

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

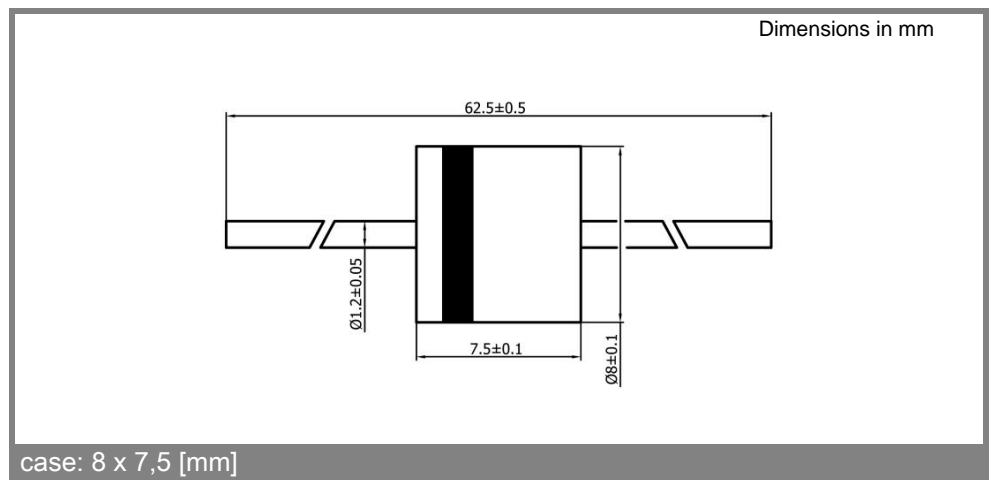
- Plastic case: 8 x 7,5 [mm]
- Weight approx.: 1,5 g
- Terminals: plated terminals solderable per MIL-STD-750
- Mounting position: any
- Standard packaging: 500 pieces per ammo or 1000 pieces per reel

- 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 V_{RRM} V	Surge peak reverse voltage V_{RSM} V	Max. reverse recovery time $I_F = - \text{A}$ $I_R = - \text{A}$ $I_{RR} = - \text{A}$ t_{rr} ns	Max. forward voltage $V_F^{(2)}$
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



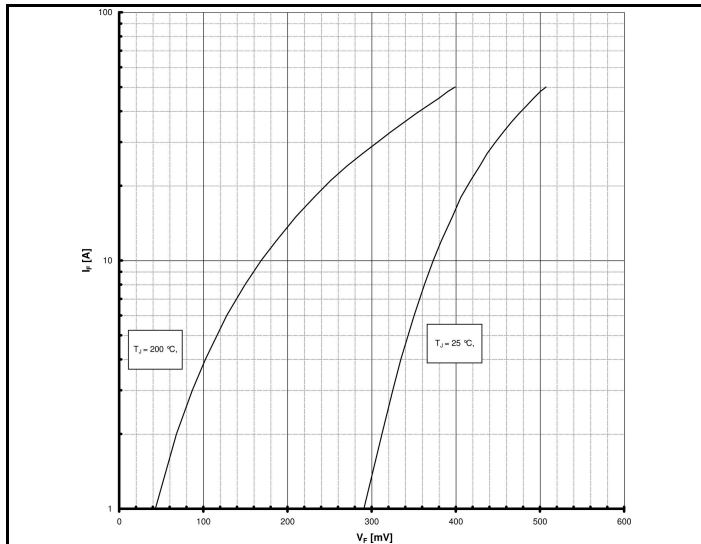


Fig. 1, Forward characteristics (typical values)

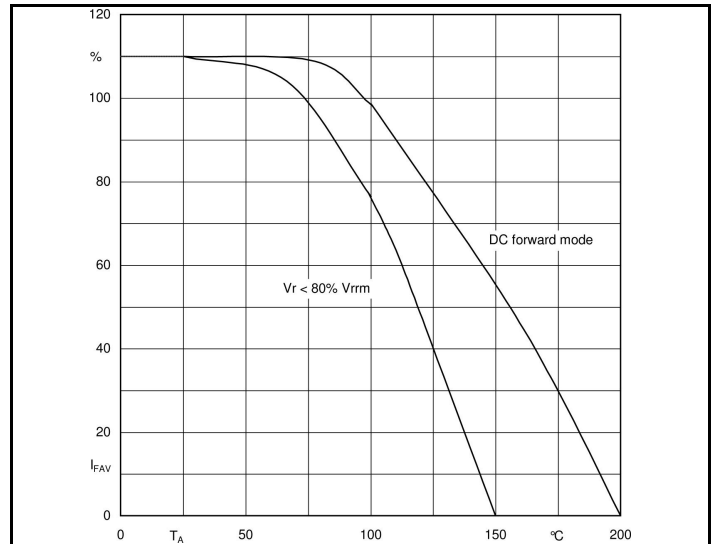


Fig. 2, Rated forward current vs. ambient temperature ¹⁾

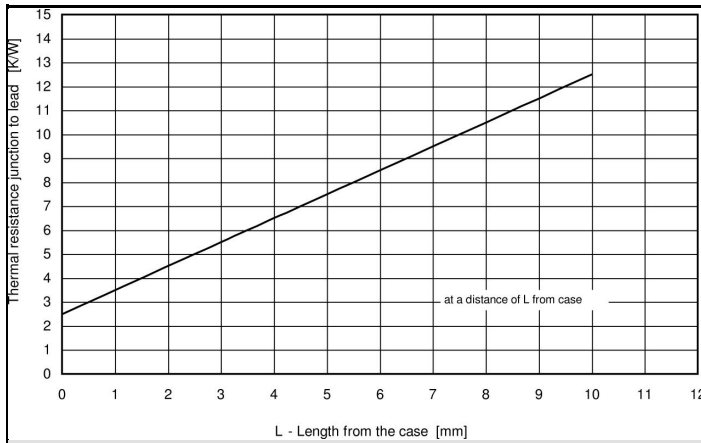


Fig. 3 Thermal resistance versus distance from case