# 200mA, 250V High Speed Switching Diode

## FEATURES

- AEC-Q101 qualified
- Fast switching speed
- Low leakage current
- Ideal for automated placement
- Moisture sensitivity level: level 1, per J-STD-020
- RoHS Compliant
- Halogen-free

| KEY PARAMETERS | | |
|---|---|---|
| **PARAMETER** | **VALUE** | **UNIT** |
| $I_F$ | 200 | mA |
| $V_{RRM}$ | 250 | V |
| $I_{FSM}$ | 4 | A |
| $T_{J\ MAX}$ | 150 | °C |
| $V_F$ at $I_F$=200mA | 1.25 | V |
| Configuration | Single die | |

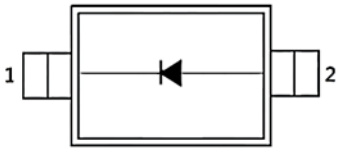
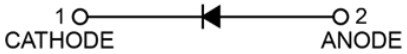
## APPLICATIONS

- High-speed switching at high voltage
- High-voltage general-purpose switching
- Voltage clamping
- Reverse polarity protection

Pb-Free RoHS COMPLIANT HALOGEN FREE

## MECHANICAL DATA

- Case: SOD-123
- Molding compound meets UL 94V-0 flammability rating
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 2 whisker test
- Weight: 10.97mg (approximately)

| PACKAGE: SOD-123 | PIN CONFIGURATION | CIRCUIT DIAGRAM |
|---|---|---|
|  |  |  |



## ABSOLUTE MAXIMUM RATINGS ($T_A$ = 25°C unless otherwise noted)

| PARAMETER | | SYMBOL | VALUE | UNIT |
|---|---|---|---|---|
| Power dissipation(1) | | $P_D$ | 410 | mW |
| Repetitive peak reverse voltage | | $V_{RRM}$ | 250 | V |
| Forward current | | $I_F$ | 200 | mA |
| Repetitive peak forward current | | $I_{FRM}$ | 625 | mA |
| Non-repetitive peak forward surge current | t = 1μs | $I_{FSM}$ | 4 | A |
| | t = 1s | | 1 | |
| Junction temperature | | $T_J$ | -55 to +150 | °C |
| Storage temperature | | $T_{STG}$ | -55 to +150 | °C |

**Note:**
1. Device mounted on an FR4 Printed-Circuit Board (PCB), single-sided copper, tin-plated and standard footprint

| THERMAL PERFORMANCE | | | |
|---|---|---|---|
| **PARAMETER** | **SYMBOL** | **TYP** | **UNIT** |
| Junction-to-ambient thermal resistance(1) | $R_{\Theta JA}$ | 305 | °C/W |

**Thermal Performance Note:**
1. Device mounted on an FR4 Printed-Circuit Board (PCB), single-sided copper, tin-plated and standard footprint

| ELECTRICAL SPECIFICATIONS ($T_A$ = 25°C unless otherwise noted) | | | | | | |
|---|---|---|---|---|---|---|
| **PARAMETER** | **CONDITIONS** | **SYMBOL** | **MIN** | **TYP** | **MAX** | **UNIT** |
| Forward voltage(1) | $I_F$ = 100mA | $V_F$ | - | - | 1.00 | V |
| | $I_F$ = 200mA | | - | - | 1.25 | |
| Reverse breakdown voltage | $I_R$ = 100μA | $V_{BR}$ | 250 | - | - | V |
| Reverse current(2) | $V_R$ = 200V | $I_R$ | - | - | 0.1 | μA |
| | $V_R$ = 200V, $T_J$ = 100°C | | - | - | 15 | μA |
| | $V_R$ = 200V, $T_J$ = 150°C | | - | - | 100 | μA |
| Junction capacitance | f = 1MHz, $V_R$ = 0V | $C_J$ | - | - | 5 | pF |
| Reverse recovery time | $I_F$ = $I_R$ = 30mA, $I_{RR}$ = 3mA, $R_L$ = 100Ω | $t_{rr}$ | - | - | 50 | ns |

**Notes:**
1. Pulse test with PW=0.3 ms
2. Pulse test with PW=30 ms

| ORDERING INFORMATION | | |
|---|---|---|
| **ORDERING CODE** | **PACKAGE** | **PACKING** |
| BAV21WH RHG | SOD-123 | 3,000 / 7” Tape & Reel |

## CHARACTERISTICS CURVES

($T_A$ = 25°C unless otherwise noted)

**Fig.1 Power Dissipation Curve**

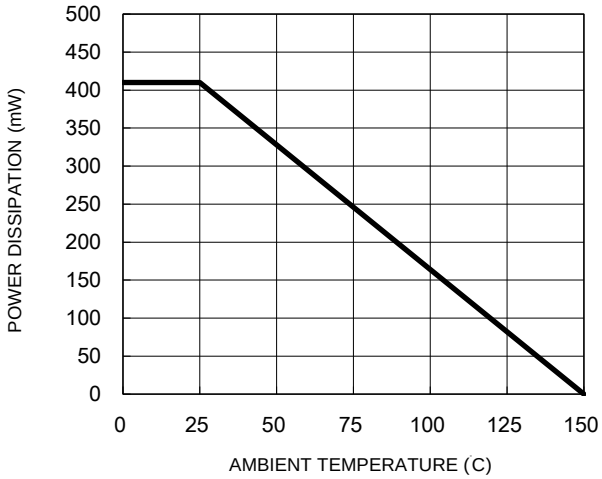



**Fig.2 Typical Junction Capacitance**

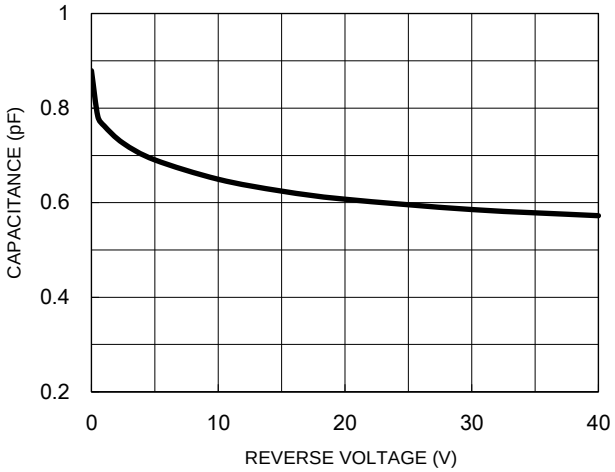



**Fig.3 Typical Reverse Characteristics**

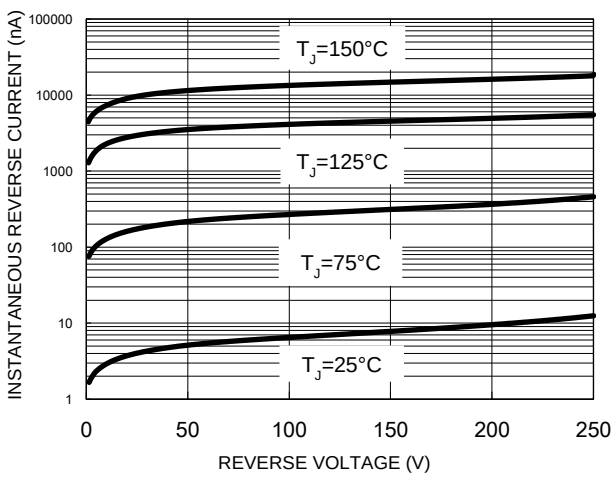
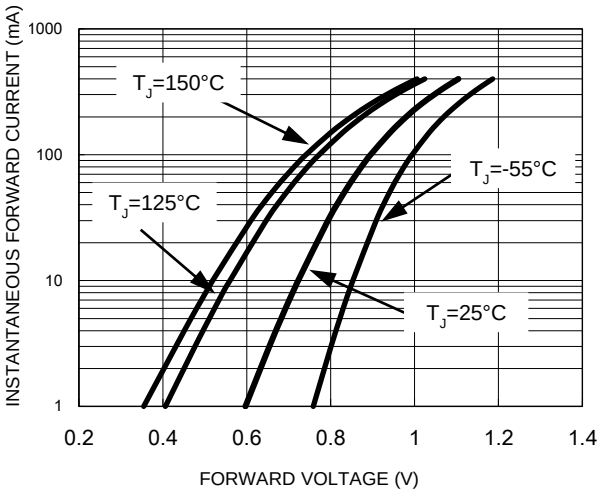
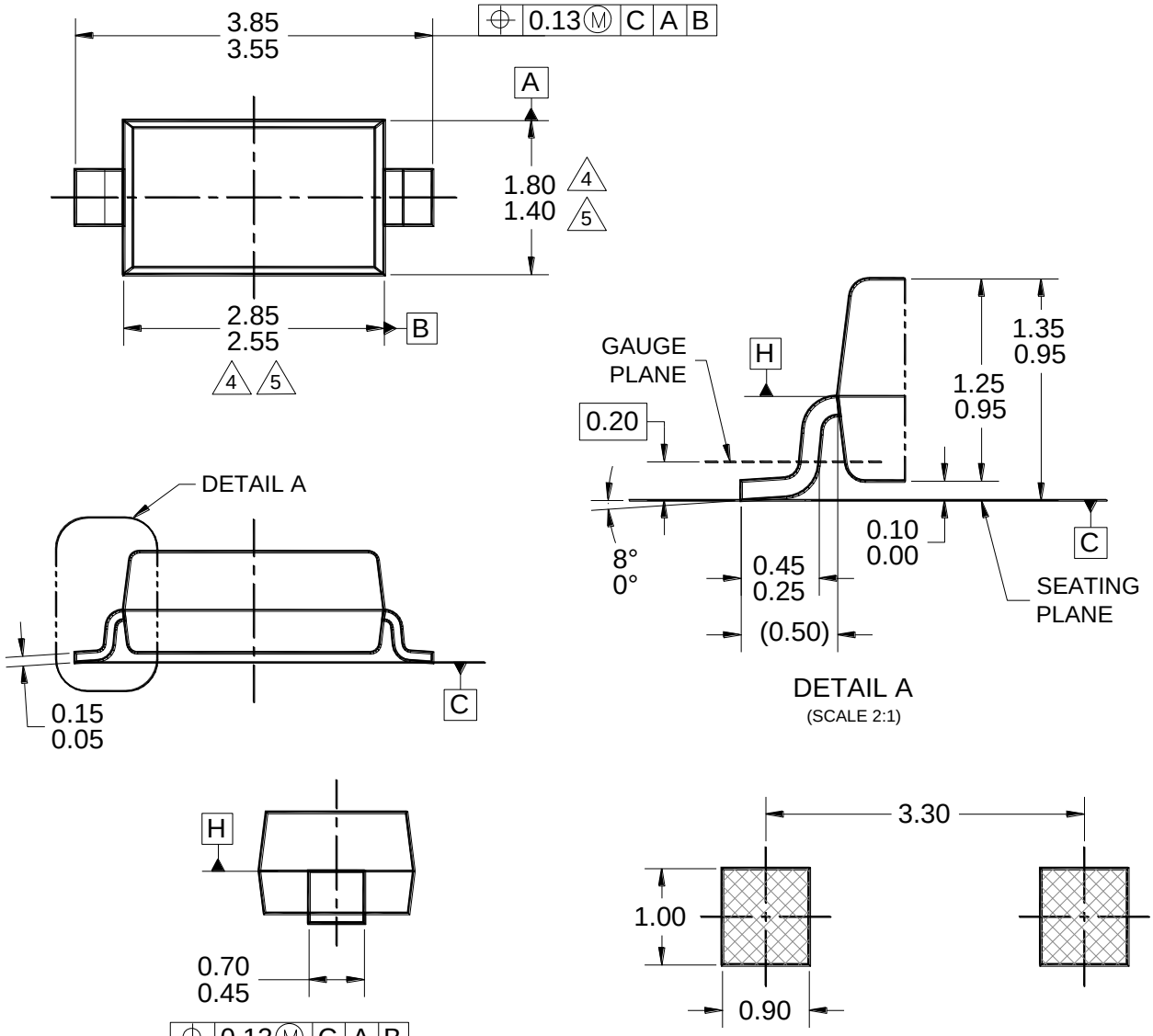


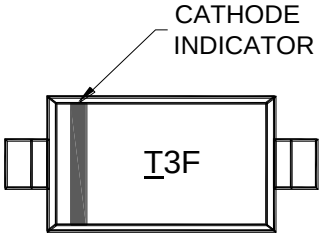

**Fig.4 Typical Forward Characteristics**



## PACKAGE OUTLINE DIMENSION

**SOD-123**




T3 = Device marking
F = Factory code

NOTES: UNLESS OTHERWISE SPECIFIED

1. ALL DIMENSIONS ARE IN MILLIMETERS.
2. DIMENSIONING AND TOLERANCING PER ASME Y14.5M-1994.
3. PACKAGE OUTLINE REFERENCE: JEDEC DO-215, VARIATION AD, ISSUE D.
4. MOLDED PLASTIC BODY DIMENSIONS DO NOT INCLUDE MOLD FLASH.
5. MOLDED PLASTIC BODY LATERAL DIMENSIONS TO BE DETERMINED AT DATUM PLANE H.
6. DWG NO. REF: HQ2SD07-SOD123-046 REV A.

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