

P-Channel Enhancement Mode MOSFET

● Features

VDS	VGS	RDSon TYP	ID
-20V	±12V	10mR@-4V5V	-18A
		13mR@-2V5	

● Applications

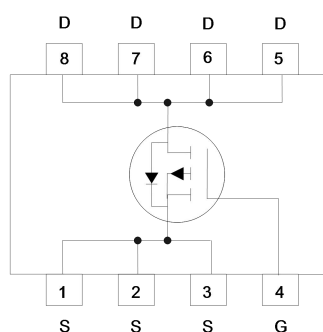
- Load Switch
- DCDC conversion
- NB battery

● Pin configuration

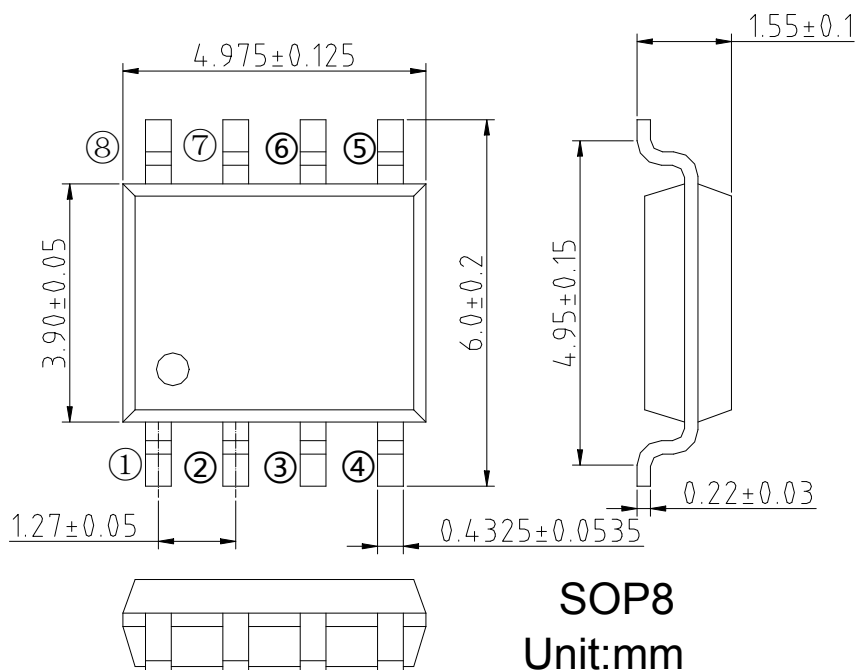
● General Description

This device is produced with high cell density, DMOS trench technology, which is especially used to minimize on-state resistance. This device is particularly suited for low voltage power management requiring a wide range of given voltage ratings(4.5V~25V) such as load switch and battery protection.

Top View



● Package Information





SSC8129GS1

Absolute Maximum Ratings @T_A = 25°C unless otherwise noted

Parameter		Symbol	Limit	Unit
Drain-Source Voltage		V _{DSS}	-20	V
Gate-Source Voltage		V _{GSS}	±12	V
Drain Current (Note 1)	Continuous T _A =25°C	I _D	-18	A
	Pulsed (Note 2)		-90	A
Total Power Dissipation (Note 1)		P _D	3	W
Operating and Storage Junction Temperature Range		T _J , T _{STG}	-55 to +150	°C

● **Electrical Characteristics** @T_A = 25°C unless otherwise noted

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
OFF CHARACTERISTICS						
Drain–Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0 V, I _D = -250uA	-20	--	--	V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = -16 V, V _{GS} = 0 V	--	--	-1	uA
Gate–Body Leakage Current	I _{GSS}	V _{GS} = ±12 V, V _{DS} = 0 V	--	--	±100	nA
ON CHARACTERISTICS						
Gate Threshold Voltage	V _{GS(TH)}	V _{DS} = V _{GS} , I _D =-250uA	-0.5	--	-1	V
Drain–Source On–State Resistance	R _{DS(ON)}	V _{GS} = -4.5V, I _D = -10A	--	10	13	mR
		V _{GS} = -2.5V, I _D = -7A	--	13	16	
Forward Transconductance	G _{FS}	V _{DS} = -5 V, I _D = -10 A	--	18	--	S
DYNAMIC CHARACTERISTICS						
Input Capacitance	C _{ISS}	V _{DS} = -15V, V _{GS} = 0V, f = 1MHz	--	1020	--	pF
Output Capacitance	C _{OSS}		--	110	--	
Reverse Transfer Capacitance	C _{RSS}		--	90	--	
SWITCHING CHARACTERISTICS						
Turn–On Delay Time	T _{D(ON)}	V _{GS} =-10V, V _{DS} =-15V,	--	10.5	--	nS
Turn–Off Delay Tim	T _{D(OFF)}	RL=1.5R, RGEN=3R	--	51	--	
DRAIN-SOURCE DIODE CHARACTERISTICS AND MAXIMUM RATINGS						
Diode Forward Voltage	V _{SD}	V _{GS} = 0 V, I _S = -2.3 A	--	-0.7	-1.3	V

Note: 1. The value of P_D is measured with the device mounted on 1in² FR-4 board with 2oz. Copper, in a still air environment with T_A =25°C. The value in any given application depends on the user's specific board design. The current rating is based on the DC thermal resistance rating.

2. Repetitive rating, pulse width limited by junction temperature.

Typical Performance Characteristics

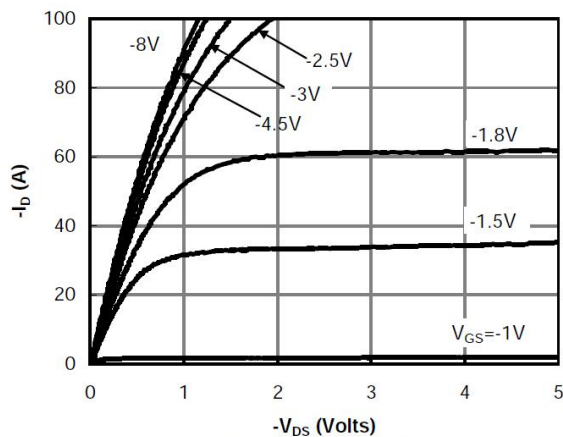


Fig 1: On-Region Characteristics (Note E)

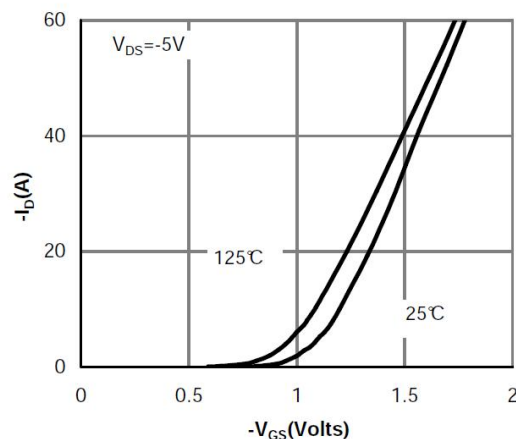


Figure 2: Transfer Characteristics (Note E)

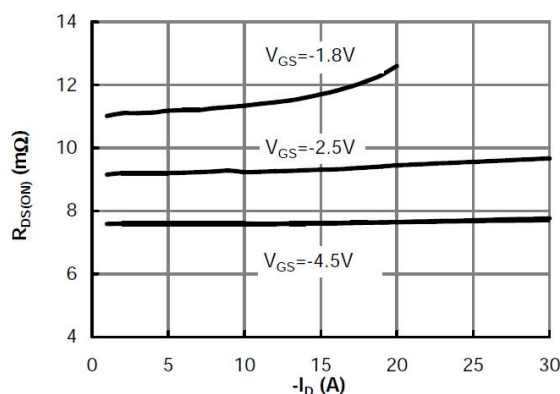


Figure 3: On-Resistance vs. Drain Current and Gate Voltage (Note E)

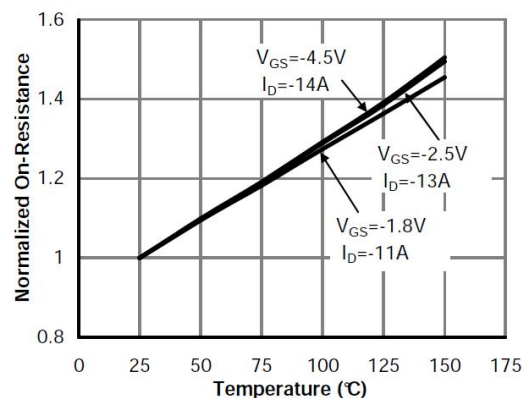


Figure 4: On-Resistance vs. Junction Temperature (Note E)

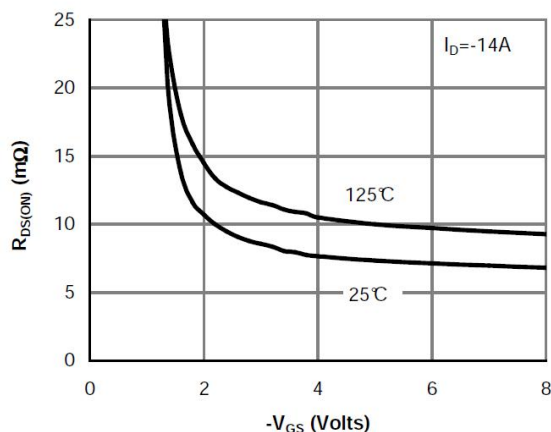


Figure 5: On-Resistance vs. Gate-Source Voltage (Note E)

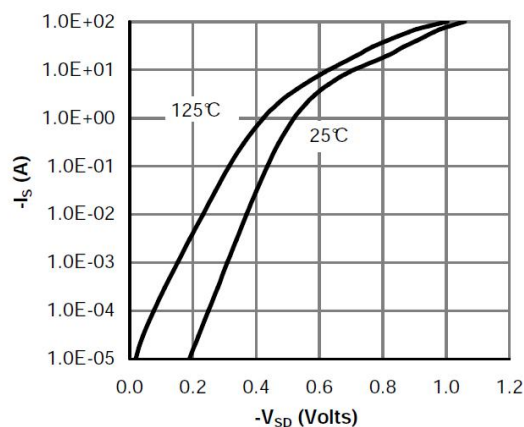


Figure 6: Body-Diode Characteristics (Note E)

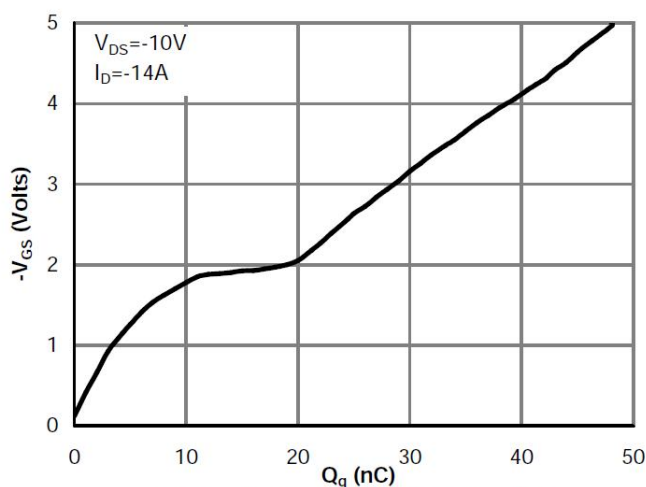


Figure 7: Gate-Charge Characteristics

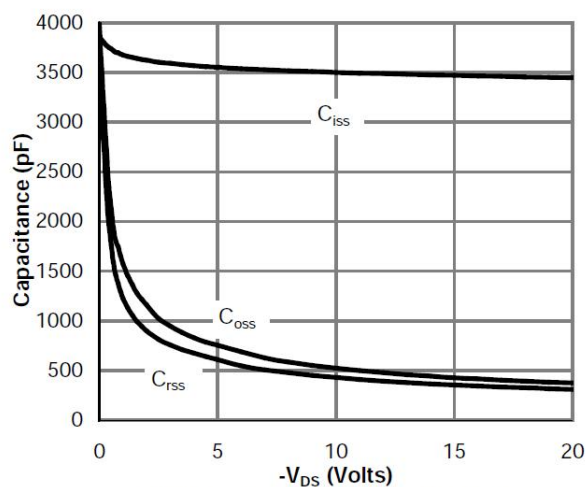


Figure 8: Capacitance Characteristics

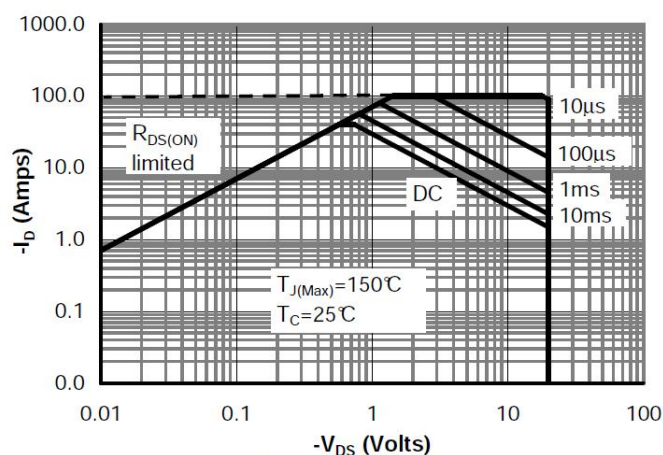


Figure 9: Maximum Forward Biased Safe Operating Area (Note F)

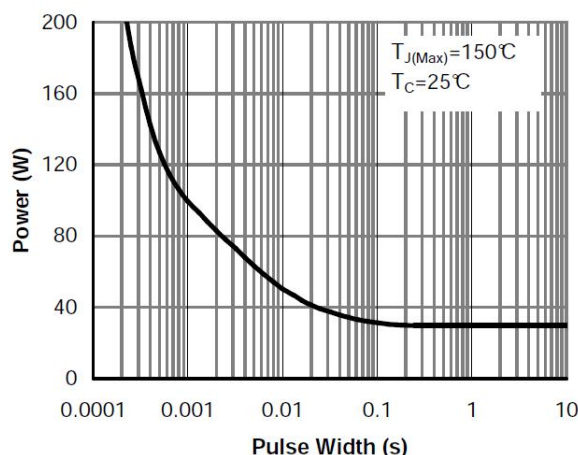


Figure 10: Single Pulse Power Rating Junction-to-Case (Note F)

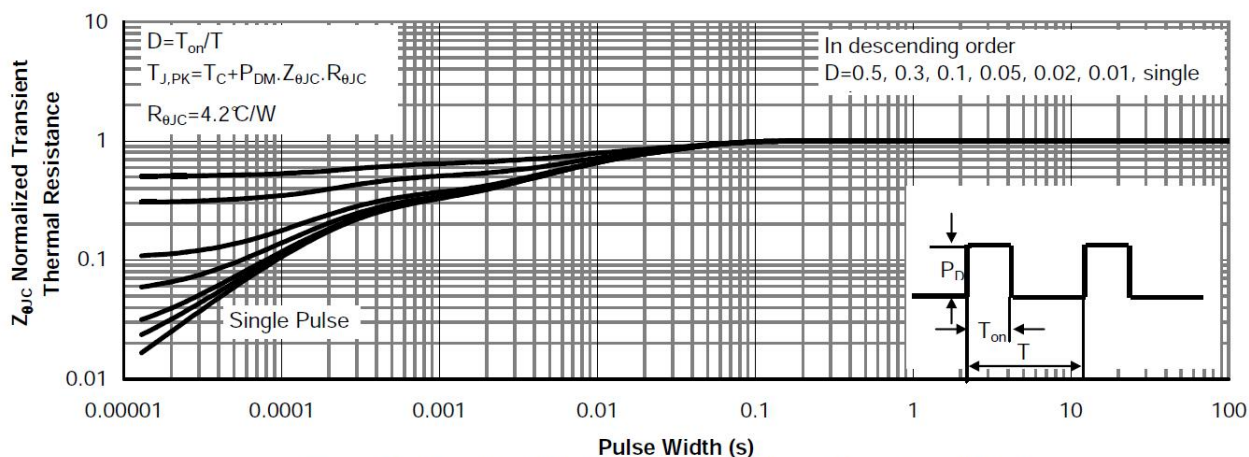


Figure 11: Normalized Maximum Transient Thermal Impedance (Note F)



SSC8129GS1

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