

A suffix of "-C" specifies halogen & lead-free

FEATURES

- RoHS Compliant Product
- High Current Capability
- Extremely Low Thermal Resistance
- For Surface Mount Application
- Higher Temp Soldering : 250°C for 10 Seconds at Terminals
- Low Forward Voltage

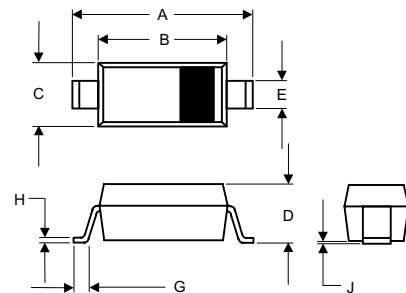
MECHANICAL DATA

- Case: Molded Plastic
- Epoxy: UL 94V-0 Rate Flame Retardant
- Lead: Axial Leads, Solderable per MIL-STD-202, Method208Guaranteed
- Weight: approx. 0.01g
- Mounting Position: Any

Marking Vodes: BAT42W=S7
BAT43W=S8

PACKAGE DIMENSIONS

SOD-123
PLASTIC PACKAGE



| DIM | MILLMETERS | | INCHES | |
|-----|------------|-------|--------|-------|
| | MIN | MAX | MIN | MAX |
| A | 3.55 | 3.85 | 0.140 | 0.152 |
| B | 2.55 | 2.85 | 0.100 | 0.112 |
| C | 1.40 | 1.80 | 0.550 | 0.071 |
| D | ----- | 1.35 | ----- | 0.053 |
| E | 0.30 | 0.78 | 0.120 | 0.031 |
| G | 0.15 | ----- | 0.006 | ----- |
| H | ----- | 0.25 | ----- | 0.001 |
| J | ----- | 0.15 | ----- | 0.006 |

Maximum Ratings @ T_A = 25°C unless otherwise specified

| Characteristic | Symbol | BAT42W / BAT43W | Unit |
|--|--|-----------------|------|
| Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage | V _{RRM} V _{RWM} V _R | 30 | V |
| RMS Reverse Voltage | V _{R(RMS)} | 21 | V |
| Forward Continuous Current (Note 1) | I _{FM} | 200 | mA |
| Repetitive Peak Forward Current (Note 1) @ t < 1.0s | I _{FRM} | 500 | mA |
| Non-Repetitive Peak Forward Surge Current @ t < 10ms | I _{FSM} | 4.0 | A |
| Power Dissipation | P _d | 200 | mW |
| Thermal Resistance Junction to Ambient Air (Note 1) | R _{θJA} | 500 | °C/W |
| Operating and Storage Temperature Range | T _j , T _{STG} | -55 to +125 | °C |

Electrical Characteristics @ T_A = 25°C unless otherwise specified

| Characteristic | Symbol | Min | Max | Unit | Test Condition |
|------------------------------------|--------------------|-----|-------------------------------------|----------|---|
| Reverse Breakdown Voltage (Note 2) | V _{(BR)R} | 30 | — | V | I _R = 100μA |
| Forward Voltage Drop (Note 2) | V _{FM} | — | 1.0 0.40 0.65 0.33 0.45 | V | I _F = 200mA I _F = 10mA I _F = 50mA I _F = 2.0mA I _F = 15mA |
| Peak Reverse Current (Note 2) | I _{RM} | — | 500 100 | nA μA | V _R = 25V V _R = 25V, T _j = 100°C |
| Total Capacitance | C _T | — | 10 | pF | V _R = 1.0V, f = 1.0MHz |
| Reverse Recovery Time | t _{rr} | — | 5.0 | ns | I _F = I _R = 10mA, I _{rr} = 0.1 x I _R , R _L = 100Ω |
| Rectification Efficiency | η _V | 80 | — | % | R _L = 15Ω, C _L = 300pF, f = 45MHz, V _{RF} = 2.0V |

- Notes: 1. Part mounted on FR-4 board with recommended pad layout.
2. Short duration pulse test used to minimize self-heating effect.

Ratings and Characteristic Curves ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Fig. 1 – Admissible Power Dissipation vs. Ambient Temperature

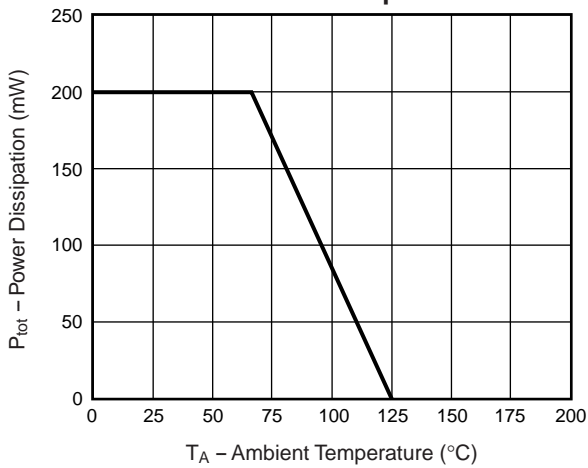


Fig. 2 – Typical Reverse Characteristics

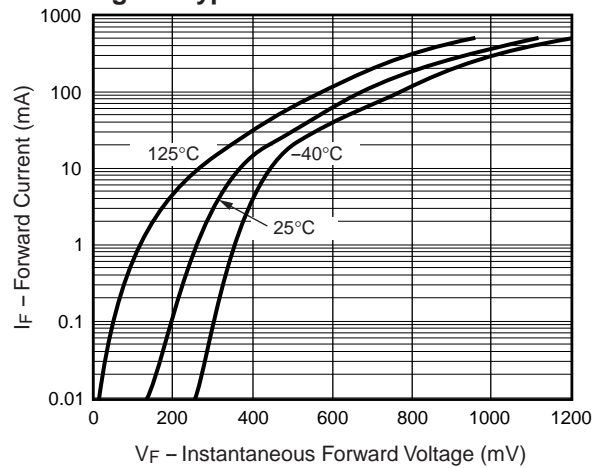


Fig. 3 – Typical Reverse Characteristics

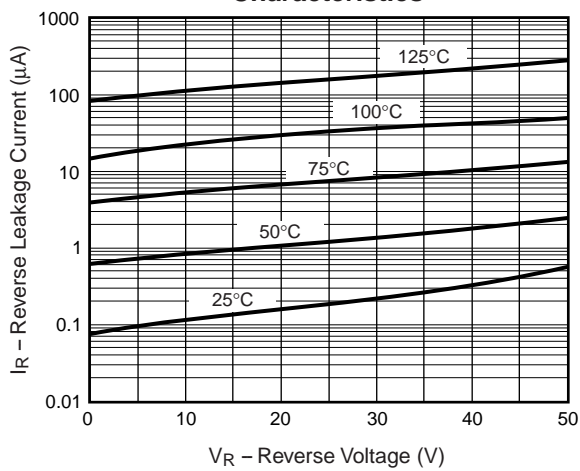


Fig. 4 – Typical Capacitance vs. Reverse Applied Voltage

