

BAT54WS

200mA Surface Mount Small Signal Schottky Diodes-30V

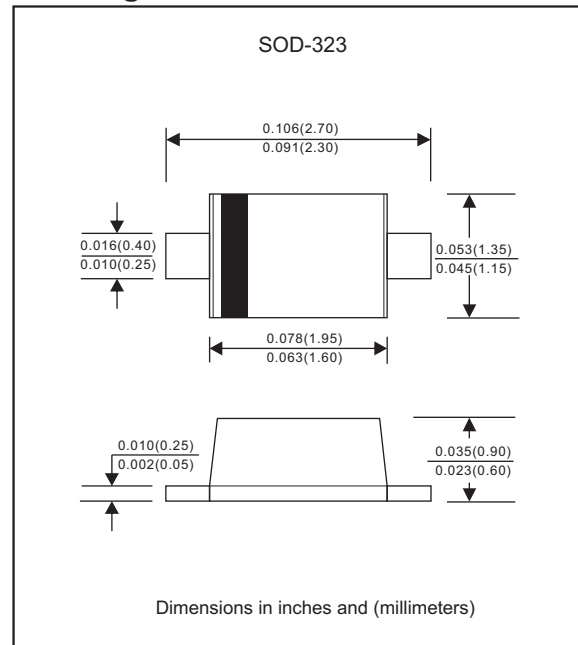
Features

- Low current rectification and high speed switching
- Small surface mount type
- Up to 200mA current capability
- Low forward voltage drop (0.35V typ. @ $I_F=10\text{mA}$)
- Silicon epitaxial planar chip, metal silicon junction
- High speed ($t_{rr} < 5\text{ ns}$)
- Lead-free parts meet RoHS requirements
- Compliant to Halogen-free

Mechanical data

- Epoxy:UL94-V0 rated flame retardant
- Case : Molded plastic, SOD-323
- Terminals : Solder plated, solderable per MIL-STD-750, Method 2026
- Polarity : Indicated by cathode band
- Mounting Position : Any

Package outline



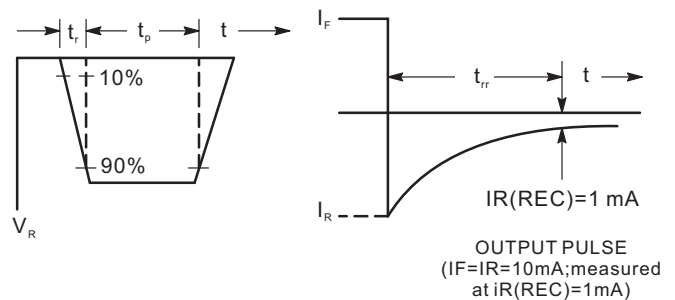
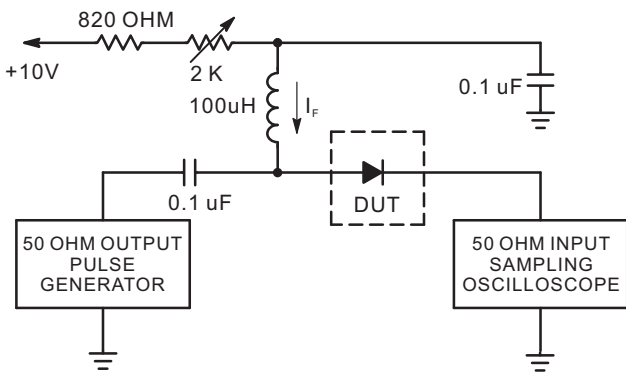
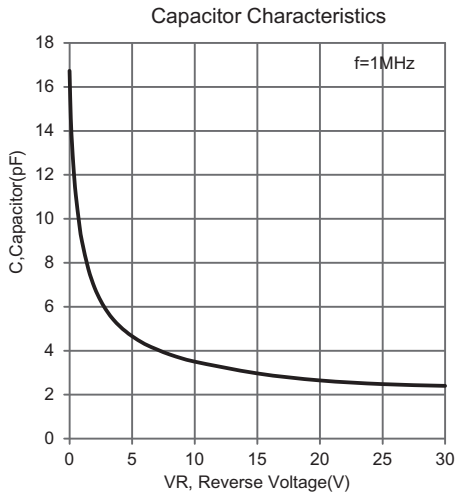
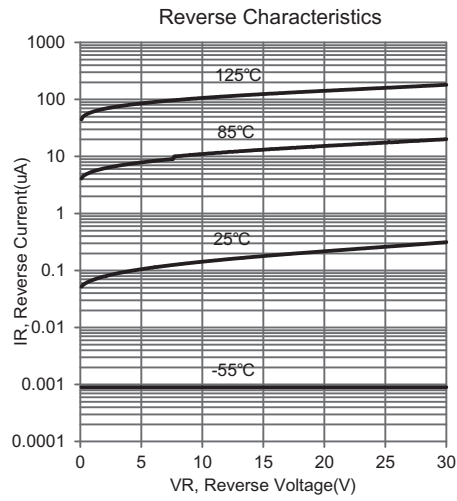
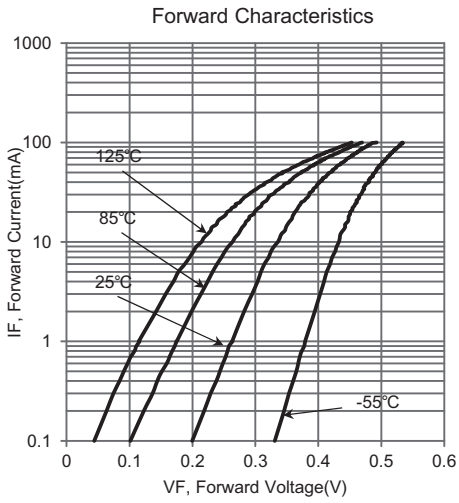
Maximum ratings (AT $T_A=25^\circ\text{C}$ unless otherwise noted)

| PARAMETER | CONDITIONS | Symbol | MIN. | TYP. | MAX. | UNIT |
|--------------------------------------|---|-----------------|------|------|------|--------------------|
| Repetitive peak reverse voltage | | V_{RRM} | | | 30 | V |
| Reverse voltage | | V_R | | | 30 | V |
| Repetitive peak forward current | | I_{FRM} | | | 300 | mA |
| Non-repetitive peak forward current | $t < 1.0\text{ s}$ | I_{FSM} | | | 600 | mA |
| Forward current | | I_F | | | 200 | mA |
| Power dissipation | Mounted on FR-5 board at $T_A=25^\circ\text{C}$ | P_D | | | 200 | mW |
| Thermal resistance | Junction to ambient | $R_{\theta JA}$ | | 635 | | $^\circ\text{C/W}$ |
| Operating junction temperature range | | T_J | -55 | | +125 | $^\circ\text{C}$ |
| Storage temperature range | | T_{STG} | -55 | | +125 | $^\circ\text{C}$ |

Electrical characteristics (AT $T_A=25^\circ\text{C}$ unless otherwise noted)

| PARAMETER | CONDITIONS | Symbol | MIN. | TYP. | MAX. | UNIT |
|-----------------------|---|----------|------|-------|-------|---------------|
| Forward voltage | $I_F = 0.1\text{ mA}$ | V_F | | 0.220 | 0.240 | V |
| | $I_F = 1\text{ mA}$ | V_F | | 0.290 | 0.320 | V |
| | $I_F = 10\text{ mA}$ | V_F | | 0.350 | 0.400 | V |
| | $I_F = 30\text{ mA}$ | V_F | | 0.410 | 0.500 | V |
| | $I_F = 100\text{ mA}$ | V_F | | 0.520 | 1.000 | V |
| Reverse current | $V_R = 25\text{ V}$ | I_R | | 0.5 | 2.0 | μA |
| Total capacitance | $V_R = 1\text{ V}$, $f = 1\text{ MHz}$ | C_T | | | 10.0 | pF |
| Reverse recovery time | $I_F = I_R = 10\text{ mAdc}$, $I_{R(REC)} = 1.0\text{ mAdc}$ | t_{rr} | | | 5.0 | ns |



Rating and characteristic curves for each diode (BAT54WS)



- Notes : 1. A2.0 Kohm variable resistor adjusted for a forward Current (IF) of 10mA.
2. Input pulse is adjusted so IR(peak) is equal to 10 mA.
3. tp >> trr.

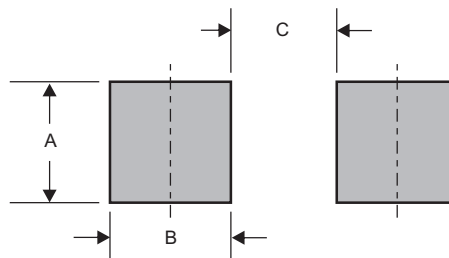
Recovery Time Equivalent Test Circuit

BAT54WS**Pinning information**

| Pin | Simplified outline | Symbol |
|----------------------------|---|---|
| Pin1 cathode Pin2 anode |  |  |

Marking

| Type number | Marking code |
|-------------|--------------|
| BAT54WS | C8 |

Suggested solder pad layout

Dimensions in inches and (millimeters)

| PACKAGE | A | B | C |
|---------|--------------|--------------|--------------|
| SOD-323 | 0.032 (0.82) | 0.022 (0.56) | 0.069 (1.75) |

Reel packing

| PACKAGE | REEL SIZE | REEL (pcs) | COMPONENT SPACING (m/m) | BOX (pcs) | INNER BOX (m/m) | REEL DIA, (m/m) | CARTON SIZE (m/m) | CARTON (pcs) | APPROX. GROSS WEIGHT (kg) |
|---------|-----------|------------|-------------------------|-----------|-----------------|-----------------|-------------------|--------------|---------------------------|
| SOD-323 | 7" | 3000 | 4.0 | 30,000 | 195*195*150 | 178 | 460*400*420 | 360,000 | 14.8 |

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