

Schottky

High Performance Schottky Diode
Low Loss and Soft Recovery
Single Diode

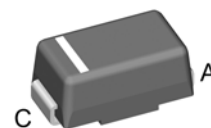
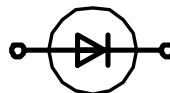
$$V_{RRM} = 40 \text{ V}$$

$$I_{FAV} = 2 \text{ A}$$

$$V_F = 0.42 \text{ V}$$

Part number (Marking on product)

DSB 2 I 40 SB (S2FBB)



Features / Advantages:

- Very low V_f
- Extremely low switching losses
- Low I_{rm} -values
- Improved thermal behaviour
- High reliability circuit operation
- Low voltage peaks for reduced protection circuits
- Low noise switching
- Low losses

Applications:

- Rectifiers in switch mode power supplies (SMPS)
- Free wheeling diode in low voltage converters
- Decoupling diode

Package:

- SMB (DO-214AA)
- Industry standard outline
 - Epoxy meets UL 94V-0
 - RoHS compliant

Ratings

Symbol	Definition	Conditions	min.	typ.	max.	Unit
V_{RRM}	max. repetitive reverse voltage	$T_{VJ} = 25^\circ\text{C}$			40	V
I_R	reverse current	$V_R = 40 \text{ V}$ $T_{VJ} = 25^\circ\text{C}$			0.1	mA
		$V_R = 40 \text{ V}$ $T_{VJ} = 125^\circ\text{C}$			25	mA
V_F	forward voltage	$I_F = 2 \text{ A}$ $T_{VJ} = 25^\circ\text{C}$			0.50	V
		$I_F = 4 \text{ A}$ $T_{VJ} = 25^\circ\text{C}$			0.60	V
		$I_F = 2 \text{ A}$ $T_{VJ} = 125^\circ\text{C}$			0.42	V
		$I_F = 4 \text{ A}$ $T_{VJ} = 125^\circ\text{C}$			0.52	V
I_{FAV}	average forward current	rectangular, $d = 0.5$ $T_L = 125^\circ\text{C}$			2	A
V_{F0}	threshold voltage	} for power loss calculation only $T_L = 150^\circ\text{C}$				V
r_F	slope resistance					m Ω
R_{thJL}	thermal resistance junction to lead*				25	K/W
T_{VJ}	virtual junction temperature		-55		150	$^\circ\text{C}$
P_{tot}	total power dissipation	$T_L = 25^\circ\text{C}$			5	W
I_{FSM}	max. forward surge current	$t_p = 10 \text{ ms (50 Hz), sine}$ $T_{VJ} = 45^\circ\text{C}$			75	A
C_j	junction capacitance	$V_R = 5 \text{ V}; f = 1 \text{ MHz}$ $T_{VJ} = 25^\circ\text{C}$			150	pF
E_{AS}	non-repetitive avalanche energy	$I_{AS} = \text{A}; L = 100 \mu\text{H}$ $T_{VJ} = 25^\circ\text{C}$			tbd	mJ
I_{AR}	repetitive avalanche current	$V_A = 1.5 \cdot V_R$ typ.; $f = 10 \text{ kHz}$			tbd	A

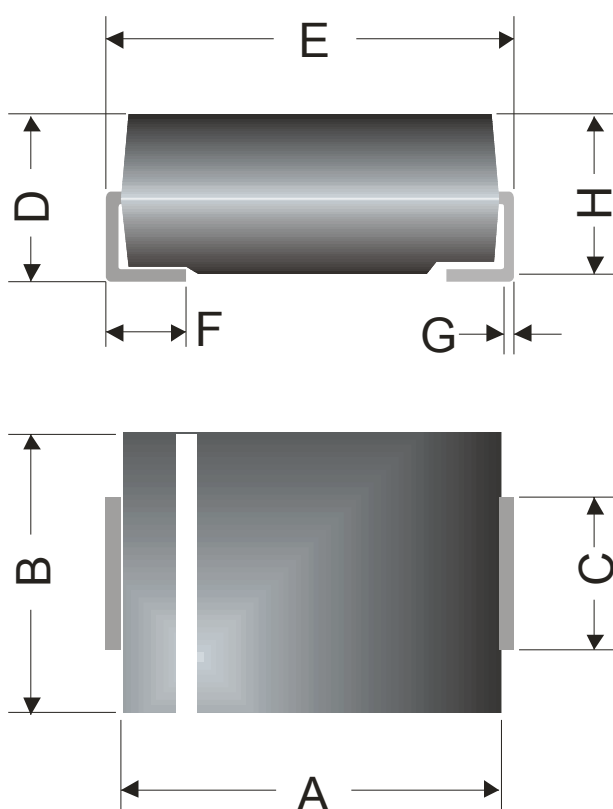
* mounted on 1 inch square PCB

Symbol	Definition	Conditions	Ratings			Unit
			min.	typ.	max.	
I_{RMS}	RMS current	per pin*				A
R_{thJA}	thermal resistance junction to ambient			70		K/W
M_D	mounting torque					Nm
F_c	mounting force with clip					N
T_{stg}	storage temperature		-55		150	°C
Weight				0.1		g

* I_{RMS} is typically limited by: 1. pin-to-chip resistance; or by 2. current capability of the chip.

In case of 1, a common cathode/anode configuration and a non-isolated backside, the whole current capability can be used by connecting the backside.

Outlines SMB (DO-214AA)



Dim.	Millimeters		Inches	
	min	max	min	max
A	4.06	4.57	0.160	0.180
B	3.30	3.94	0.130	0.155
C	1.95	2.20	0.077	0.087
D	2.13	2.44	0.084	0.096
E	5.21	5.59	0.205	0.220
F	0.76	1.52	0.030	0.060
G	0.15	0.31	0.006	0.012
H	2.00	2.20	0.079	0.087