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DSA 1 I 100 SA

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Schottky

High Performance Schottky Diode
Low Loss and Soft Recovery
Single Diode

$$V_{RRM} = 100 \text{ V}$$

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

$$V_F = 0.65 \text{ V}$$

Part number (Marking on product)

DSA 1 I 100 SA (S1KA)



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	$T_{VJ} = 25 \text{ }^\circ\text{C}$			100	V	
I_R	reverse current	$V_R = 100 \text{ V}$			0.01	mA	
		$V_R = 100 \text{ V}$			5	mA	
V_F	forward voltage	$I_F = 1 \text{ A}$			0.79	V	
		$I_F = 2 \text{ A}$			0.87	V	
		$I_F = 1 \text{ A}$	$T_{VJ} = 125 \text{ }^\circ\text{C}$			0.65	V
		$I_F = 2 \text{ A}$	$T_{VJ} = 125 \text{ }^\circ\text{C}$			0.75	V
I_{FAV}	average forward current	rectangular, $d = 0.5$			1	A	
V_{FO}	threshold voltage	} for power loss calculation only				V	
r_F	slope resistance					$m\Omega$	
R_{thJL}	thermal resistance junction to lead*				40	K/W	
T_{VJ}	virtual junction temperature		-55		175	$^\circ\text{C}$	
P_{tot}	total power dissipation	$T_L = 25 \text{ }^\circ\text{C}$			3	W	
I_{FSM}	max. forward surge current	$t_p = 10 \text{ ms}$ (50 Hz), sine	$T_{VJ} = 45 \text{ }^\circ\text{C}$		45	A	
C_j	junction capacitance	$V_R = 5 \text{ V}$; $f = 1 \text{ MHz}$	$T_{VJ} = 25 \text{ }^\circ\text{C}$		45	pF	
E_{AS}	non-repetitive avalanche energy	$I_{AS} = \text{A}$; $L = 100 \mu\text{H}$	$T_{VJ} = 25 \text{ }^\circ\text{C}$		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



DSA 1 I 100 SA

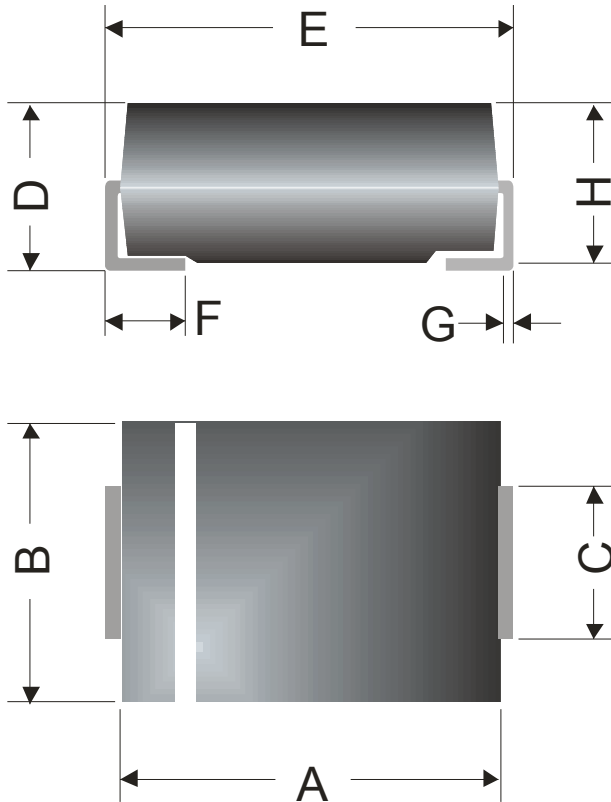
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Symbol	Definition	Conditions	Ratings			Unit
			min.	typ.	max.	
I_{RMS}	RMS current	per pin*				A
R_{thJA}	thermal resistance junction to ambient			80		K/W
M_D	mounting torque					Nm
F_C	mounting force with clip					N
T_{stg}	storage temperature		-55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

* Irms 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