

Schottky

High Performance Schottky Diode
Low Loss and Soft Recovery
Single Diode

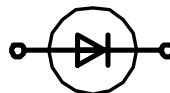
$$V_{RRM} = 40 \text{ V}$$

$$I_{FAV} = 1 \text{ A}$$

$$V_F = 0.40 \text{ V}$$

Part number (Marking on product)

DSB 1 I 40 SA (S1FB)



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:

- SMA (DO-214AC)
- 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
		$V_R = 40 \text{ V}$ $T_{VJ} = 125^\circ\text{C}$			15	mA
V_F	forward voltage	$I_F = 1 \text{ A}$ $T_{VJ} = 25^\circ\text{C}$			0.48	V
		$I_F = 2 \text{ A}$ $T_{VJ} = 25^\circ\text{C}$			0.58	V
		$I_F = 1 \text{ A}$ $T_{VJ} = 125^\circ\text{C}$			0.40	V
		$I_F = 2 \text{ A}$ $T_{VJ} = 125^\circ\text{C}$			0.50	V
I_{FAV}	average forward current	rectangular, $d = 0.5$ $T_L = 125^\circ\text{C}$			1	A
V_{F0} r_F	threshold voltage slope resistance	} for power loss calculation only $T_L = 150^\circ\text{C}$				V
						mΩ
R_{thJL}	thermal resistance junction to lead*				40	K/W
T_{VJ}	virtual junction temperature		-55		150	°C
P_{tot}	total power dissipation	$T_L = 25^\circ\text{C}$			3	W
I_{FSM}	max. forward surge current	$t_p = 10 \text{ ms (50 Hz), sine}$ $T_{VJ} = 45^\circ\text{C}$			45	A
C_j	junction capacitance	$V_R = \text{V}; f = 1 \text{ MHz}$ $T_{VJ} = 25^\circ\text{C}$			78	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

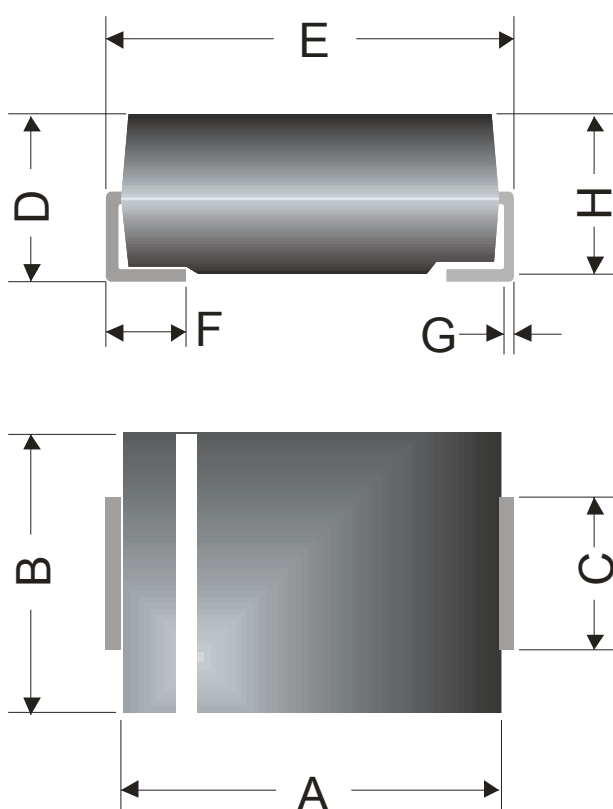
* mounted on 1 inch square PCB

Symbol	Definition	Conditions	Ratings			Unit
			min.	typ.	max.	
I_{RMS}	RMS current	per pin*				A
R_{thJA}	thermal resistance junction to ambient			80		K/W
M_D	mounting torque					Nm
F_c	mounting force with clip					N
T_{stg}	storage temperature		-55		150	°C
Weight				0.07		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 SMA (DO-214AC)



Dim.	Millimeters		Inches	
	min	max	min	max
A	3.99	4.50	0.157	0.177
B	2.54	2.79	0.100	0.110
C	1.25	1.65	0.049	0.065
D	1.98	2.29	0.078	0.090
E	4.93	5.28	0.194	0.208
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