

Axial Lead Diode

Schottky barrier rectifier diodes

Forward Current: 15 A

Reverse Voltage: 20 to 100 V

SB 1520S ... SB 15100S

Features

- Max. solder temperature: 260°C
- Plastic material has UL classification 94V-0
- Electrostatic discharge immunity test IEC 1000-4-2 (C=150 pF, R=150 Ohm): voltage class 20 kV

Typical Applications*

- Designed as Bypass Diodes for Solar Panels, protection application

Mechanical Data

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

Footnotes

- ¹⁾ $I_F = - A, I_R = - A, I_{RR} = - A$
- ²⁾ $I_F = 5 A, T_j = 25 ^\circ C$
- ³⁾ $I_F = 15 A, T_j = 25 ^\circ C$
- ⁴⁾ Valid, if leads are kept at T_A at a distance of 10 mm from case
- ⁵⁾ Max. junction temperature $T_j \leq 200 ^\circ C$ in bypass mode / DC forward mode
- ⁶⁾ Thermal resistance from junction to lead/terminal at distance 0 mm from case



Diode

Type	Repetitive peak reverse voltage V_{RRM} V	Surge peak reverse voltage V_{RSM} V	Max. reverse recovery time $t_{rr}^{1)}$ ns	Max. forward voltage $V_F^{2)}$ V	Max. forward voltage $V_F^{3)}$ V
SB 1520S	20	20	-	0,43	0,52
SB 1530S	30	30	-	0,43	0,52
SB 1540S	40	40	-	0,43	0,52
SB 1545S	45	45	-	0,43	0,52
SB 1550S	50	50	-	0,6	-
SB 1560S	60	60	-	0,6	-
SB 1590S	90	90	-	0,74	-
SB 15100S	100	100	-	0,74	-

Absolute Maximum Ratings				
Symbol	Conditions	Values	Unit	
$T_a = 25 ^\circ C$, unless otherwise specified				
I_{FAV}	R-load, ⁴⁾ $T_a = 50 ^\circ C$	15	A	
I_{FRM}	$f > 15 \text{ Hz}$, ⁴⁾	60	A	
I_{FSM}	half sinus-wave $T_a = 25 ^\circ C$	$t_p = 10 \text{ ms}$	320	A
		$t_p = 8.3 \text{ ms}$		A
i^2t	$T_a = 25 ^\circ C$	$t_p = 10 \text{ ms}$	512	A ² s
		$t_p = 8.3 \text{ ms}$		A ² s
T_j	Operating junction temperature	-50 ... +150	°C	
T_j	DC forward (bypass) mode ⁵⁾	-50 ... +200	°C	
T_{stg}	Storage temperature	-50 ... +175	°C	

Characteristics					
Symbol	Conditions	min.	typ.	max.	Unit
$T_a = 25 ^\circ C$, unless otherwise specified					
I_R	$T_j = 25 ^\circ C, V_R = V_{RRM}$			500	μA
I_R	$T_j = 100 ^\circ C, V_R = V_{RRM}$			25	mA
C_j	at 1 MHz and applied reverse voltage of 4 V		-		pF
E_{RSM}	$L = 60 \text{ mH}, T_j = 25 ^\circ C$, inductive load switched off		-		mJ
R_{thja}	⁴⁾			-	K/W
R_{thjL}	⁶⁾			4	K/W

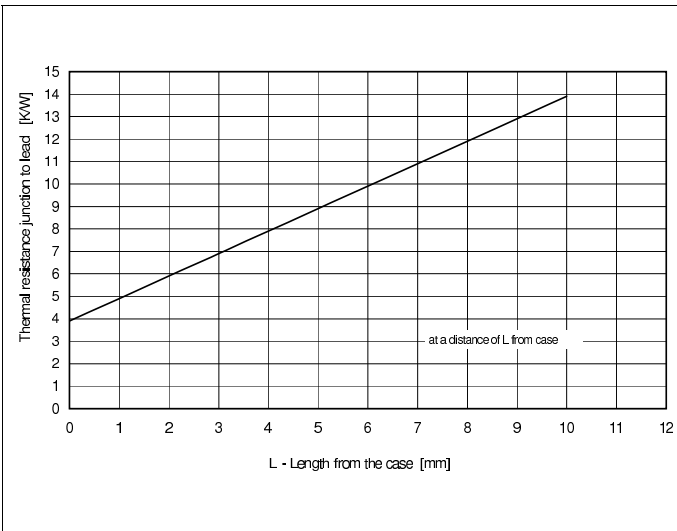
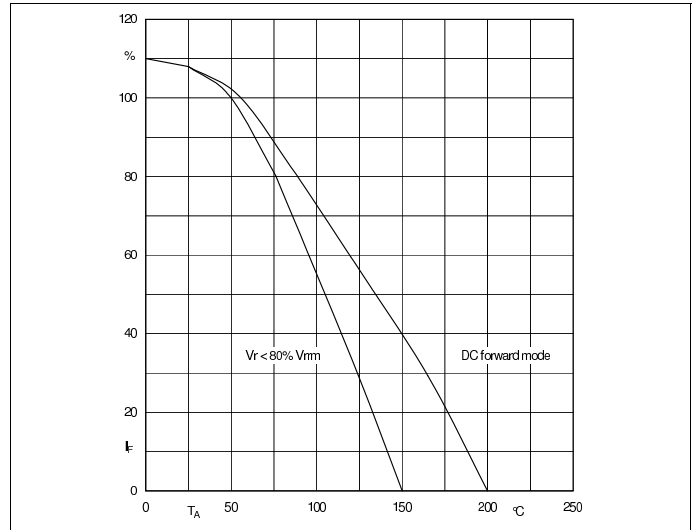
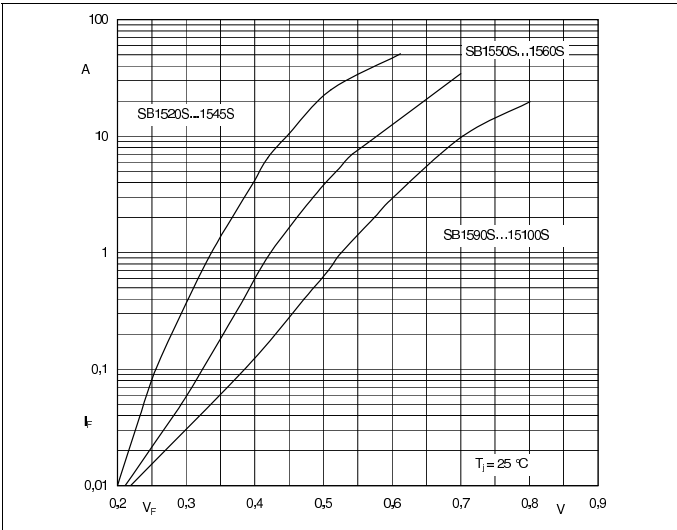
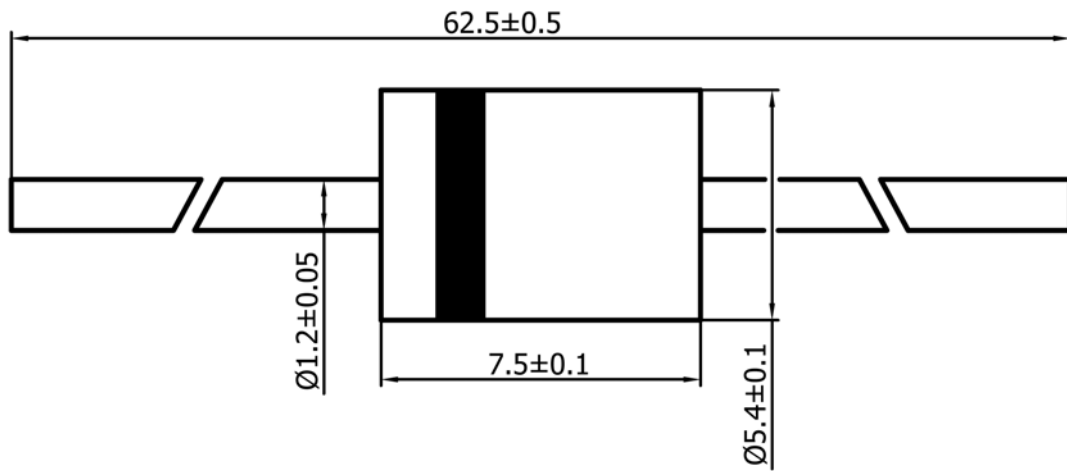


Fig. 3: Thermal resistance versus distance from case



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

This is an electrostatic discharge sensitive device (ESDS), international standard IEC 60747-1, Chapter IX

* The specifications of our components may not be considered as an assurance of component characteristics. Components have to be tested for the respective application. Adjustments may be necessary. The use of SEMIKRON products in life support appliances and systems is subject to prior specification and written approval by SEMIKRON. We therefore strongly recommend prior consultation of our staff.