

# Schottky

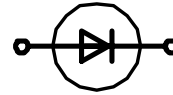
High Performance Schottky Diode  
Low Loss and Soft Recovery  
Single Diode

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

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

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

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

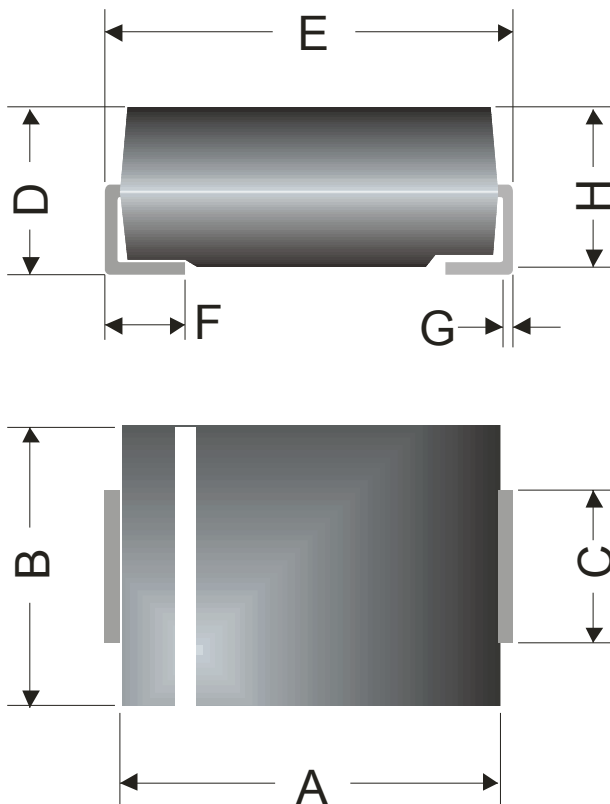
Symbol	Definition	Conditions	Ratings			Unit	
			min.	typ.	max.		
$V_{RRM}$	max. repetitive reverse voltage	$T_{VJ} = 25^\circ\text{C}$			40	V	
$I_R$	reverse current	$V_R = 40 \text{ V}$			0.1	mA	
		$V_R = 40 \text{ V}$			15	mA	
$V_F$	forward voltage	$I_F = 1 \text{ A}$			0.48	V	
		$I_F = 2 \text{ A}$			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, $d = 0.5$			1	A	
$V_{F0}$	threshold voltage	} for power loss calculation only				V	
$r_F$	slope resistance		$T_L = 150^\circ\text{C}$			m $\Omega$	
$R_{thJL}$	thermal resistance junction to lead*				40	K/W	
$T_{VJ}$	virtual junction temperature		-55		150	$^\circ\text{C}$	
$P_{tot}$	total power dissipation	$T_L = 25^\circ\text{C}$			3	W	
$I_{FSM}$	max. forward surge current	$t_p = 10 \text{ ms (50 Hz), sine}$			45	A	
$C_j$	junction capacitance	$V_R = \text{V}; f = 1 \text{ MHz}$			78	pF	
$E_{AS}$	non-repetitive avalanche energy	$I_{AS} = \text{A}; L = 100 \mu\text{H}$			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.	
$I_{RMS}$	<i>RMS current</i>	per pin*				A
$R_{thJA}$	<i>thermal resistance junction to ambient</i>			80		K/W
$M_D$	<i>mounting torque</i>					Nm
$F_C$	<i>mounting force with clip</i>					N
$T_{stg}$	<i>storage temperature</i>		-55		150	°C
<b>Weight</b>				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