SSC8K23GN2

P-Channel Enhancement Mode MOSFET with Schottky Diode

- **Features**

P-MOSFET

VDS	VGS	RDSon TYP	ID
-20V	±8V	60mR@-4V5	-3.4A
		75mR@-2V5	
		105mR@-1V8	

Schottky

VR	IR	VF	IO
20V	15uA	410mV@1A	2A

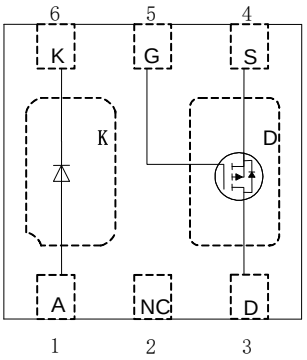
- **General Description**

SSC8K23GN2 combines a P-Channel enhancement mode power MOSFET which is produced with high cell density and DMOS trench technology and a low forward voltage schottky diode. the tiny and thin outline saves PCB consumption.

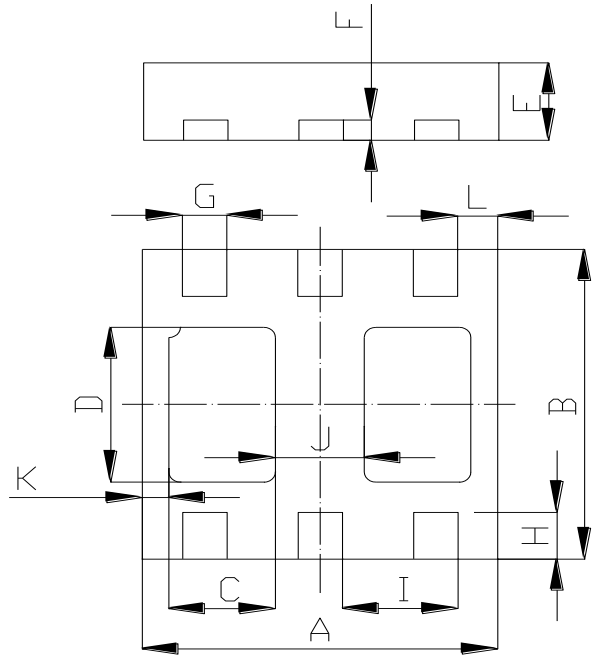
- **Applications**
  - Bidirectional blocking switch;
  - DC-DC conversion applications;
  - Li-battery charging;

- **Pin configuration**

Top View



- **Package Information**



Package:DFN2x2			
Unit:mm			
Dim	Min	Typ	Max
A	1.95	2	2.08
B	1.95	2	2.08
C	0.5	0.6	0.7
D	0.9	1	1.1
E	0.545	0.575	0.605
F	-	0.13	-
G	0.2	0.25	0.3
H	0.25	0.3	0.35
I	-	0.65	-
J	-	0.45	-
K	-	0.15	-
L	-	0.23	-

- **Absolute Maximum Ratings** @T_A=25℃ unless otherwise noted

Parameter		Symbol	Ratings	Unit
Drain-Source Voltage		V_{DS}	-20	V
Gate-Source Voltage		V_{GS}	±8	
Drain Current (Note 1)	Continuous	I_D	-3.4	A
	Pulsed		-25	
Schottky Reverse Voltage		V_R	20	V
Schottky Continuous Forward Current		I_F	2	A
Power Dissipation Derating above T_A = 25°C (Note 2)		P_d	1.2	W
Operating and Storage Temperature Range		T_J, T_{STG}	-55 to +150	°C

Note1: Devices mounted on FR4 PCB with minima soldering pad;

Note2: For a single chip.

- **Electrical Characteristics** @T_A=25℃ unless otherwise noted

Parameter (Note 3)	Symbol	Test Conditions	Min	Typ	Max	Unit
P-channel MOSFET						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D = -250uA	-20	--	--	V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} = -20V, V_{GS} = 0V	--	--	1	uA
Gate-Body Leakage	I_{GSS}	V_{GS} = ±8V, V_{DS} = 0V	--	--	±100	nA
Gate Threshold Voltage	$V_{GS(TH)}$	V_{DS} = V_{GS}, I_D = -250uA	-0.50	-0.70	-1.20	V
Static Drain-Source On-Resistance	$R_{DS\ (ON)}$	I_D = -1A,V_{GS} = -4.5V	--	60	99	mR
		I_D = -1A,V_{GS} = -2.5V	--	75	120	
		I_D = -1A,V_{GS} = -1.8V	--	105	180	
Turn-On Delay Time	$t_{d(on)}$	V_{DD} = -6V, R_L = 6R, I_D = −1A, V_{GEN} = -4.5V, R_G = 6R	--	20	--	ns
Turn-On Rise Time	t_r		--	18	--	
Turn-Off Delay Time	$t_{d(off)}$		--	300	--	
Turn-Off Fall Time	t_f		--	120	--	
Input Capacitance	C_{ISS}	V_{DS} = -6V, V_{GS} = 0V, f = 1.0 MHz	--	450	--	pF
Output Capacitance	C_{OSS}		--	180	--	
Reverse Transfer Capacitance	C_{RSS}		--	90	--	
Schottky Diode						
Forward Voltage Drop	V_F	I_F=1A	--	0.41	0.45	V
Maximum reverse leakage current	I_R	V_R=20V	--	15	200	uA

Note3: Short duration test pulse used to minimize self-heating effect.

- **Typical Performance Characteristics of P-Channel MOSFET**

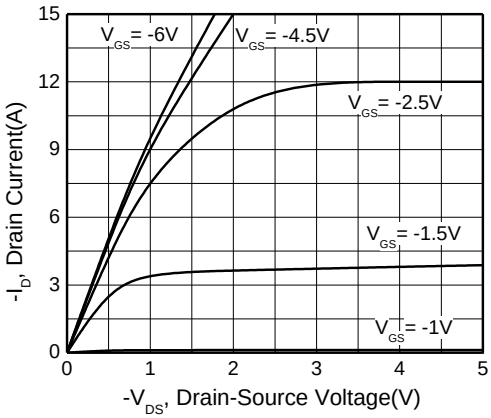


Fig 1. Output Characteristics

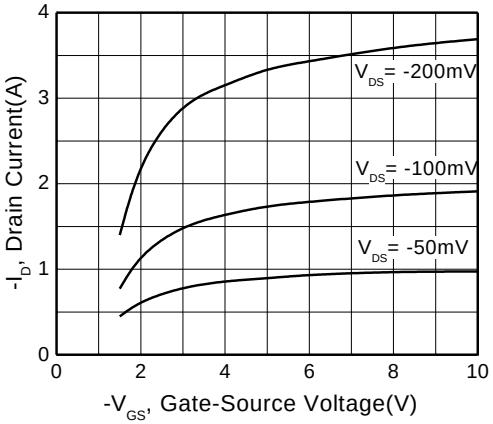


Fig 2. Transfer Characteristics

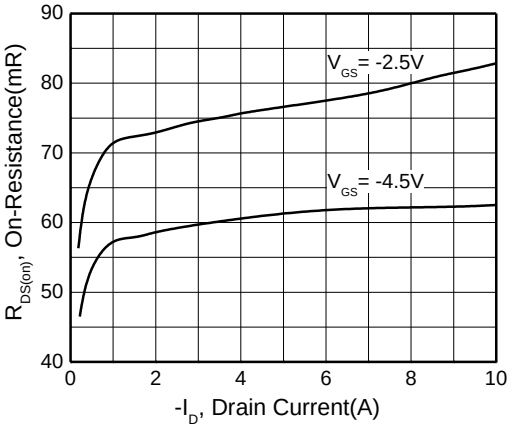


Fig 3. On-Resistance vs. Drain Current

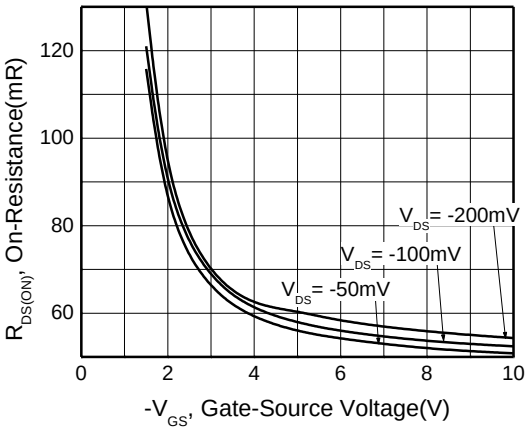


Fig 4. On-Resistance vs.Gate-Source Valtage

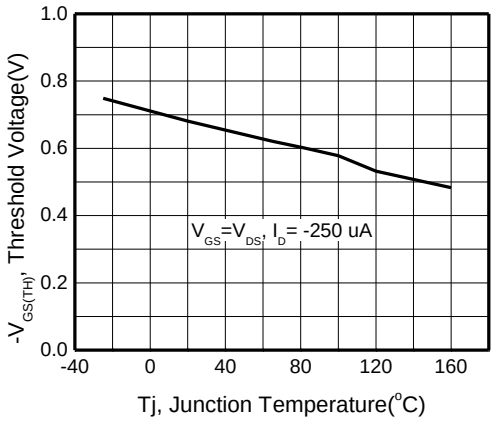


Fig 5. Threshold Voltage

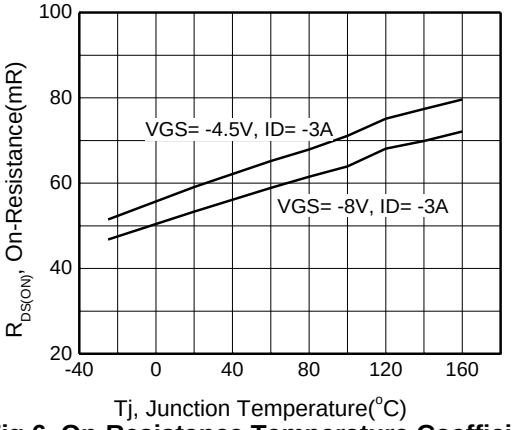


Fig 6. On-Resistance Temperature Coefficient

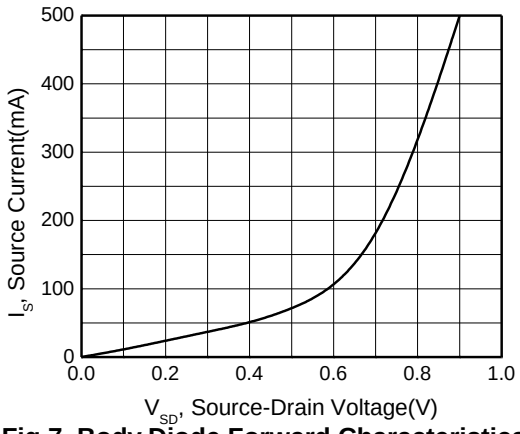


Fig 7. Body Diode Forward Characteristics

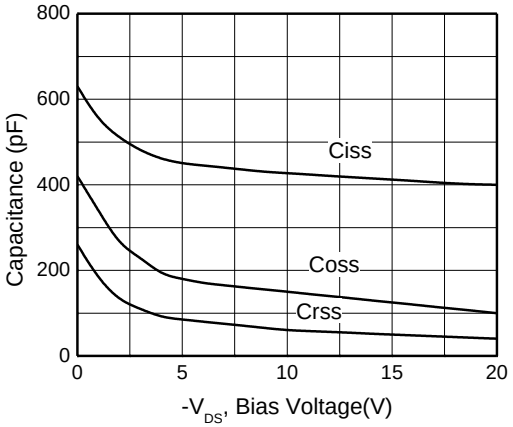


Fig 8. Capacitance

- **Typical Performance Characteristics of Schottky**

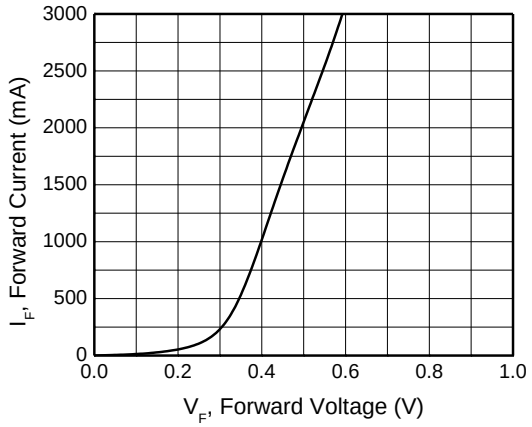


Figure 9. Schottky Forward Characteristics

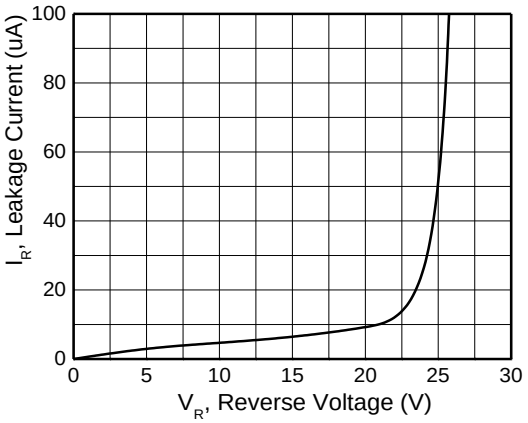


Figure10. Schottky Reverse Characteristics

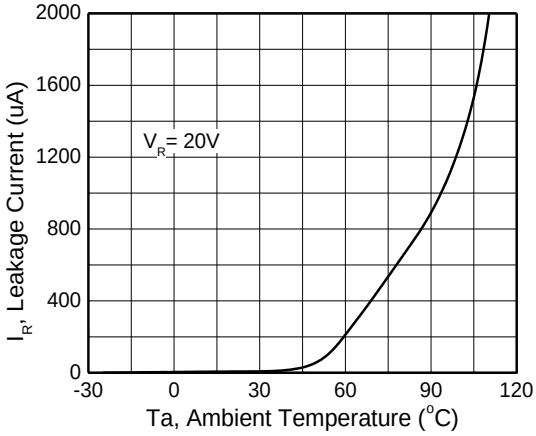


Figure 11. Leakage Current Vs. Temperature

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