

## Axial lead diode

## Schottky barrier rectifiers diodes

### SB 2020TL ... SB 2040TL

**Forward Current: 20 A**

**Reverse Voltage: 20 to 40 V**

Preliminary Data

### Features

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

### Mechanical Data

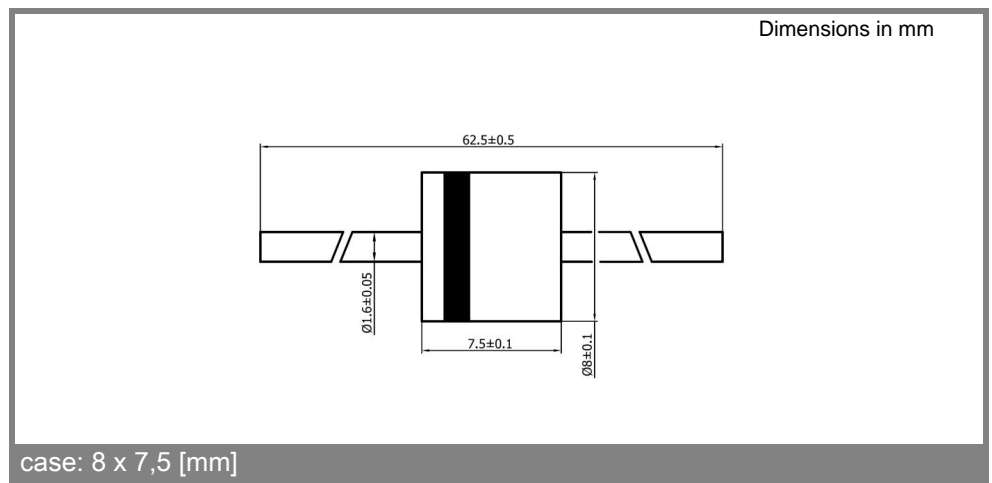
- Plastic case: 8 x 7,5 [mm]
- Weight approx.: 1,8 g
- Terminals: plated terminals solderable per MIL-STD-750
- Mounting position: any
- Standard packaging: 500 pieces per ammo or 1000 pieces per reel

- 1) Valid, if leads are kept at  $T_A$  at a distance of 10 mm from case
- 2)  $I_F = 5 \text{ A}$ ,  $V_F = 0,5 \text{ V}$  @  $I_F = 20 \text{ A}$ ,  $T_j = 25 \text{ °C}$
- 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  $T_j \leq 200 \text{ °C}$  in bypass mode / DC forward 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 2020TL	20	20	-	0,39
SB 2030TL	30	30	-	0,39
SB 2040TL	40	40	-	0,39

Absolute Maximum Ratings		$T_A = 25 \text{ °C}$ , unless otherwise specified	
Symbol	Conditions	Values	Units
$I_{FAV}$	Max. averaged fwd. current, R-load, $T_A = 50 \text{ °C}$ <sup>1)</sup>	20	A
$I_{FRM}$	Repetitive peak forward current $f > 15 \text{ Hz}$ <sup>1)</sup>	70	A
$I_{FSM}$	Peak forward surge current 50 Hz half sinus-wave <sup>3)</sup>	550	A
$i^2t$	Rating for fusing, $t < 10 \text{ ms}$ <sup>3)</sup>	1500	A <sup>2</sup> s
$R_{thA}$	Max. thermal resistance junction to ambient <sup>1)</sup>		K/W
$R_{thL}$	Max. thermal resistance junction to terminals <sup>4)</sup>	1,8	K/W
$T_j$	Operating junction temperature	- 50 ... + 150 ( $T_j \leq 200 \text{ °C}$ in bypass mode <sup>5)</sup> )	°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, $T_j = 25 \text{ °C}$ ; $V_R = V_{RRM}$	<500	µA
	$T_j = 100 \text{ °C}$ ; $V_R = V_{RRM}$	30 (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



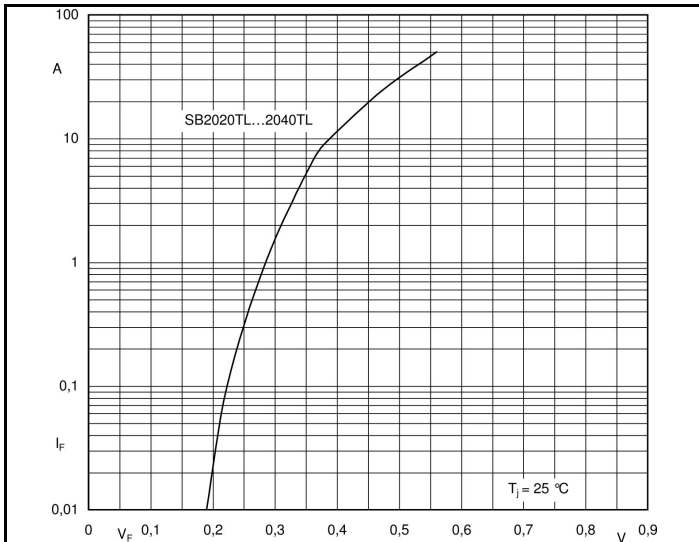


Fig. 1, Forward characteristic (typical values)

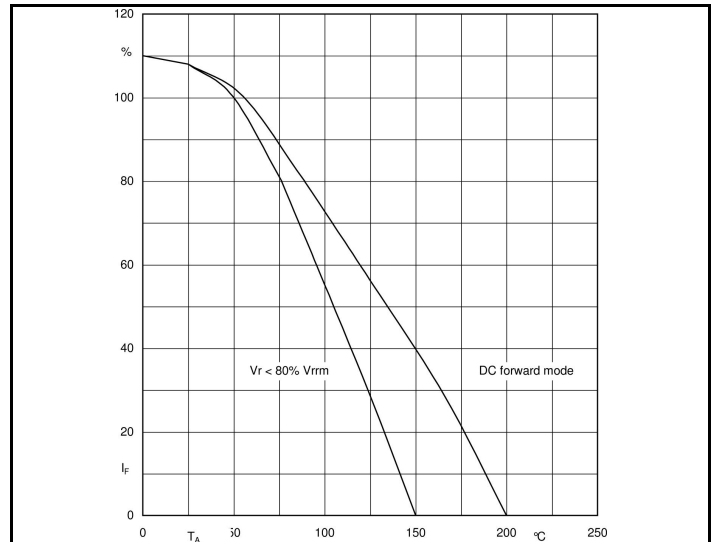


Fig. 2, Rated forward current vs. ambient temperature <sup>1)</sup>

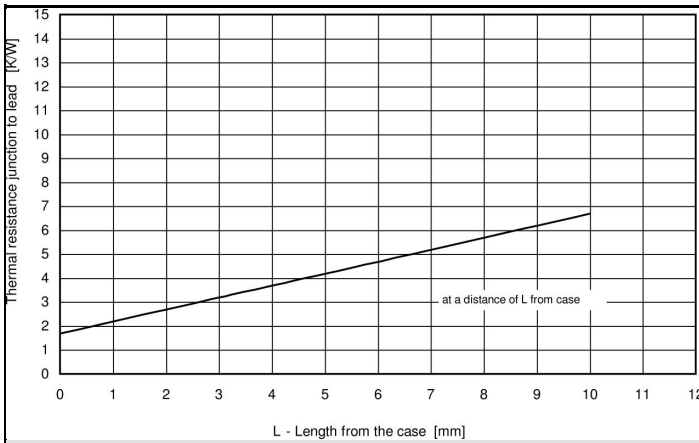


Fig. 3, Thermal resistance versus distance from case