

200mA, 30V Schottky Barrier Diode

FEATURES

- Fast switching speed
- Low forward voltage
- Surface mount device type
- Ultra high-speed switching
- Voltage clamping
- Protection circuits
- High temperature soldering guaranteed: 260°C/10s
- Moisture sensitivity level: level 1, per J-STD-020
- RoHS Compliant
- Halogen-free according to IEC 61249-2-21

| KEY PARAMETERS | | |
|----------------|---------|------|
| PARAMETER | VALUE | UNIT |
| I_F | 200 | mA |
| V_{RRM} | 30 | V |
| I_{FSM} | 600 | mA |
| $T_{J\ MAX}$ | 125 | °C |
| Package | SOT-323 | |



APPLICATIONS

- Voltage clamping
- Ultra high-speed switching
- Reverse polarity protection



SOT-323

MECHANICAL DATA

- Case: SOT-323
- Weight: 5.00mg (approximately)

ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise noted)

| PARAMETER | SYMBOL | VALUE | UNIT |
|--|-----------|-------------|------|
| Repetitive peak reverse voltage | V_{RRM} | 30 | V |
| Forward current | I_F | 200 | mA |
| Power dissipation | P_D | 200 | mW |
| Peak Forward Surge Current ($t_p = 10\text{ms}$) | I_{FSM} | 600 | mA |
| Repetitive Peak Forward Current | I_{FRM} | 300 | mA |
| Junction temperature | T_J | 125 | °C |
| Storage temperature | T_{STG} | -55 to +150 | °C |

| THERMAL PERFORMANCE | | | |
|--|-----------------|------------|-------------|
| PARAMETER | SYMBOL | TYP | UNIT |
| Junction-to-ambient thermal resistance | $R_{\theta JA}$ | 625 | °C/W |

| ELECTRICAL SPECIFICATIONS ($T_A = 25^\circ\text{C}$ unless otherwise noted) | | | | | |
|---|---|---------------|------------|------------|---------------|
| PARAMETER | CONDITIONS | SYMBOL | TYP | MAX | UNIT |
| Forward Voltage | $I_F = 0.1\text{mA}$ | V_F | - | 240 | mV |
| | $I_F = 1.0\text{mA}$ | | - | 320 | mV |
| | $I_F = 10\text{mA}$ | | - | 400 | mV |
| | $I_F = 30\text{mA}$ | | - | 500 | mV |
| | $I_F = 100\text{mA}$ | | - | 1000 | mV |
| Reverse current | $V_R = 25\text{V}$ | I_R | - | 2 | μA |
| Junction capacitance | $V_R = 1\text{V}$, $f = 1.0\text{MHz}$ | C_J | - | 10 | pF |
| Reverse Recovery Time | $I_F = 10\text{mA}$ through $I_R = 10\text{mA}$ to $I_R = 1\text{mA}$, $R_L = 100\ \Omega$ | t_{rr} | - | 5 | ns |

| ORDERING AND MARKING INFORMATION | | | |
|---|----------------|----------------|----------------|
| ORDERING CODE⁽¹⁾ | MARKING | PACKAGE | PACKING |
| BAT54W RFG | L4 | SOT-323 | 3K / 7" Reel |
| BAT54AW RFG | L42 | SOT-323 | 3K / 7" Reel |
| BAT54CW RFG | L43 | SOT-323 | 3K / 7" Reel |
| BAT54SW RFG | L44 | SOT-323 | 3K / 7" Reel |
| BAT54W-B0 RFG | L4 | SOT-323 | 3K / 7" Reel |
| BAT54AW-B0 RFG | L42 | SOT-323 | 3K / 7" Reel |
| BAT54CW-B0 RFG | L43 | SOT-323 | 3K / 7" Reel |
| BAT54SW-B0 RFG | L44 | SOT-323 | 3K / 7" Reel |

Notes:

1. "G" means green compound (halogen free)

CHARACTERISTICS CURVES

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

Fig.1 Typical Forward Characteristics

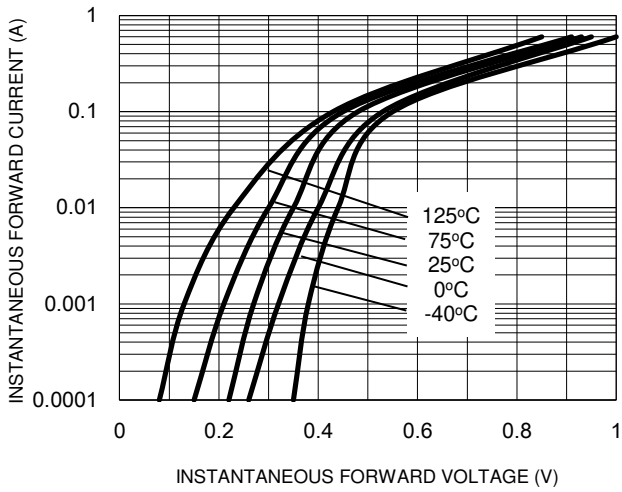


Fig.2 Typical Reverse Characteristics

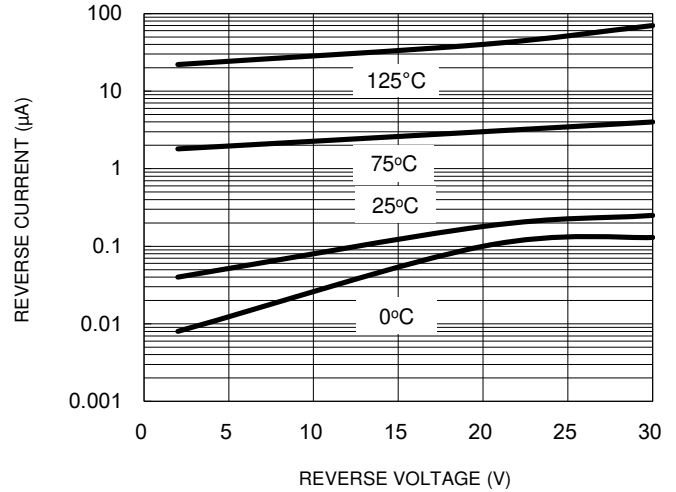


Fig.3 Power Dissipation Curve

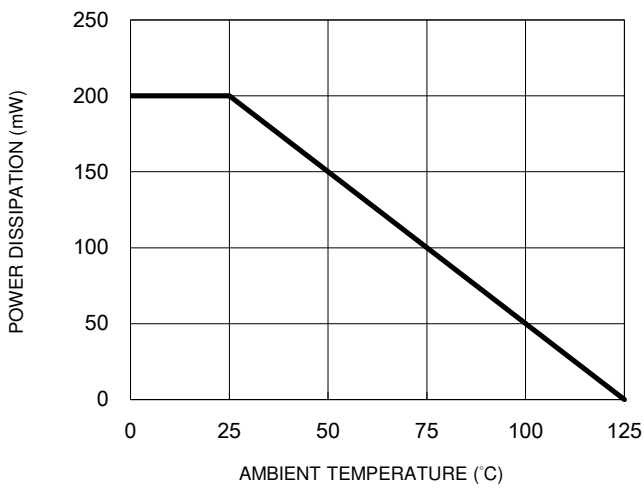
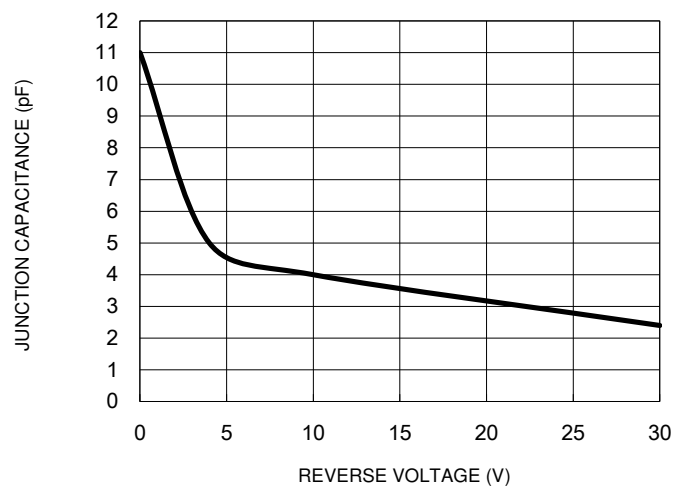
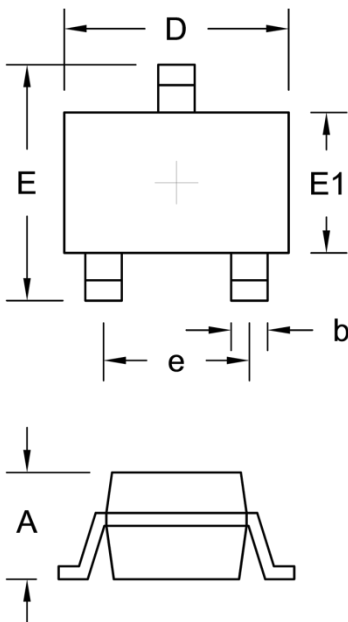


Fig.4 Typical Junction Capacitance



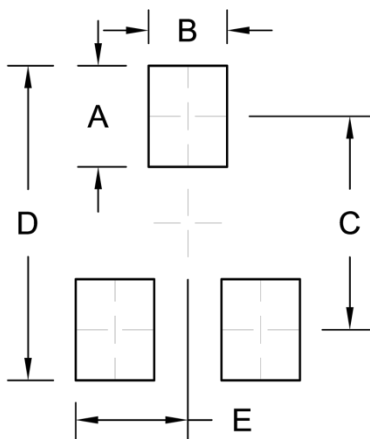
PACKAGE OUTLINE DIMENSIONS

SOT-323



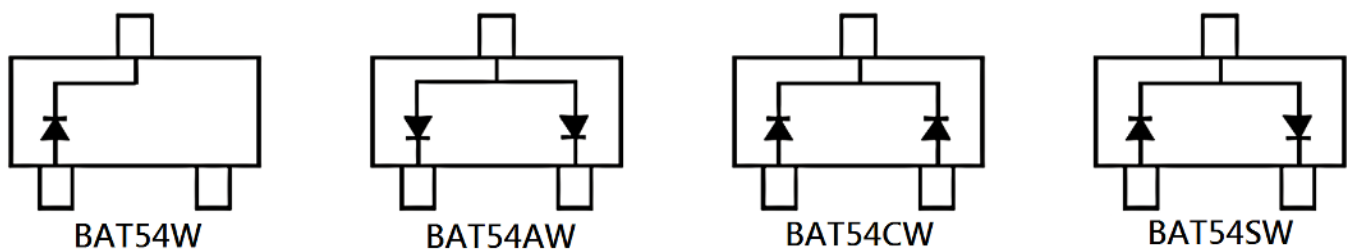
| DIM. | Unit (mm) | | Unit (inch) | |
|------|------------|------|-------------|-------|
| | Min. | Max. | Min. | Max. |
| A | 0.80 | 1.10 | 0.031 | 0.043 |
| b | 0.25 | 0.40 | 0.010 | 0.016 |
| D | 1.80 | 2.20 | 0.071 | 0.087 |
| E | 1.80 | 2.40 | 0.071 | 0.094 |
| E1 | 1.15 | 1.35 | 0.045 | 0.053 |
| e | 1.30 (TYP) | | 0.051 (TYP) | |

SUGGESTED PAD LAYOUT



| Symbol | Unit (mm) | Unit (inch) |
|--------|-----------|-------------|
| A | 0.90 | 0.035 |
| B | 0.70 | 0.028 |
| C | 1.90 | 0.075 |
| D | 2.80 | 0.110 |
| E | 1.00 | 0.039 |

PIN CONFIGURATION



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