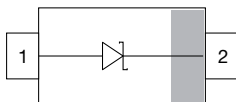


Small Signal Schottky Diode



FEATURES

- These diodes feature very low turn-on voltage and fast switching. These devices are protected by a PN junction guard ring against excessive voltage, such as electrostatic discharges
- For general purpose applications
- AEC-Q101 qualified available (part number on request)
- Molding compound meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level (MSL) 1
- Base P/N-G3 - green, commercial grade
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912



LINKS TO ADDITIONAL RESOURCES



MECHANICAL DATA

Case: SOD-123

Weight: approx. 10.6 mg

Packaging codes/options:

18/10K per 13" reel (8 mm tape), 10K/box

08/3K per 7" reel (8 mm tape), 15K/box

PARTS TABLE

| PART | ORDERING CODE | AEC-Q101 QUALIFIED | TYPE MARKING | CIRCUIT CONFIGURATION | TAPED UNITS PER REEL | MINIMUM ORDER QUANTITY |
|----------|---------------|--------------------|--------------|-----------------------|-----------------------------------|------------------------|
| BAT54W-G | BAT54W-G3-08 | no | L8 | Single | 3 000 (8 mm tape on 7" reel) | 15 000 |
| | BAT54W-G3-18 | no | | | 10 000 (8 mm tape on 13" reel) | 10 000 |

PACKAGE

| PACKAGE NAME | WEIGHT | MOLDING COMPOUND FLAMMABILITY RATING | MOISTURE SENSITIVITY LEVEL | SOLDERING CONDITIONS |
|--------------|---------|--------------------------------------|--------------------------------|------------------------------|
| SOD-123 | 10.6 mg | UL 94 V-0 | MSL 1 (according J-STD-020) | Peak temperature max. 260 °C |

ABSOLUTE MAXIMUM RATINGS (T_{amb} = 25 °C, unless otherwise specified)

| PARAMETER | TEST CONDITION | SYMBOL | VALUE | UNIT |
|--|--|------------------|-------|------|
| Repetitive peak reverse voltage | | V _{RRM} | 30 | V |
| Forward continuous current ⁽¹⁾ | | I _F | 200 | mA |
| Repetitive peak forward current ⁽¹⁾ | duty cycle t _p / T < 0.5 | I _{FRM} | 300 | mA |
| Surge forward current ⁽¹⁾ | t _p = 10 ms | I _{FSM} | 600 | mA |
| Power dissipation | on FR-4 board with recommended soldering footprint | P _{tot} | 230 | mW |
| | Infinite heatsink | | 350 | mW |

Note

⁽¹⁾ Infinite heatsink

**THERMAL CHARACTERISTICS** ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)

| PARAMETER | TEST CONDITION | SYMBOL | VALUE | UNIT |
|--|---|------------|-------------|--------------------|
| Thermal resistance junction to ambient air | according to JEDEC® 51-3 on FR-4 board with recommended soldering footprint | R_{thJA} | 420 | K/W |
| Thermal resistance junction lead | Infinite heatsink | R_{thJL} | 280 | K/W |
| Junction temperature | | T_j | 125 | $^{\circ}\text{C}$ |
| Storage temperature range | | T_{stg} | -65 to +150 | $^{\circ}\text{C}$ |
| Operating temperature range | | T_{op} | -55 to +150 | $^{\circ}\text{C}$ |

ELECTRICAL CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)

| PARAMETER | TEST CONDITION | SYMBOL | MIN. | TYP. | MAX. | UNIT |
|--------------------------------|--|------------|------|------|------|---------------|
| Reverse breakdown voltage | Tested with 100 μA pulses | $V_{(BR)}$ | 30 | | | V |
| Leakage current ⁽¹⁾ | $V_R = 25\text{ V}$ | I_R | | | 2 | μA |
| Forward voltage ⁽¹⁾ | $I_F = 0.1\text{ mA}$ | V_F | | | 240 | mV |
| | $I_F = 1\text{ mA}$ | V_F | | | 320 | mV |
| | $I_F = 10\text{ mA}$ | V_F | | | 400 | mV |
| | $I_F = 30\text{ mA}$ | V_F | | | 500 | mV |
| | $I_F = 100\text{ mA}$ | V_F | | | 800 | mV |
| Diode capacitance | $V_R = 1\text{ V}$, $f = 1\text{ MHz}$ | C_D | | | 10 | pF |
| Reverse recovery time | $I_F = 10\text{ mA}$, $I_R = 10\text{ mA}$, $i_R = 1\text{ mA}$, $R_L = 100\text{ }\Omega$ | t_{rr} | | | 5 | ns |

Note

⁽¹⁾ Pulse test: $t_p < 300\text{ }\mu\text{s}$, duty cycle $t_p / T < 0.02$



TYPICAL CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)

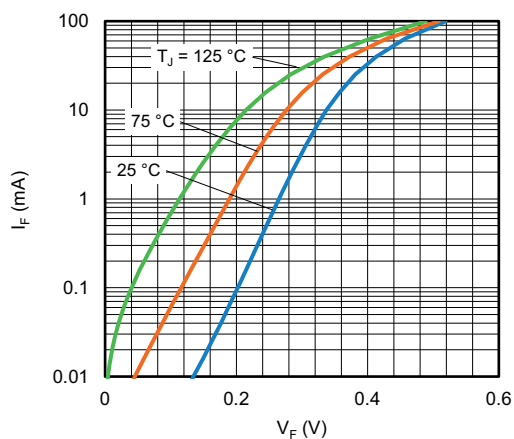


Fig. 1 - Typical Forward Current vs. Forward Voltage

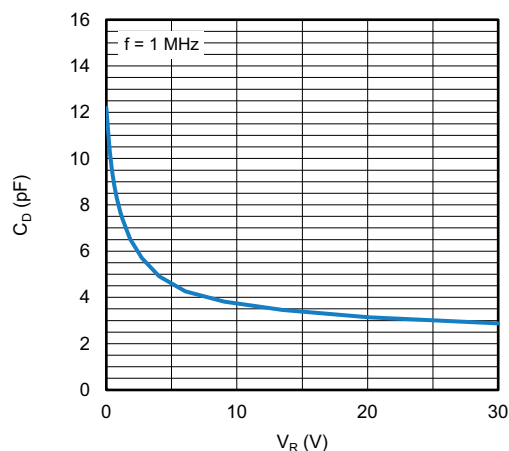


Fig. 3 - Typical Reverse Characteristics

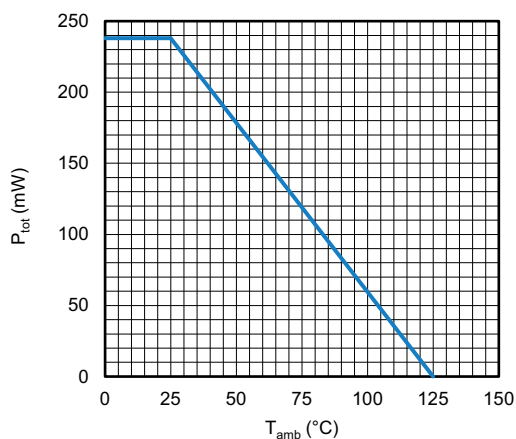


Fig. 2 - Admissible Power Dissipation vs. Ambient Temperature

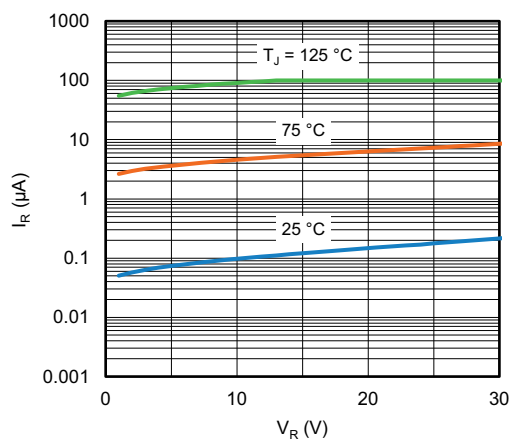
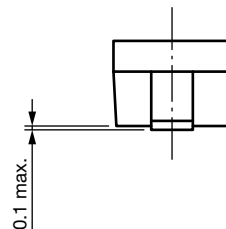


Fig. 4 - Typical Capacitance vs. Reverse Voltage



PACKAGE DIMENSIONS in millimeters (inches): **SOD-123**



Foot print recommendation



Rev. 01 - Date: 18. Jan. 2022

Document no.: S8-V-3910.01-003 (4)

23223



CARRIER TAPE SOD-123



Rev. 02 - Date: 21. Jan. 2014
Document no.: S8-V-3717.10-002 (4)

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ORIENTATION IN CARRIER TAPE SOD-123



Rev. 02 - Date: 07. Nov. 2022
Document no.: S8-V-3717.10-003 (4)

23225



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