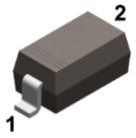
# BAT43W BAT43WS BAT43X BAT43L

## Small Signal Schottky Barrier Diode

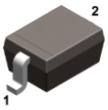
## Features

- Fast switching
- Low forward voltage drop
- Ultra-small surface mount package




**BAT43W**

**SOD-123**

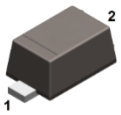



**BAT43WS**

**SOD-323**

## Applications

- Schottky barrier detector and switching diodes




**BAT43X**

**SOD-523**

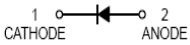



**BAT43L**

**DFN1006-2**

## Mechanical Data

- Case:SOD-123,SOD-323,SOD-523,DFN1006-2
- Molding compound: UL flammability classification rating 94V-0
- Terminals: Tin-plated; solderability per MIL-STD-202, Method 208




## Ordering Information

| Part Number | Package | Shipping Quantity | Marking Code |
|---|---|---|---|
| BAT43W | SOD-123 | 3000 pcs / Tape & Reel | S8 |
| BAT43WS | SOD-323 | 3000 pcs / Tape & Reel | S8 |
| BAT43X | SOD-523 | 3000 pcs / Tape & Reel | S8 |
| BAT43L | DFN1006-2 | 10000 pcs / Tape & Reel | S8 |

## Maximum Ratings (@ $T_A$ = 25°C unless otherwise specified)

| Parameter | Symbol | Value | Unit |
|---|---|---|---|
| Peak Repetitive Reverse Voltage | $V_{RRM}$ | 30 | V |
| Working Peak Reverse Voltage | $V_{RWM}$ | 30 | V |
| DC Reverse Voltage | $V_R$ | 30 | V |
| RMS Reverse Voltage | $V_{R(RMS)}$ | 21 | V |
| Continuous Forward Current | $I_F$ | 100 | mA |
| Repetitive Peak Forward Current | $I_{FRM}$ | 500 | mA |
| Peak Forward Surge Current ($t_p$ = 10ms) | $I_{FSM}$ | 4 | A |

## Thermal Characteristics

| Parameter | Symbol | BAT43W | BAT43WS | BAT43X | BAT43L | Unit |
|---|---|---|---|---|---|---|
| Power Dissipation | $P_D$ | 400 | 200 | 150 | 100 | mW |
| Thermal Resistance Junction-to-Air *1 | $R_{\theta JA}$ | 250 | 500 | 667 | 1000 | °C/W |
| Operating Junction Temperature Range | $T_J$ | -55 ~ +125 | | | | °C |
| Storage Temperature Range | $T_{STG}$ | -55 ~ +150 | | | | °C |

## Electrical Characteristics (@ $T_A$ = 25°C unless otherwise specified)

| Parameter | Symbol | Test Condition | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|---|
| Reverse Breakdown Voltage | $V_{(BR)R}$ | $I_R$= 100μA | 30 | - | - | V |
| Forward Voltage *2 | $V_F$ | $I_F$ = 2mA | 0.26 | - | 0.33 | V |
| | | $I_F$ = 15mA | - | - | 0.45 | V |
| | | $I_F$ = 200mA | - | - | 1.00 | V |
| Maximum Peak Reverse Current *3 | $I_R$ | $V_R$ = 25V | - | - | 500 | nA |
| Capacitance Between Terminals | $C_J$ | $V_R$ = 1V, f = 1MHz | - | - | 10 | pF |
| Reverse Recovery Time | $t_{rr}$ | $I_F$ = $I_R$ = 10mA<br>$I_{rr}$ = 0.1X$I_R$, $R_L$ = 100Ω | - | - | 5 | ns |
| Rectification efficiency | ηv | $R_L$ = 15Ω, $C_L$ = 300pF<br>f = 45MHz | 80 | - | - | % |

Notes:

1. The data tested by surface mounted on FR-4 board with recommended pad layout
2. Pulse test, tp ≤ 300μs
3. Pulse test, tp ≤ 5ms

## Ratings and Characteristic Curves (@ $T_A$ = 25°C unless otherwise specified)

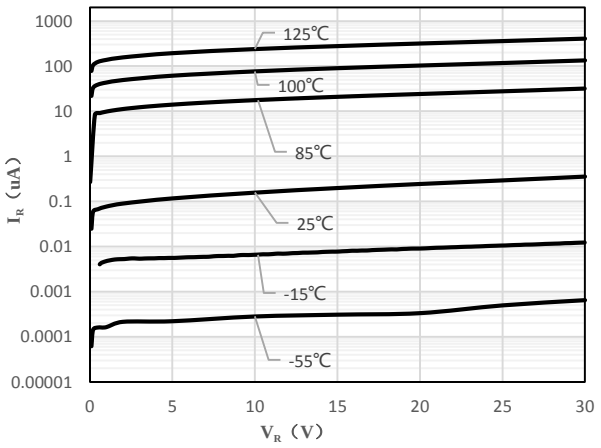



Fig 1 Typical Reverse Characteristic

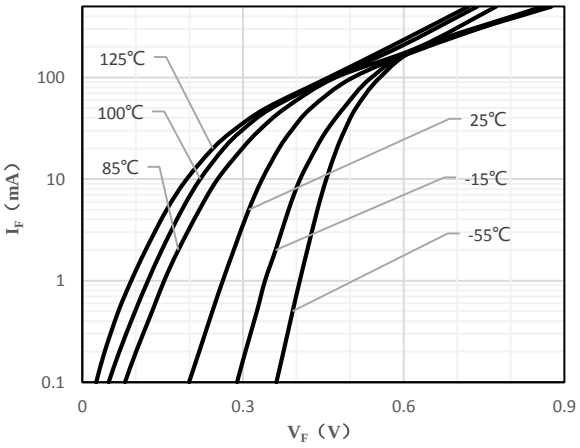



Fig 2 Typical Forward Characteristics

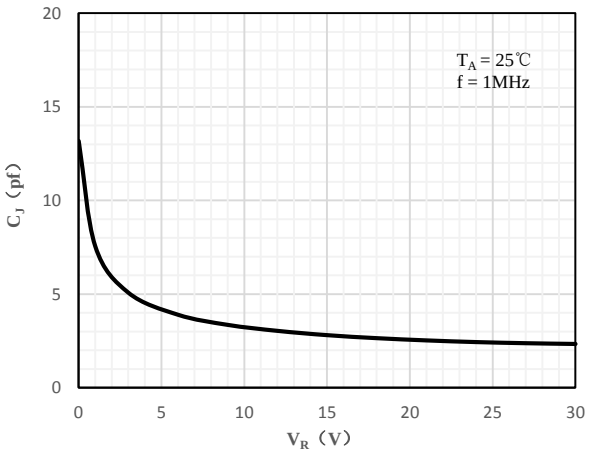



Fig 3 Capacitance Characteristics

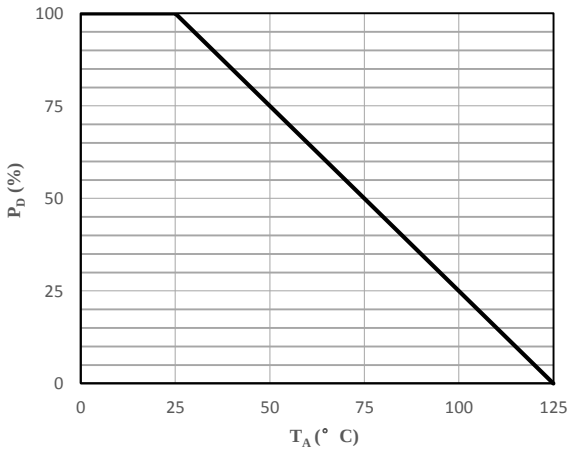
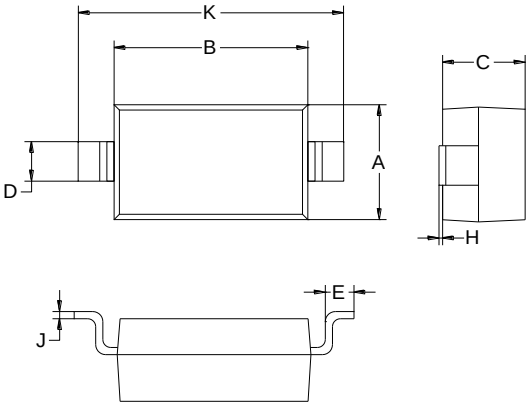



Fig 4 Power Derating Curve

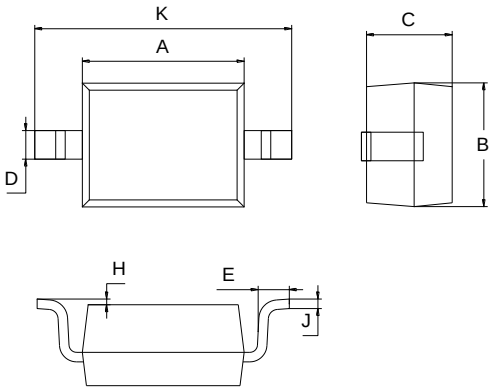
# BAT43W BAT43WS BAT43X BAT43L

**Small Signal Schottky Ba ier Diode**

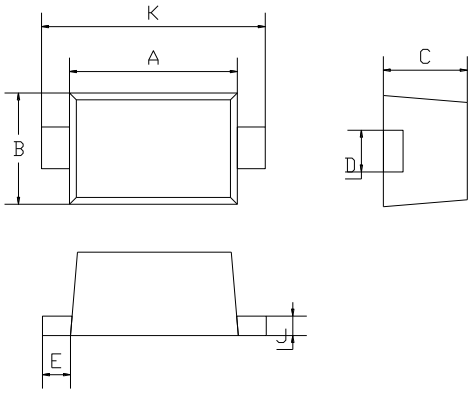
## Package Outline Dimensions (Unit: mm)



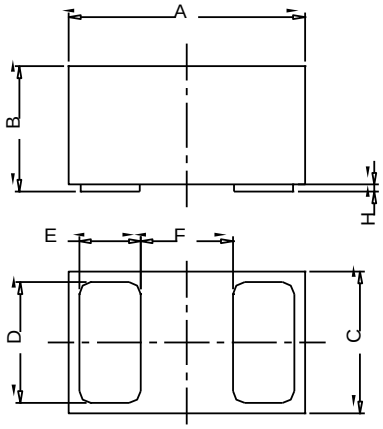

| SOD-123 | | |
|---|---|---|
| **Dimension** | **Min.** | **Max.** |
| A | 1.45 | 1.75 |
| B | 2.55 | 2.85 |
| C | 1.00 | 1.30 |
| D | 0.50 | 0.60 |
| E | 0.25 | 0.45 |
| H | 0.02 | 0.10 |
| J | 0.05 | 0.15 |
| K | 3.55 | 3.85 |




| SOD-323 | | |
|---|---|---|
| **Dimension** | **Min.** | **Max.** |
| A | 1.60 | 1.80 |
| B | 1.20 | 1.40 |
| C | 0.80 | 0.90 |
| D | 0.25 | 0.35 |
| E | 0.22 | 0.42 |
| H | 0.02 | 0.10 |
| J | 0.05 | 0.15 |
| K | 2.55 | 2.75 |



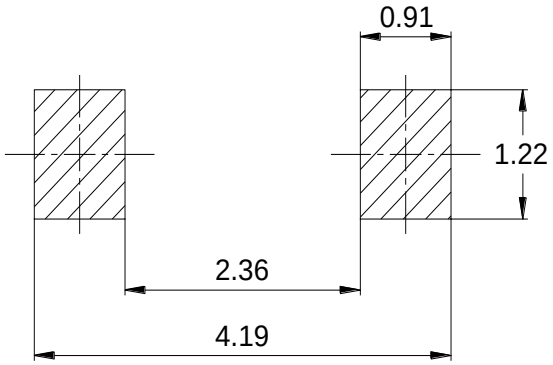

| SOD-523 | | |
|---|---|---|
| **Dimension** | **Min.** | **Max.** |
| A | 1.10 | 1.30 |
| B | 0.70 | 0.90 |
| C | 0.50 | 0.70 |
| D | 0.25 | 0.35 |
| E | 0.15 | 0.25 |
| J | 0.05 | 0.15 |
| K | 1.50 | 1.70 |



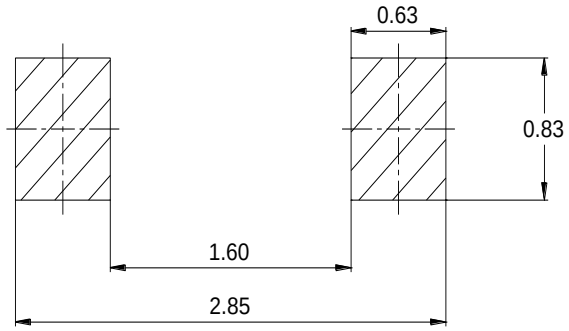

| DFN1006-2 | | | |
|---|---|---|---|
| **Dimension** | **Min.** | **Typ.** | **Max.** |
| A | 0.95 | 1.00 | 1.075 |
| B | 0.47 | 0.50 | 0.53 |
| C | 0.55 | 0.60 | 0.675 |
| D | 0.45 | 0.50 | 0.55 |
| E | 0.20 | 0.25 | 0.30 |
| F | - | 0.40 | - |
| H | 0 | 0.03 | 0.05 |

## Package Outline Dimensions (Unit: mm)

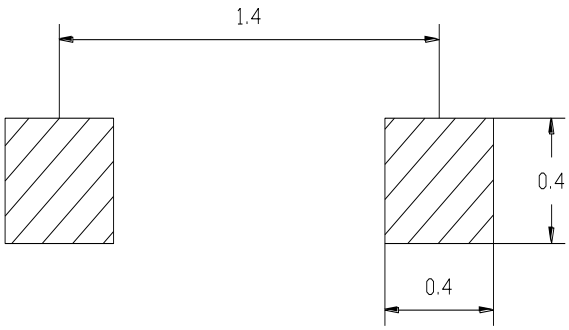
### SOD-123




### SOD-323




### SOD-523




### DFN1006-2

