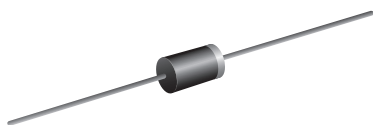




Schottky Barrier Rectifier



DO-204AC (DO-15)

FEATURES

- Guardring for overvoltage protection
- Very small conduction losses
- Extremely fast switching
- Low forward voltage drop
- High forward surge capability
- High frequency operation
- Solder dip 275 °C max. 10 s, per JESD 22-B106
- Compliant to RoHS directive 2002/95/EC and in accordance to WEEE 2002/96/EC

RoHS
COMPLIANT

PRIMARY CHARACTERISTICS

| | |
|-------------|----------------|
| $I_{F(AV)}$ | 2.0 A |
| V_{RRM} | 20 V to 60 V |
| I_{FSM} | 60 A |
| V_F | 0.50 V, 0.68 V |
| T_J max. | 125 °C, 150 °C |

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)

Molding compound meets UL 94 V-0 flammability rating
Base P/N-E3 - RoHS compliant, commercial grade

Terminals: Matte tin plated leads, solderable per J-STD-002 and JESD 22-B102

E3 suffix meets JESD 201 class 1A whisker test

MAXIMUM RATINGS ($T_A = 25\text{ °C}$ unless otherwise noted)

| PARAMETER | SYMBOL | SB220 | SB230 | SB240 | SB250 | SB260 | 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)} | 2.0 | | | | | A |
| Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load | I _{FSM} | 60 | | | | | A |
| Maximum full load reverse current, full cycle average at T _A = 75 °C | I _{R(AV)} | 30 | | | | | mA |
| 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 |

SB220 thru SB260

Vishay General Semiconductor

**ELECTRICAL CHARACTERISTICS** ($T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)

| PARAMETER | TEST CONDITIONS | | SYMBOL | SB220 | SB230 | SB240 | SB250 | SB260 | UNIT |
|--|-----------------|-------------------------------------|-------------|-------|-------|-------|-------|-------|------|
| Maximum instantaneous forward voltage | 2.0 A | | $V_F^{(1)}$ | 0.50 | | | 0.68 | | V |
| Maximum instantaneous reverse current at rated DC blocking voltage | | $T_A = 25\text{ }^{\circ}\text{C}$ | $I_R^{(1)}$ | 0.50 | | | 8.0 | | mA |
| | | $T_A = 100\text{ }^{\circ}\text{C}$ | | 15 | | | | | |
| Typical junction capacitance | | | C_J | 170 | | | | | pF |

Note⁽¹⁾ Pulse test: 300 μs pulse width, 1 % duty cycle**THERMAL CHARACTERISTICS** ($T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)

| PARAMETER | SYMBOL | SB220 | SB230 | SB240 | SB250 | SB260 | UNIT |
|----------------------------|---------------------------------|-------|-------|-------|-------|-------|------|
| Typical thermal resistance | R _{θJA} ⁽¹⁾ | 45 | | | | | °C/W |
| | R _{θJL} ⁽¹⁾ | 14 | | | | | |

Note⁽²⁾ Thermal resistance junction to lead P.C.B. mounted 0.375" (9.5 mm) lead length**ORDERING INFORMATION** (Example)

| PREFERRED P/N | UNIT WEIGHT (g) | PREFERRED PACKAGE CODE | BASE QUANTITY | DELIVERY MODE |
|---------------|-----------------|------------------------|---------------|----------------------------------|
| SB240-E3/54 | 0.398 | 54 | 4000 | 13" diameter paper tape and reel |
| SB240-E3/73 | 0.398 | 73 | 2000 | Ammo pack packaging |

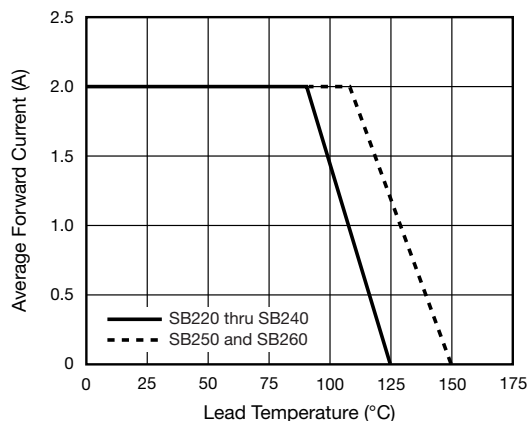
RATINGS AND CHARACTERISTICS CURVES $(T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)

Fig. 1 - Forward Current Derating Curve

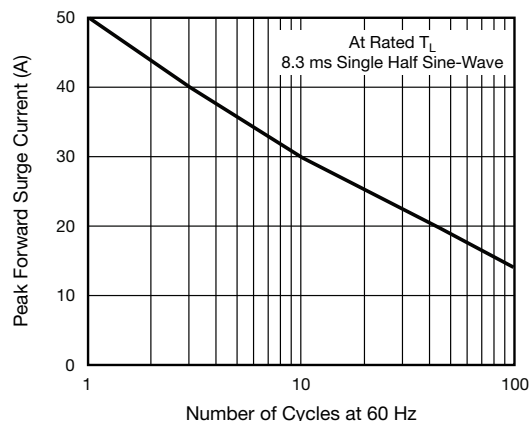


Fig. 2 - Maximum Non-Repetitive Surge Current

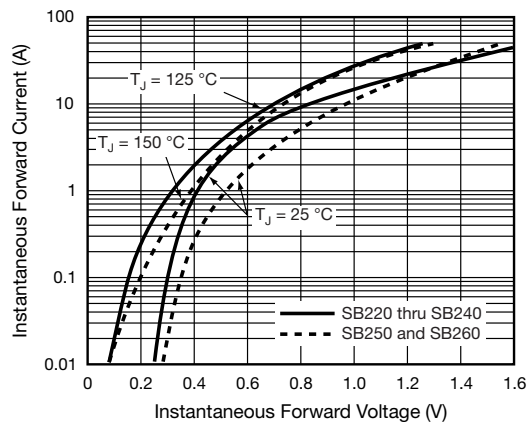


Fig. 3 - Typical Instantaneous Forward Characteristics

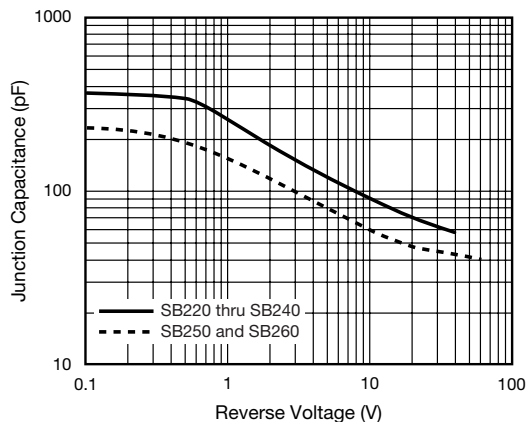


Fig. 5 - Typical Junction Capacitance

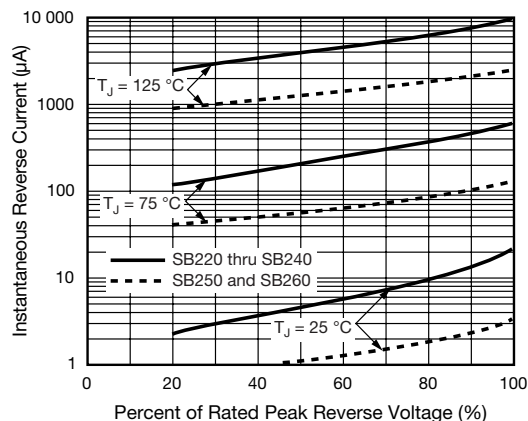


Fig. 4 - Typical Reverse Characteristics

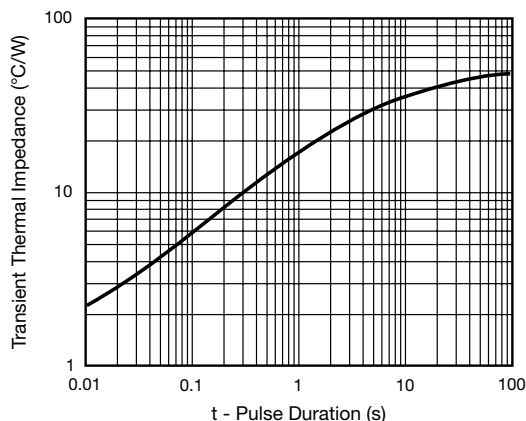
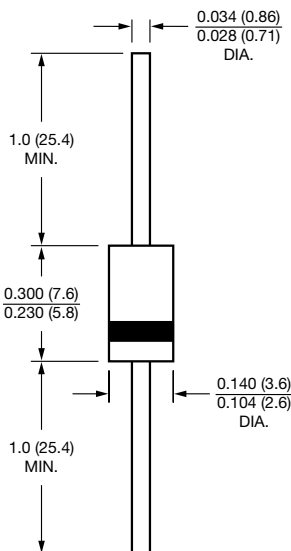


Fig. 6 - Typical Transient Thermal Impedance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-204AC (DO-15)





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