



BAT46J / BAT46W BAT46AW / BAT46CW / BAT46SW

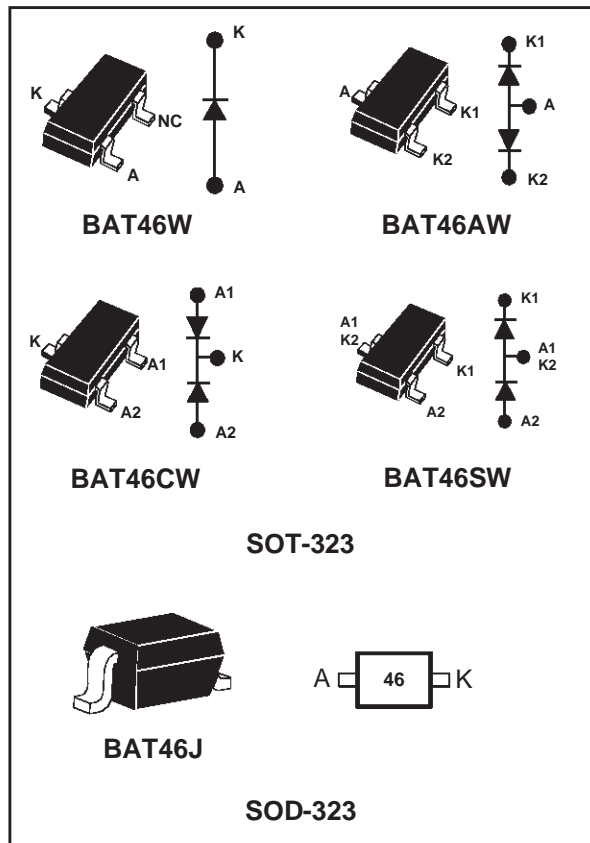
SMALL SIGNAL SCHOTTKY DIODE

FEATURES AND BENEFITS

- VERY SMALL CONDUCTION LOSSES
- NEGLIGIBLE SWITCHING LOSSES
- LOW FORWARD VOLTAGE DROP
- SURFACE MOUNT DEVICE

DESCRIPTION

High voltage schottky rectifier suited for SLIC protection during the card insertion operation.



ABSOLUTE RATINGS (limiting values)

| Symbol | Parameter | | Value | Unit |
|-----------|--|---------|--------------|------------------|
| V_{RRM} | Repetitive peak reverse voltage | | 100 | V |
| I_F | Continuous forward current | | 150 | mA |
| P_{tot} | Power dissipation (note 1) $T_{amb} = 25^\circ\text{C}$ | SOT-323 | 230 | mW |
| | | SOT-323 | | |
| T_{stg} | Maximum storage temperature range | | - 65 to +150 | $^\circ\text{C}$ |
| T_j | Maximum operating junction temperature * | | 150 | $^\circ\text{C}$ |
| T_L | Maximum temperature for soldering during 10s | | 260 | $^\circ\text{C}$ |

Note 1: for double diodes, P_{tot} is the total dissipation of the both diodes.

* : $\frac{dP_{tot}}{dT_j} < \frac{1}{R_{th(j-a)}}$ thermal runaway condition for a diode on its own heatsink

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THERMAL RESISTANCE

| Symbol | Parameters | | Value | Unit | |
|----------------------|-------------------------|--|---------|------|------|
| R _{th(j-a)} | Junction to ambient (*) | | SOD-323 | 550 | °C/W |
| | | | SOT-323 | | °C/W |

(*) Mounted on epoxy board, with recommended pad layout.

STATIC ELECTRICAL CHARACTERISTICS

| Symbol | Test conditions | | Min. | Typ. | Max. | Unit |
|-------------------|------------------------|-------------------------|------|------|------|------|
| V _{BR} | T _j = 25 °C | I _R = 100 μA | 100 | | | V |
| V _F * | T _j = 25 °C | I _F = 0.1 mA | | | 0.25 | V |
| | T _j = 25 °C | I _F = 10 mA | | | 0.45 | |
| | T _j = 25 °C | I _F = 250 mA | | | 1 | |
| I _R ** | T _j = 25 °C | V _R = 1.5 V | | | 0.5 | μA |
| | T _j = 60 °C | | | | 5 | |
| | T _j = 25 °C | V _R = 10 V | | | 0.8 | |
| | T _j = 60 °C | | | | 7.5 | |
| | T _j = 25 °C | V _R = 50 V | | | 2 | |
| | T _j = 60 °C | | | | 15 | |
| | T _j = 25 °C | V _R = 75 V | | | 5 | |
| | T _j = 60 °C | | | | 20 | |

Pulse test : * tp = 380 μs δ < 2%

** tp = 5ms, δ < 2%

DYNAMIC CHARACTERISTICS

| Symbol | Test conditions | | | Min. | Typ. | Max. | Unit |
|--------|------------------------|----------------------|----------|------|------|------|------|
| C | T _j = 25 °C | V _R = 0 V | F = 1MHz | | 10 | | pF |
| | T _j = 25 °C | V _R = 1 V | | | 6 | | |

Fig. 1: Forward current versus forward voltage at different temperatures (typical values).

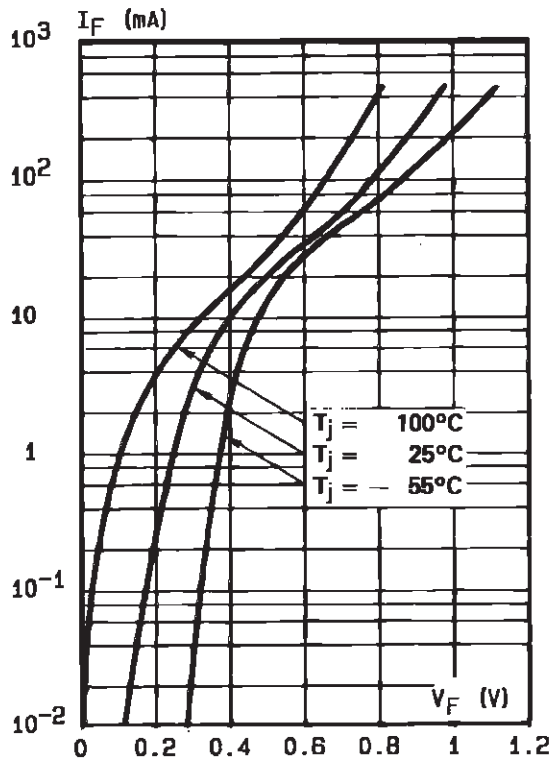


Fig. 2: Forward current versus forward voltage (typical values).

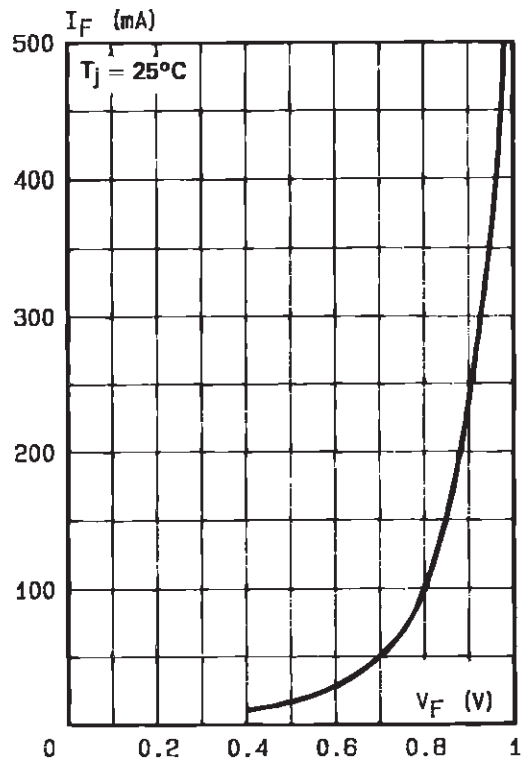


Fig. 3: Reverse current versus junction temperature (typical values).

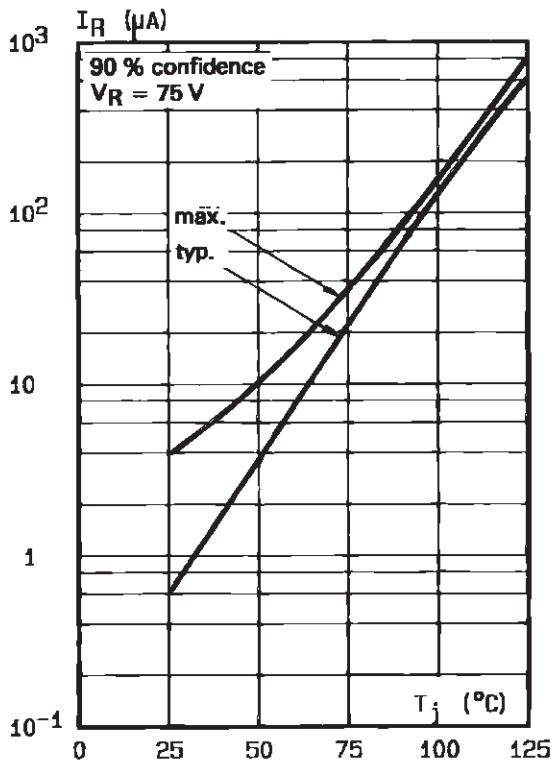
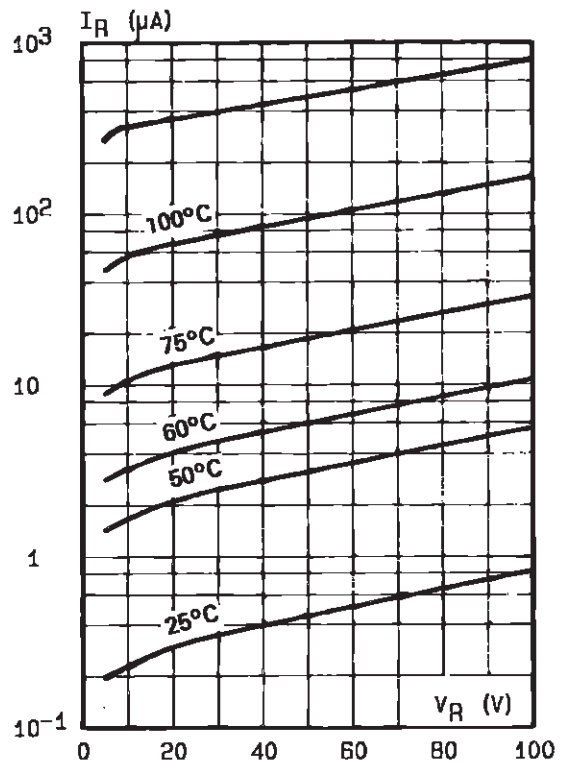
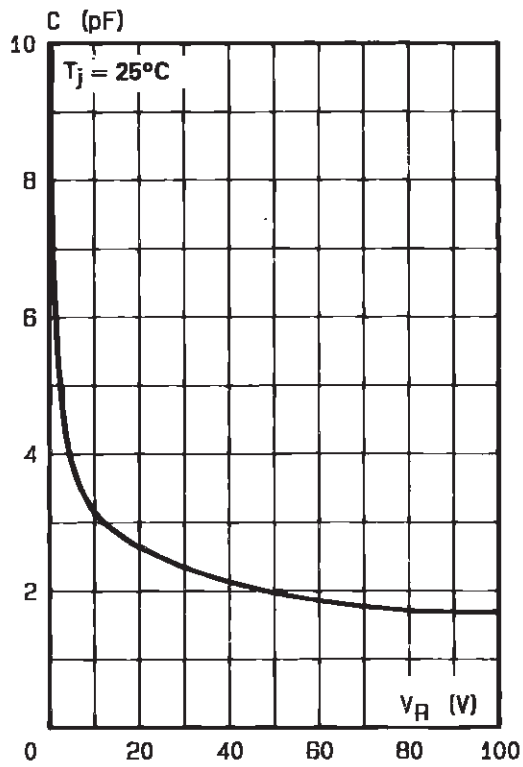


Fig. 4: Reverse current versus continuous reverse voltage (typical values).

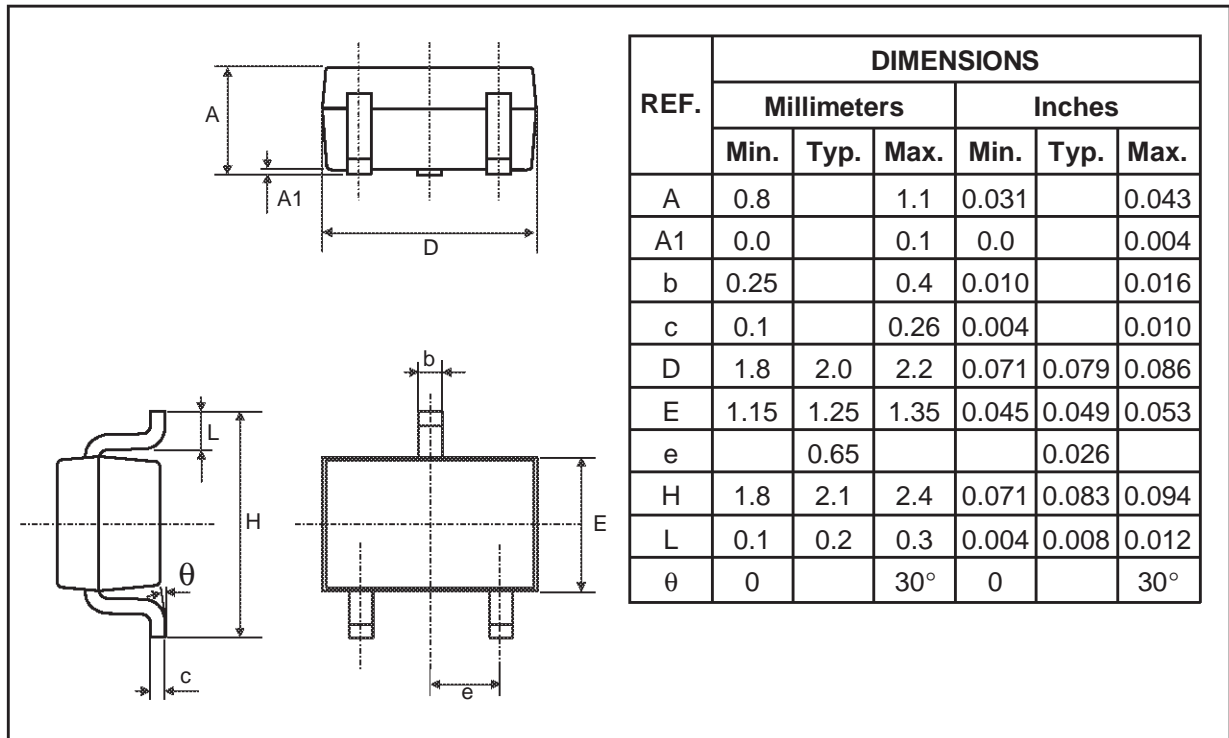


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Fig. 5: Capacitance C versus reverse applied voltage V_R (typical values).

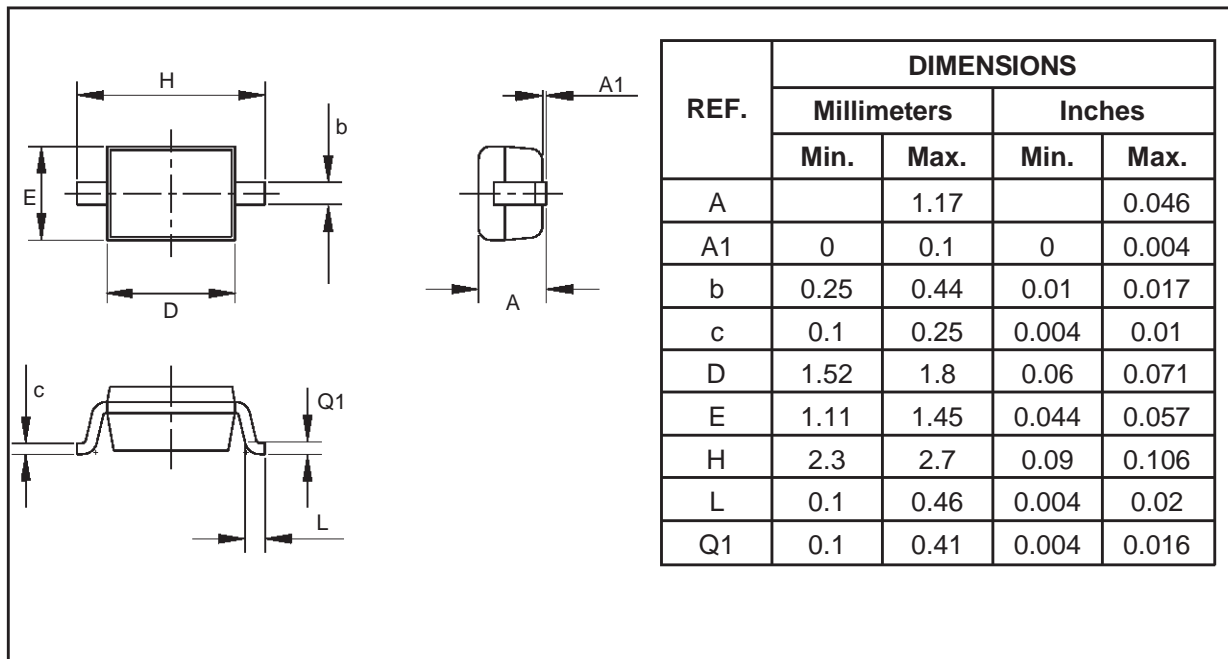


PACKAGE MECHANICAL DATA
SOT-323



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PACKAGE MECHANICAL DATA
SOD-323



| Ordering type | Marking | Package | Weight | Base qty | Delivery mode |
|---------------|---------|---------|--------|----------|---------------|
| BAT46W | D46 | SOT-323 | 0.006g | 3000 | Tape & reel |
| BAT46AW | DB6 | SOT-323 | 0.006g | 3000 | Tape & reel |
| BAT46CW | TBD | SOT-323 | 0.006g | 3000 | Tape & reel |
| BAT46SW | TBD | SOT-323 | 0.006g | 3000 | Tape & reel |
| BAT46J | 46 | SOD-323 | 0.005g | 3000 | Tape & reel |

■ Epoxy meets UL94,V0

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