

Axial lead diode

Schottky barrier rectifiers diodes

SB 1020TL...SB 1045TL

Forward Current: 8 A

Reverse Voltage: 20 to 45 V

Preliminary Data

Features

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

Mechanical Data

- Plastic case: 5,4 x 7,5 [mm]
- Weight approx.: 1,7 g
- Terminals: plated terminals solderable per MIL-STD-750
- Mounting position: any
- Standard packaging: 1250 pieces per ammo or per reel

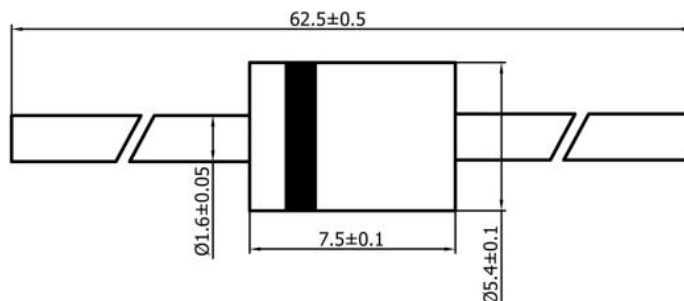
- 1) Valid, if leads are kept at T_A at a distance of 10 mm from case
- 2) $I_F = 5 \text{ A}$, $T_j = 25^\circ\text{C}$
- 3) $T_A = 25^\circ\text{C}$
- 4) Thermal resistance from junction to lead/terminal at a distance 0 mm from case
- 5) Max. junction temperature $T_j \leq 175^\circ\text{C}$ in reverse mode $V_R \leq 50\%V_{RRM}$, $T_j \leq 200^\circ\text{C}$ 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	$I_F = -A$ $I_R = -A$ $I_{RR} = -A$ t_{rr} ns	$V_F^{(2)}$
SB 1020TL	20	20	-	0,47
SB 1030TL	30	30	-	0,47
SB 1040TL	40	40	-	0,47
SB 1045TL	45	45	-	0,47

Absolute Maximum Ratings		$T_A = 25^\circ\text{C}$, unless otherwise specified	
Symbol	Conditions	Values	Units
I_{FAV}	Max. averaged fwd. current, R-load, $T_A = 50^\circ\text{C}^{(1)}$	10	A
I_{FRM}	Repetitive peak forward current $f > 15 \text{ Hz}^{(1)}$	30	A
I_{FSM}	Peak forward surge current 50 Hz half sinus-wave $^{(3)}$	225	A
i^2t	Rating for fusing, $t < \text{ms}^{(3)}$	250	A ² s
R_{thA}	Max. thermal resistance junction to ambient $^{(1)}$		K/W
R_{thL}	Max. thermal resistance junction to terminals $^{(4)}$	2,7	K/W
T_j	Operating junction temperature	- 50 ... + 150 ($T_j \leq 200^\circ\text{C}^{(5)}$)	$^\circ\text{C}$
T_s	Storage temperature	- 50 ... + 175	$^\circ\text{C}$

Characteristics		$T_A = 25^\circ\text{C}$, unless otherwise specified	
Symbol	Conditions	Values	Units
I_R	Maximum leakage current, $T_j = 25^\circ\text{C}$; $V_R = V_{RRM}$	<400	μA
	$T_j = 100^\circ\text{C}$; $V_R = V_{RRM}$	<18	mA
C_j	Typical junction capacitance (at MHz and applied reverse voltage of V)	-	pF
Q_{rr}	Reverse recovery charge ($U_R = V$; $I_F = A$; $dI_F/dt = \text{A/ms}$)	-	μC
E_{RSM}	Non repetitive peak reverse avalanche energy ($I_R = \text{mA}$; $T_j = ^\circ\text{C}$; inductive load switched off)	-	mJ

Dimensions in mm



case: 5,4 x 7,5 [mm]

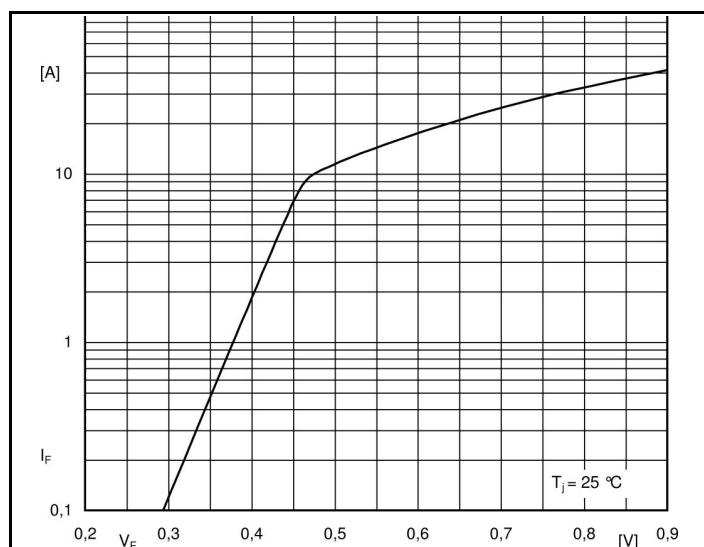


Fig. 1 Forward characteristics (typical values)

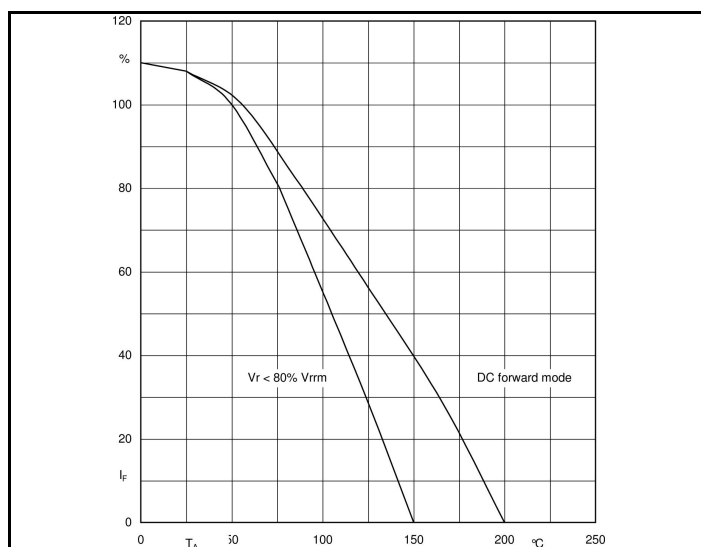


Fig. 2 Rated forward current vs. ambient temperature ¹⁾

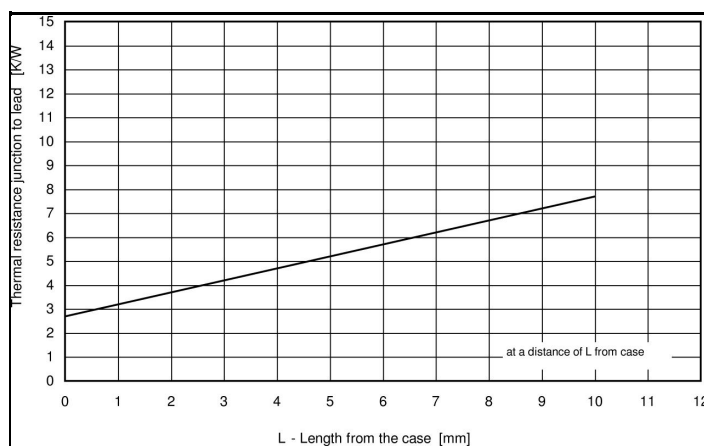


Fig. 3 Thermal resistance versus distance from case