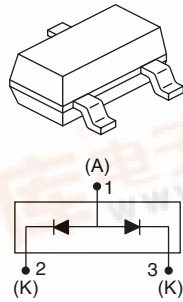




BAT54AWPbF

Vishay High Power Products

Schottky Rectifier, 2 x 0.1 A



SOT-323

FEATURES

- Small foot print, surface mountable
- Very low forward voltage drop
- Extremely fast switching speed for high frequency operation
- Guard ring for enhanced ruggedness and long term reliability
- Lead (Pb)-free
- Designed and qualified for industrial level



RoHS*
COMPLIANT

PRODUCT SUMMARY

| | |
|-------------|-----------|
| $I_{F(AV)}$ | 2 x 0.1 A |
| V_R | 30 V |

DESCRIPTION

This Schottky barrier diode is designed for high speed switching application, voltage clamping and circuit protection. Miniature surface mount packages with reduced foot print are excellent for portable application where space is limited.

MAJOR RATINGS AND CHARACTERISTICS

| SYMBOL | CHARACTERISTICS | VALUES | UNITS |
|-----------|------------------------------------|-------------|-------|
| I_F | DC | 0.2 | A |
| V_{RRM} | | 30 | V |
| I_{FSM} | $t_p = 10$ ms sine | 1.0 | A |
| V_F | 30 mA DC, $T_J = 25$ °C | 0.5 | V |
| P_d | Power dissipation at $T_A = 25$ °C | 200 | mW |
| T_J | Range | - 65 to 150 | °C |

VOLTAGE RATINGS

| PARAMETER | SYMBOL | BAT54AWPbF | UNITS |
|--------------------------------------|-----------|------------|-------|
| Maximum DC reverse voltage | V_R | 30 | V |
| Maximum working peak reverse voltage | V_{RWM} | | |

ABSOLUTE MAXIMUM RATINGS

| PARAMETER | SYMBOL | TEST CONDITIONS | VALUES | UNITS |
|--|-------------|---|--------|-------|
| Maximum average forward current per leg per device | $I_{F(AV)}$ | DC | 0.1 | A |
| | | | 0.2 | |
| Maximum peak one cycle non-repetitive surge current at $T_J = 25$ °C | I_{FSM} | 5 μ s sine or 3 μ s rect. pulse | 8.4 | |
| | | 10 ms sine or 6 ms rect. pulse | 1.0 | |

*Pb containing terminations are not RoHS compliant, exemptions may apply

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| ELECTRICAL SPECIFICATIONS | | | | | |
|---------------------------------|----------------|---|----------------------------------|---------------|------------------|
| PARAMETER | SYMBOL | TEST CONDITIONS | | VALUES | UNITS |
| Maximum forward voltage drop | $V_{FM}^{(1)}$ | 0.1 A | $T_J = 25\text{ }^\circ\text{C}$ | 0.65 | V |
| | | 30 mA | | 0.50 | |
| | | 10 mA | | 0.40 | |
| | | 1 mA | | 0.32 | |
| | | 0.1 mA | | 0.24 | |
| Maximum reverse leakage current | $I_{RM}^{(1)}$ | $V_R = 25\text{ V}$ | 2 | μA | |
| | | $V_R = 30\text{ V}$ | 3 | | |
| Maximum junction capacitance | C_T | $V_R = 1\text{ V}_{DC}$ (test signal range 100 kHz to 1 MHz) $T_J = 25\text{ }^\circ\text{C}$ | | 10 | pF |
| Maximum voltage rate of change | dV/dt | Rated V_R | | 10 000 | V/ μs |

Note

(1) Pulse width < 300 μs , duty cycle < 2 %

| THERMAL - MECHANICAL SPECIFICATIONS | | | | | |
|---|----------------------|---|--|-------------|--------------------|
| PARAMETER | SYMBOL | TEST CONDITIONS | | VALUES | UNITS |
| Maximum junction and storage temperature range | $T_J^{(1)}, T_{Stg}$ | | | - 65 to 150 | $^\circ\text{C}$ |
| Maximum thermal resistance, junction to ambient | R_{thJA} | Mounted on PC board FR4 with minimum pad size | | 625 | $^\circ\text{C/W}$ |
| Approximate weight | | | | 0.006 | g |
| Marking device | | Case style SOT-323 | | JYWLC | |

Note

(1) $\frac{dP_{tot}}{dT_J} < \frac{1}{R_{thJA}}$ thermal runaway condition for a diode on its own heatsink



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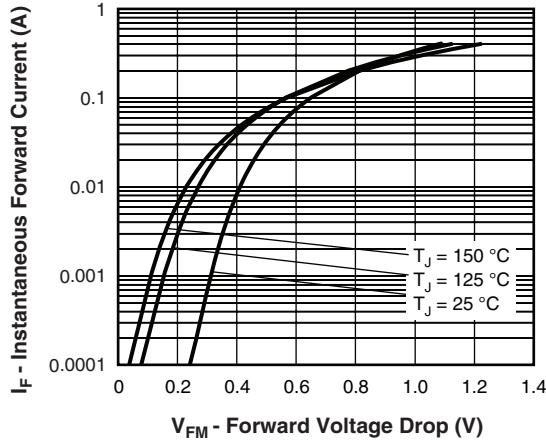


Fig. 1 - Maximum Forward Voltage Drop Characteristics (Per Leg)

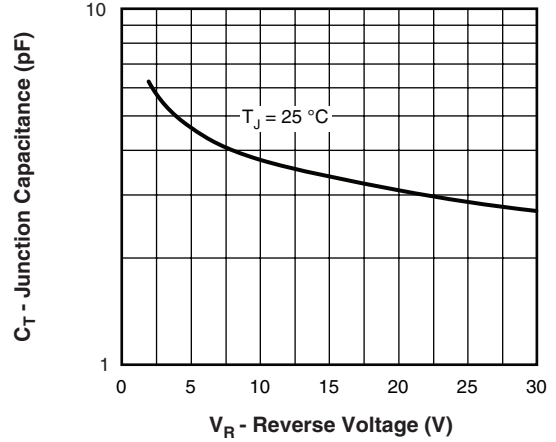


Fig. 3 - Typical Junction Capacitance vs. Reverse Voltage (Per Leg)

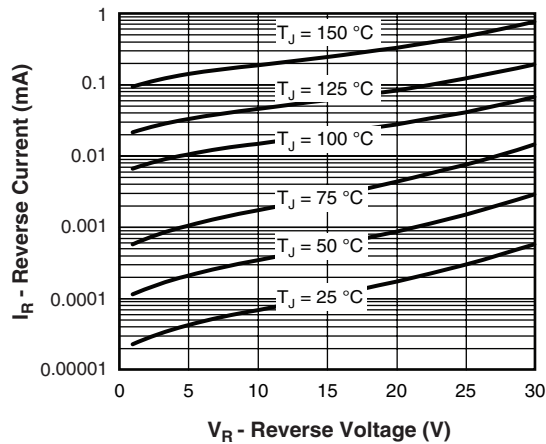


Fig. 2 - Typical Values of Reverse Current vs. Reverse Voltage (Per Leg)

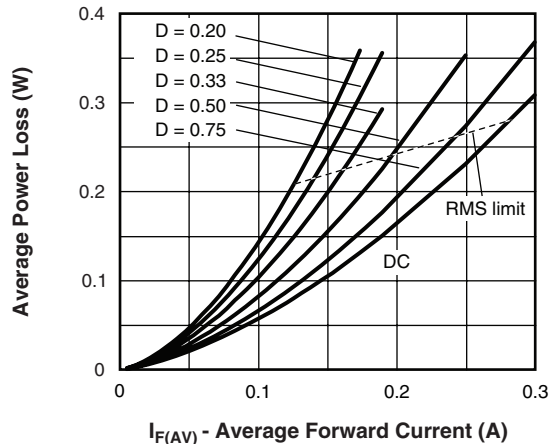


Fig. 4 - Forward Power Loss Characteristics

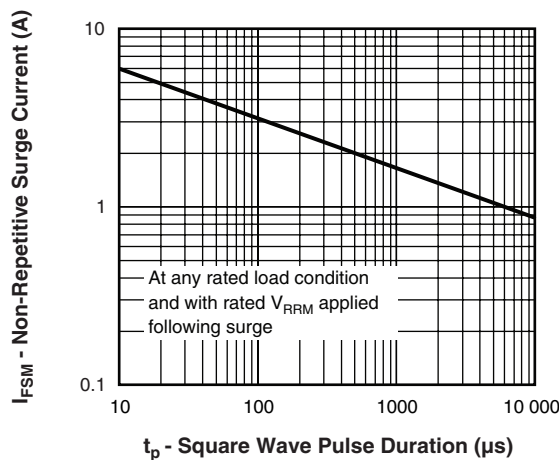


Fig. 5 - Maximum Non-Repetitive Surge Current

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Vishay High Power Products Schottky Rectifier, 2 x 0.1 A



ORDERING INFORMATION TABLE

| DEVICE | PACKAGE | MARKING | CONFIGURATION | BASE QUANTITY | DELIVERY MODE |
|---------|---------|----------------------|---------------|---------------|---------------|
| BAT54AW | SOT-323 | JY \overline{W} LC | Dual C. anode | 3000 | Tape and reel |

LINKS TO RELATED DOCUMENTS

| | |
|--------------------------|---|
| Dimensions | http://www.vishay.com/doc?95050 |
| Part marking information | http://www.vishay.com/doc?95338 |
| Packaging information | http://www.vishay.com/doc?95061 |



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