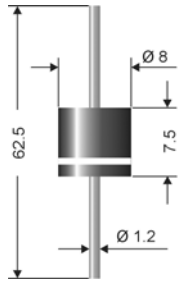
SBH 3020 ... SBH 3060



Axial Lead Diode

High temperature schottky barrier diodes

Forward Current: 30 A

Reverse Voltage: 20 to 60 V

SBH 3020 ... SBH 3060

Preliminary Data

Features

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

Typical Applications*

- Designed as Bypass Diodes for Solar Panels
- Protection application

Mechanical Data

- Plastic case: 8 x 7,5 [mm]
- Weight approx.: 2,4 g
- Terminals: plated terminals solderable per MIL-STD-750
- Mounting position: any
- Standard packaging: 500 pieces per ammo or 1000 pieces per reel

Footnotes

1) I_F = - A, I_R = - A, I_{RR} = - A
2) I_F = 5 A, T_j = 25 °C
3) I_F = 30 A, T_j = 25 °C
4) Valid, if leads are kept at T_A at a distance of 0 mm from case
5) Max. junction temperature T_j ≤175 °C in reverse mode (V_R = 80% V_{RRM}) in reverse mode, T_j≤ 200 °C in bypass mode
6) Thermal resistance from junction to lead/ terminal at distance 0 mm from case

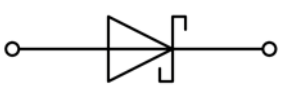
Type	Repetitive peak reverse voltage V_{RRM} V	Surge peak reverse voltage V_{RSM} V	Max. reverse recovery time t_{rr} 1) ns	Max. forward voltage V_F 2) V	Max. forward voltage V_F 3) V
SBH 3020	20	20	-	0,43	0,6
SBH 3030	30	30	-	0,43	0,6
SBH 3040	40	40	-	0,43	0,6
SBH 3045	45	45	-	0,43	0,6
SBH 3050	50	50	-	0,53	0,7
SBH 3060	60	60	-	0,53	0,7

Absolute Maximum Ratings

Symbol	Conditions		Values	Unit
Ta = 25 °C, unless otherwise specified				
I_{FAV}	R-load, 4), T_a = 50 °C		30	A
I_{FRM}	f > 15 Hz, 4)		90	A
I_{FSM}	half sinus-wave	t_p = 10 ms	700	A
	T_a = 25 °C	t_p = 8.3 ms		A
i^2t	T_a = 25 °C	t_p = 10 ms	2450	A^2s
		t_p = 8.3 ms		A^2s
T_j	Operating junction temperature		-50 ... +175	°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
Ta = 25 °C, unless otherwise specified					
I_R	T_j = 25 °C, V_R = V_{RRM}			150	µA
I_R	T_j = 100 °C, V_R = V_{RRM}				mA
C_j	at 1 MHz and applied reverse voltage of 4 V		-		pF
E_{RSM}	L = 60 mH, T_j = 25 °C, inductive load switched off		-		mJ
$R_{th(j-a)}$	4)			-	K/W
$R_{th(j-L)}$	6)			2.5	K/W



Diode

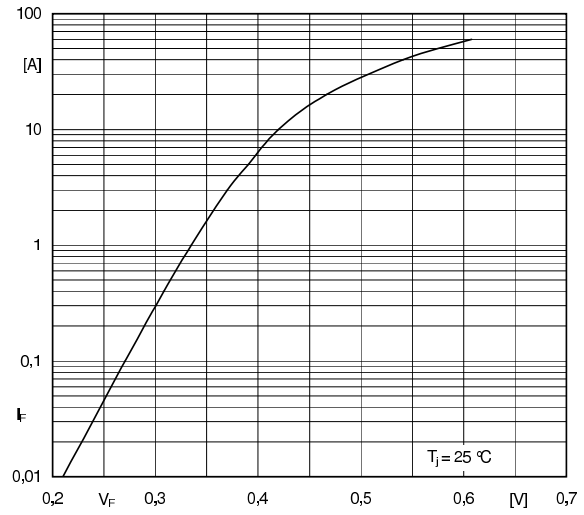


Fig.1: Forward characteristics (typical value)

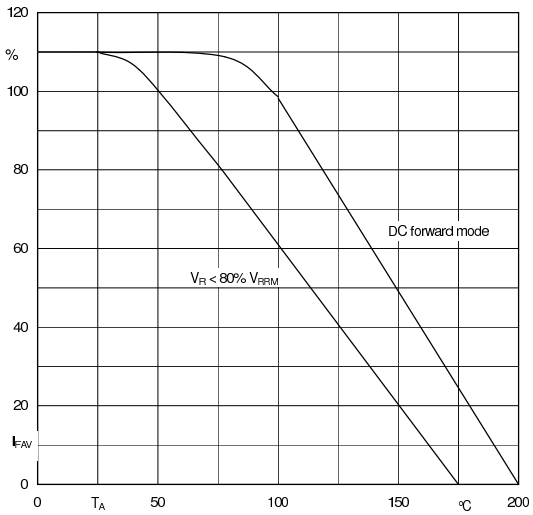


Fig.2: Rated forward current vs. ambient temperature [1)]

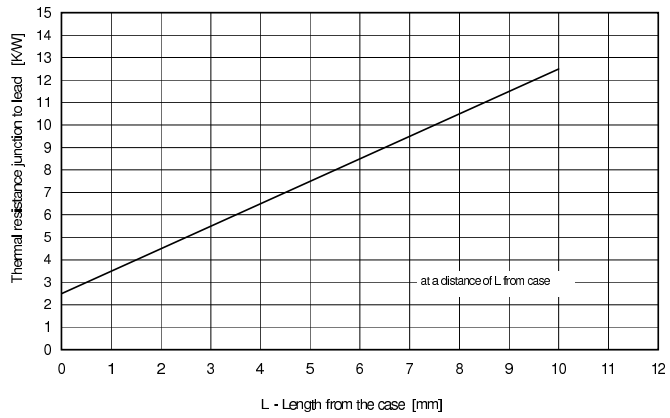
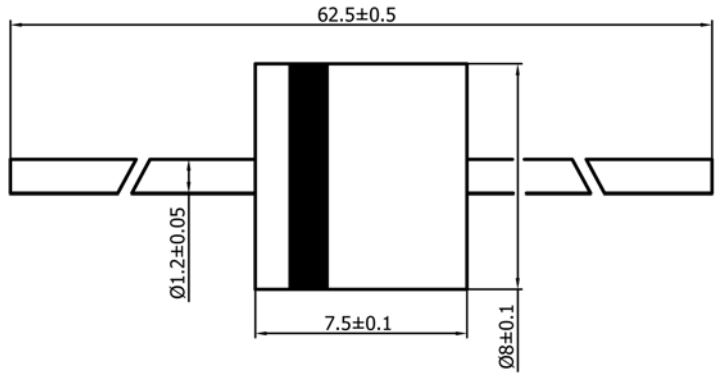


Fig.3: Thermal resistance versus distance from case



Case: 8 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.