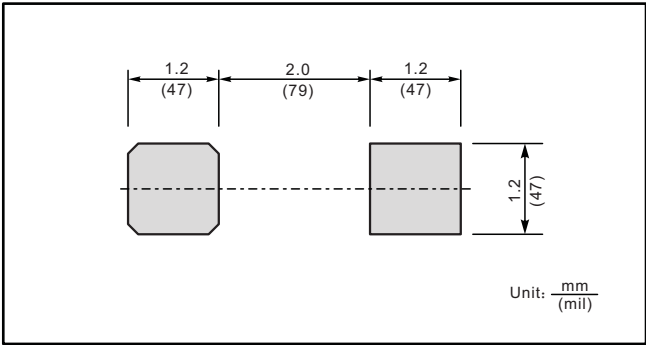
SOD-123



SOD-123 mechanical data

| UNIT |     | A   | C    | D   | E   | E <sub>1</sub> | L <sub>1</sub> | b   | A <sub>1</sub> | ∠  |
|------|-----|-----|------|-----|-----|----------------|----------------|-----|----------------|----|
| mm   | max | 1.3 | 0.22 | 1.8 | 2.8 | 3.9            | 0.45           | 0.7 | 0.2            | 9° |
|      | min | 0.9 | 0.09 | 1.5 | 2.5 | 3.6            | 0.25           | 0.5 | —              |    |
| mil  | max | 51  | 8.7  | 71  | 110 | 154            | 18             | 28  | 8              |    |
|      | min | 35  | 3.5  | 59  | 98  | 142            | 10             | 20  | —              |    |

The recommended mounting pad size



Marking

| Type number | Marking code |
|-------------|--------------|
| BAT54W      | L4           |