

Axial lead diode

Schottky barrier rectifiers diodes

SB3020...SB3040

Forward Current: 30 A

Reverse Voltage: 20 to 40 V

Preliminary Data

Features

- Max. solder temperature: 260 °C
- Plastic material has UL classification 94V-0

Mechanical Data

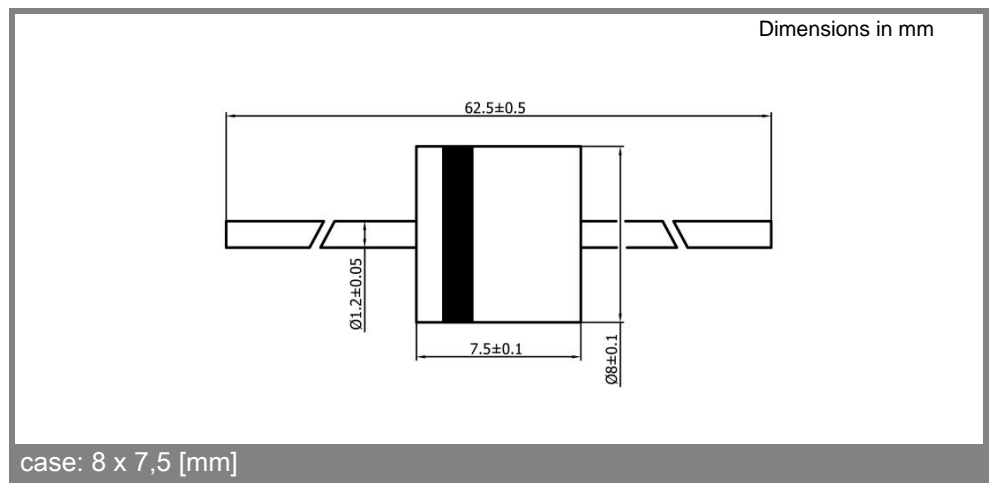
- Plastic case: 8 x 7,5 [mm]
- Weight approx.: 1,5 g
- Terminals: plated terminals solderable per MIL-STD-750
- Mounting position: any
- Standard packaging: 500 pieces per ammo or 1000 pieces per reel

- 1) Valid, if leads are kept at ambient temperature at a distance of 0 mm from case
- 2) $I_F = 5 \text{ A}$, $T_J = 25 \text{ °C}$, $V_F < 0,5 \text{ V}$ @ $I_F = 30 \text{ A}$
- 3) $T_A = 25 \text{ °C}$
- 4) Thermal resistance from junction to lead/terminal at a distance 0 mm from case
- 5) Max. junction temperature $T_J \leq 150 \text{ °C}$ ($V_R \leq 80 \% V_{RRM}$) in reverse mode and $T_J \leq 200 \text{ °C}$ in bypass mode

| Type | Repetitive peak reverse voltage | Surge peak reverse voltage | Max. reverse recovery time | Max. forward voltage |
|---------|---------------------------------|----------------------------|---|----------------------|
| | V_{RRM} V | V_{RSM} V | $I_F = - \text{A}$ $I_R = - \text{A}$ $I_{RR} = - \text{A}$ t_{rr} ns | $V_F^{(2)}$ |
| SB 3020 | 20 | 20 | - | 0,37 |
| SB 3030 | 30 | 30 | - | 0,37 |
| SB 3040 | 40 | 40 | - | 0,37 |

| Absolute Maximum Ratings | | $T_A = 25 \text{ °C}$, unless otherwise specified | |
|--------------------------|---|---|------------------|
| Symbol | Conditions | Values | Units |
| I_{FAV} | Max. averaged fwd. current, R-load, $T_A = 50 \text{ °C}$ ¹⁾ | 30 | A |
| I_{FRM} | Repetitive peak forward current $f > 15 \text{ Hz}$ ¹⁾ | 90 | A |
| I_{FSM} | Peak forward surge current 50 Hz half sinus-wave ³⁾ | 700 | A |
| i^2t | Rating for fusing, $t < 10 \text{ ms}$ ³⁾ | 2450 | A ² s |
| R_{thA} | Max. thermal resistance junction to ambient ¹⁾ | | K/W |
| R_{thL} | Max. thermal resistance junction to terminals ⁴⁾ | 2,5 | K/W |
| T_j | Operating junction temperature | - 50 ... + 150 ($T_J \leq 200 \text{ °C}$ in bypass mode ⁵⁾) | °C |
| T_s | Storage temperature | - 50 ... + 175 | °C |

| Characteristics | | $T_A = 25 \text{ °C}$, unless otherwise specified | |
|-----------------|---|--|-------|
| Symbol | Conditions | Values | Units |
| I_R | Maximum leakage current, $T_j = 25 \text{ °C}$; $V_R = V_{RRM}$ | <600 | µA |
| | $T_j = 100 \text{ °C}$; $V_R = V_{RRM}$ | 35 (typ.) | mA |
| C_j | Typical junction capacitance (at MHz and applied reverse voltage of V) | - | pF |
| Q_{rr} | Reverse recovery charge ($U_R = V$; $I_F = A$; $dI_F/dt = A/ms$) | - | µC |
| E_{RSM} | Non repetitive peak reverse avalanche energy ($I_R = \text{mA}$; $T_j = \text{°C}$; inductive load switched off) | - | mJ |



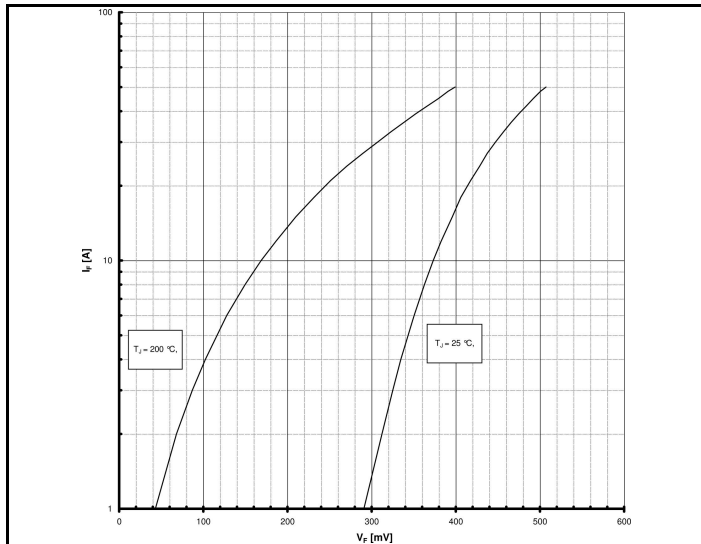


Fig. 1, Forward characteristics (typical values)

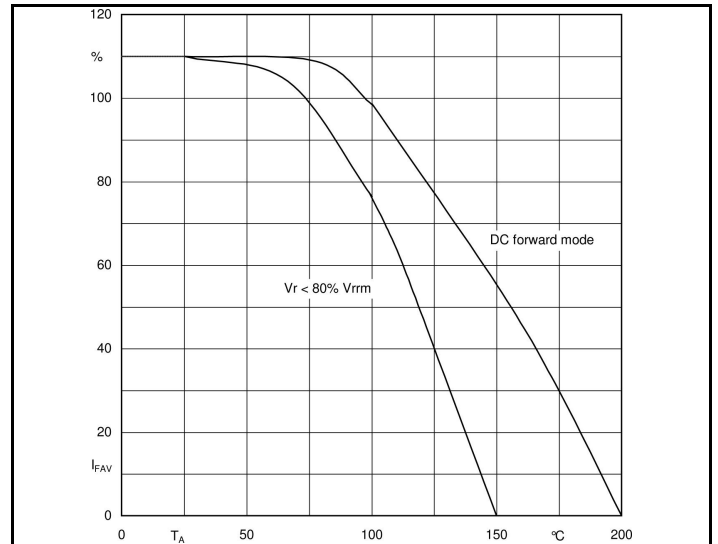


Fig. 2, Rated forward current vs. ambient temperature ¹⁾

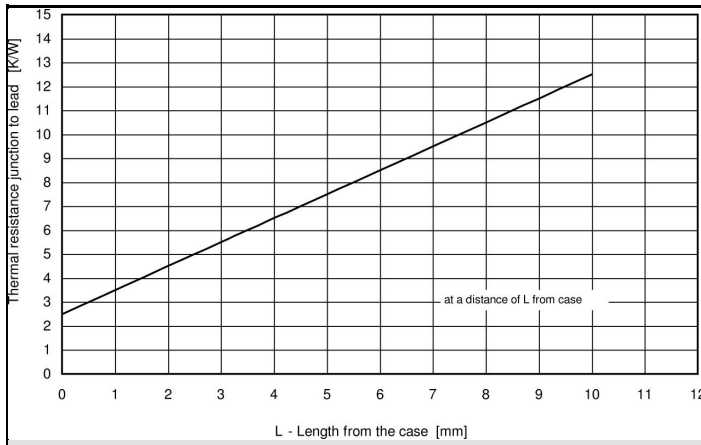


Fig. 3 Thermal resistance versus distance from case