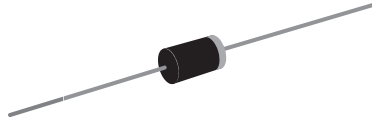


Schottky Barrier Rectifier



DO-204AC (DO-15)

FEATURES

- Very small conduction losses
- Extremely fast switching
- Low forward voltage drop
- High frequency operation
- 20 kV ESD capability
- Solder dip 260 °C, 40 s
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC



RoHS
COMPLIANT

TYPICAL APPLICATIONS

For use in low voltage high frequency inverters, freewheeling, dc-to-dc converters, and polarity protection applications.

MECHANICAL DATA

Case: DO-204AC (DO-15)

Epoxy meets UL 94V-0 flammability rating

Terminals: Matte tin plated leads, solderable per J-STD-002 and JESD22-B102

E3 suffix for consumer grade, meets JESD 201 class 1A whisker test

Polarity: Color band denotes the cathode end

| PRIMARY CHARACTERISTICS | |
|-------------------------|----------------|
| $I_{F(AV)}$ | 3.0 A |
| V_{RRM} | 20 V to 60 V |
| I_{FSM} | 100 A |
| V_F | 0.50 V, 0.70 V |
| $T_J \text{ max.}$ | 125 °C, 150 °C |

| MAXIMUM RATINGS ($T_A = 25 \text{ °C}$ unless otherwise noted) | | | | | | | |
|---|-------------|---------------|--------|--------|---------------|--------|------|
| PARAMETER | SYMBOL | SB320S | SB330S | SB340S | SB350S | SB360S | UNIT |
| Maximum repetitive peak reverse voltage | V_{RRM} | 20 | 30 | 40 | 50 | 60 | V |
| Maximum RMS voltage | V_{RMS} | 14 | 21 | 28 | 35 | 42 | V |
| Maximum DC blocking voltage | V_{DC} | 20 | 30 | 40 | 50 | 60 | V |
| Maximum average forward rectified current at 0.375" (9.5 mm) lead length (Fig. 1) | $I_{F(AV)}$ | 3.0 | | | | | A |
| Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load | I_{FSM} | 100 | | | | | A |
| Electrostatic discharge capacitor voltage Human body model air discharge: C = 100 pF, R = 1.5 kΩ | V_C | 20 | | | | | kV |
| Voltage rate of change (rated V_R) | dV/dt | 10 000 | | | | | V/μs |
| Operating junction temperature range | T_J | - 65 to + 125 | | | - 65 to + 150 | | °C |
| Storage temperature range | T_{STG} | - 65 to + 150 | | | | | °C |



| ELECTRICAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted) | | | | | | | | |
|--|---|----------------|--------|--------|--------|--------|--------|------|
| PARAMETER | TEST CONDITIONS | SYMBOL | SB320S | SB330S | SB340S | SB350S | SB360S | UNIT |
| Maximum instantaneous forward voltage ⁽¹⁾ | 3.0 A | V _F | 0.50 | | | 0.70 | | V |
| Maximum reverse current at rated V _R ⁽²⁾ | T _A = 25 °C T _A = 100 °C | I _R | 0.50 | | | | 10 | mA |
| | | | 20 | | | | | |

Notes:

- (1) Pulse test: 300 μs pulse width, 1 % duty cycle
- (2) Pulse test: Pulse width ≤ 40 ms

| THERMAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted) | | | | | | | | |
|---|------------------|--------|--------|--------|--------|--------|------|------|
| PARAMETER | SYMBOL | SB320S | SB330S | SB340S | SB350S | SB360S | UNIT | |
| Typical thermal resistance ⁽¹⁾ | R _{θJA} | 40 | | | | | | °C/W |
| | R _{θJL} | 12 | | | | | | |

Note:

- (1) Thermal resistance from junction to lead vertical P.C.B. mounting, 0.500" (12.7 mm) lead length with 2.5 x 2.5" (63.5 x 63.5 mm) copper pad

| ORDERING INFORMATION (Example) | | | | |
|--------------------------------|-----------------|------------------------|---------------|----------------------------------|
| PREFERRED P/N | UNIT WEIGHT (g) | PREFERRED PACKAGE CODE | BASE QUANTITY | DELIVERY MODE |
| SB360S-E3/54 | 0.40 | 54 | 4000 | 13" diameter paper tape and reel |
| SB360S-E3/73 | 0.40 | 73 | 2000 | Ammo pack packaging |

RATINGS AND CHARACTERISTICS CURVES

(T_A = 25 °C unless otherwise noted)

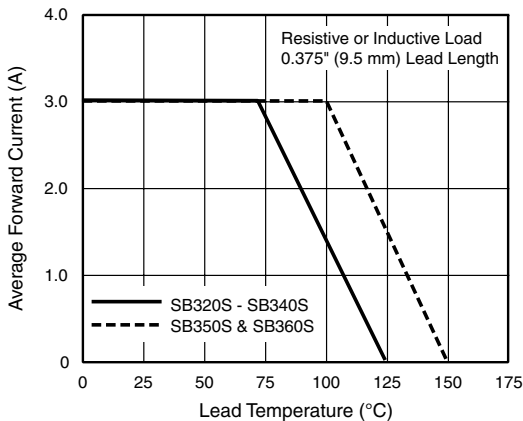


Figure 1. Forward Current Derating Curve

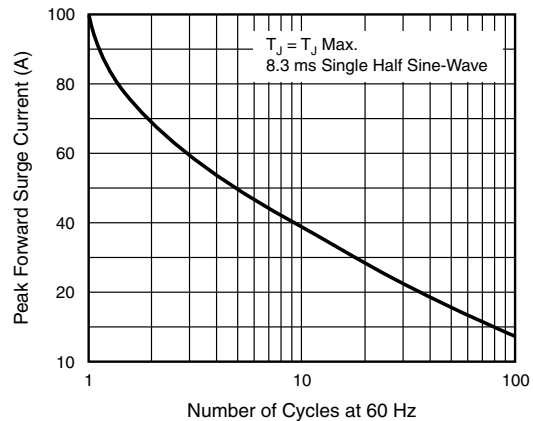


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

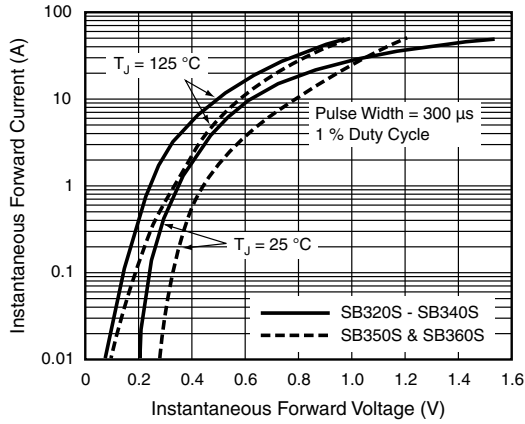


Figure 3. Typical Instantaneous Forward Characteristics

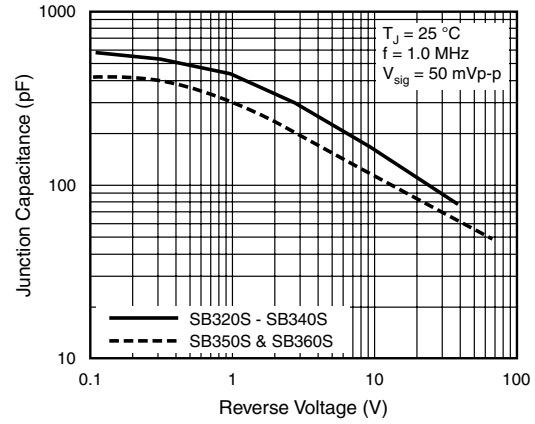


Figure 5. Typical Junction Capacitance

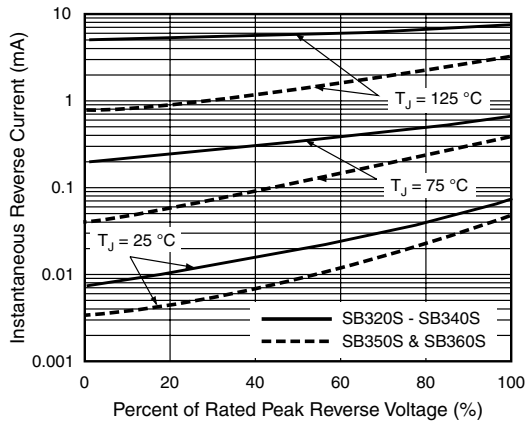


Figure 4. Typical Reverse Characteristics

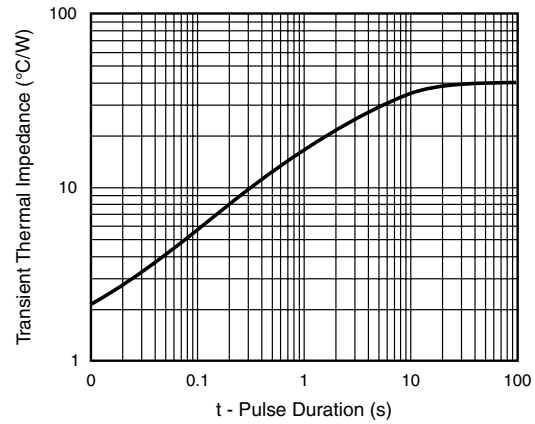
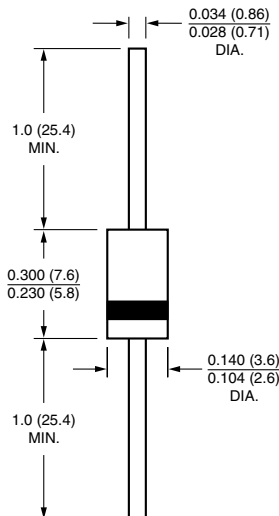


Figure 6. Typical Transient Thermal Impedance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-204AC (DO-15)





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