

P-Channel Enhancement Mode MOSFET with ESD Protection

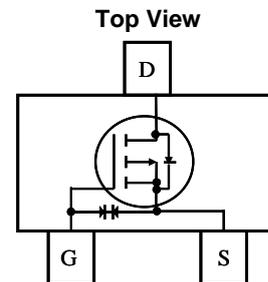
- **Features**

VDS	VGS	RDSon TYP	ID	ESD
-20V	±8V	36mR@-4V5 45mR@-2V5 57mR@-1V8 66mR@-1V5	-4A	3kV

- **Applications**

- Load Switch
- Portable Devices
- DCDC Conversion

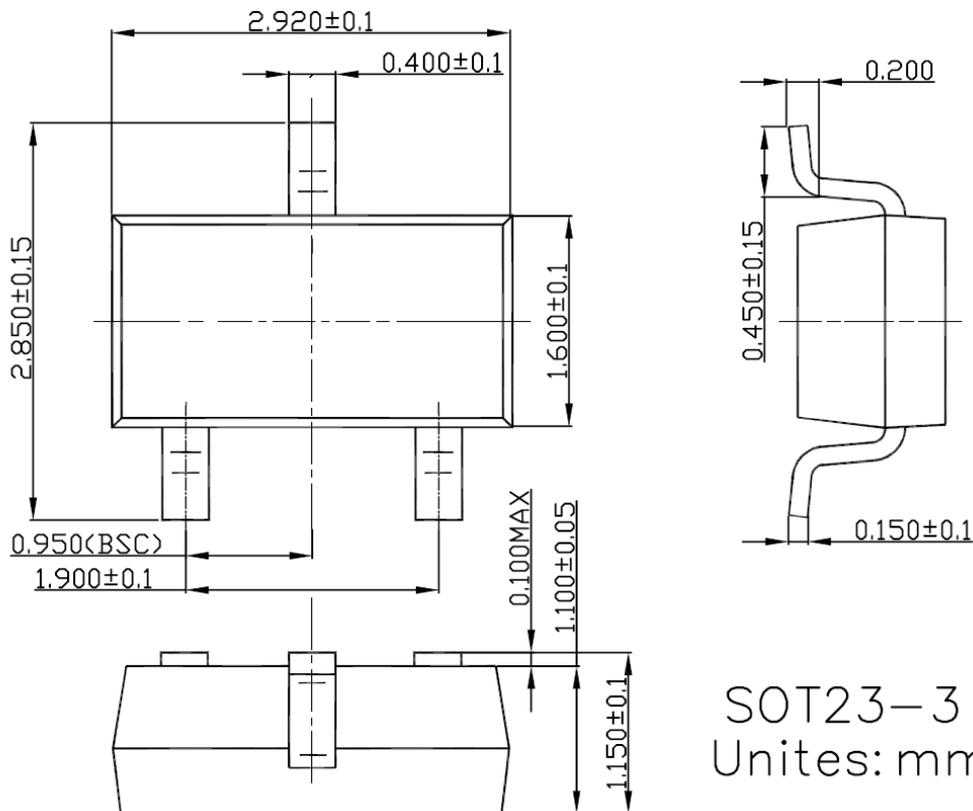
- **Pin configuration**



- **General Description**

This device uses advanced trench technology to provide excellent RDS(ON) , low gate charge and operation with gate voltages as low as 1.5V and it is protected from ESD. These features make it suitable for use as a load switch or in PWM applications.

- **Package Information**





SSC8125GS6A

● **Absolute Maximum Ratings** @ $T_A = 25^\circ\text{C}$ unless otherwise noted

Parameter	Symbol	Ratings	Unit
Drain-Source Voltage	V_{DSS}	-20	V
Gate-Source Voltage	V_{GSS}	± 8	V
Drain Current ⁽¹⁾	Continuous	-4	A
	Pulsed	-20	
Power Dissipation ⁽¹⁾	P_D	450	mW
Junction and Storage Temperature Range	T_J, T_{STG}	-55 to +150	$^\circ\text{C}$

● **Electrical Characteristics** @ $T_A = 25^\circ\text{C}$ unless otherwise noted

Parameter ⁽²⁾	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = -250\mu\text{A}$	-20	--	--	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = -20V, V_{GS} = 0V$	--	--	-1	μA
		$T_J = 55^\circ\text{C}$			-5	
Gate-Body Leakage	I_{GSS}	$V_{GS} = \pm 8V, V_{DS} = 0V$	--	--	± 10	μA
Gate Threshold Voltage	$V_{GS(TH)}$	$V_{DS} = V_{GS}, I_D = -250\mu\text{A}$	-0.4	-0.6	-0.9	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	$V_{GS} = -4.5V, I_D = -4A$	--	36	41	mR
		$V_{GS} = -2.5V, I_D = -3A$	--	45	52	
		$V_{GS} = -1.8V, I_D = -2A$	--	57	62	
		$V_{GS} = -1.5V, I_D = -1A$	--	66	72	
Forward Transconductance	G_{FS}	$V_{DS} = -5V, I_D = -4A$	--	16	--	S
Diode Forward Voltage	V_{SD}	$V_{GS} = 0V, I_{SD} = 1.6A$		0.7	1.3	V
Input Capacitance	C_{ISS}	$V_{DS} = -10V, V_{GS} = 0V$ $F = 1.0\text{MHz}$	--	418	--	μF
Output Capacitance	C_{OSS}		--	136	--	
Reverse Transfer Capacitance	C_{RSS}		--	56	--	
Total Gate Charge	Q_G	$V_{DS} = -10V, I_D = -4A,$ $V_{GS} = 5V$	--	9	--	nC
Gate-Source Charge	Q_{GS}		--	2.9	--	
Gate-Drain	Q_{GD}		--	3.6	--	
Turn-On Delay Time	$T_{D(ON)}$	$V_{GS} = -5V, V_{GS} = -10V$	--	--	18	ns
Turn-Off Delay Time	$T_{D(OFF)}$	$R_L = 1.5R, R_{GEN} = 3R$	--	--	70	

Notes :

1. Surface Mounted on FR4 Board, $t < 10$ sec.
2. Pulse Test: Pulse Width $< 300\mu\text{s}$, Duty Cycle $< 2\%$



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Typical Performance Characteristics

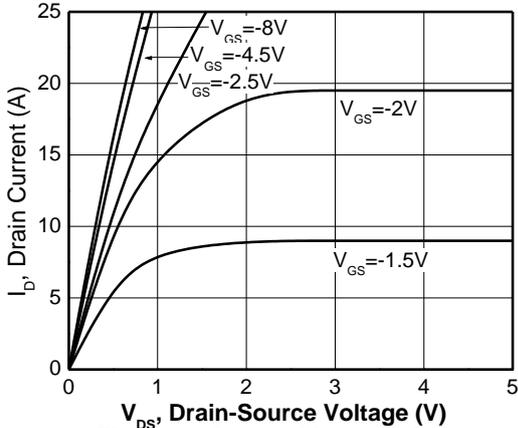


Figure 1. Output Characteristics

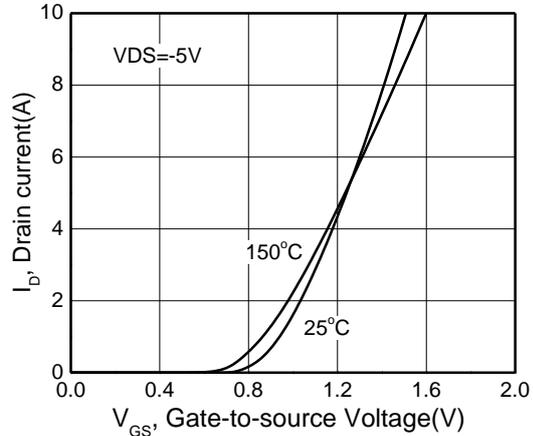


Figure 2. Transfer Characteristics

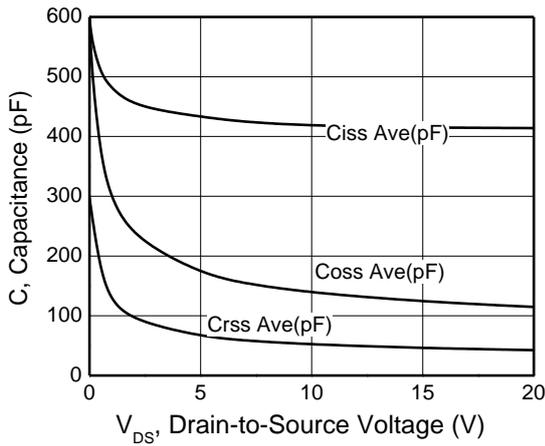


Figure 3. Capacitance

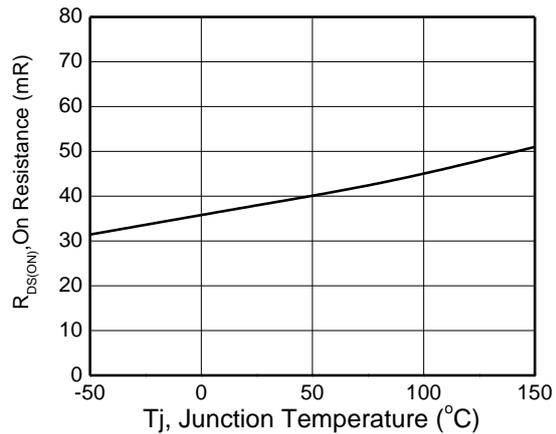


Figure 4. On Resistance vs. Temperature

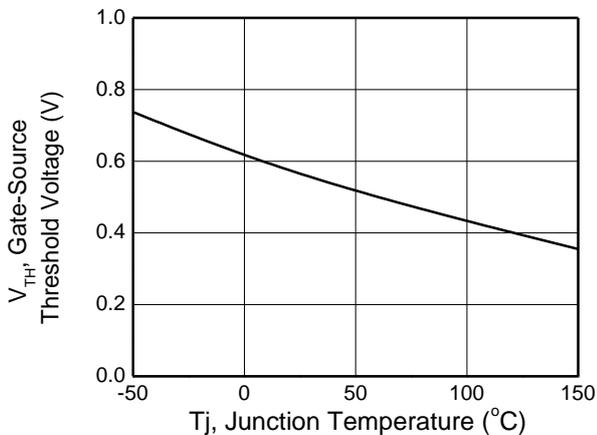


Figure 5. Gate Threshold vs. Temperature

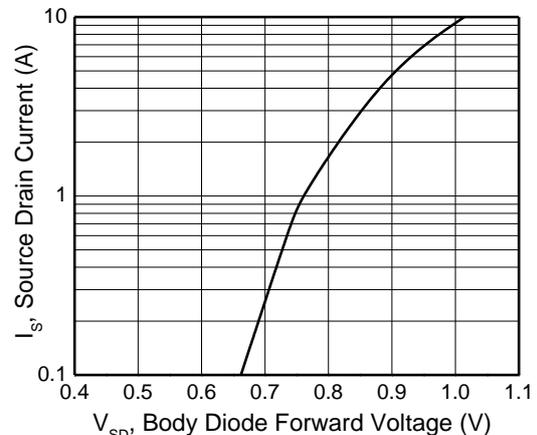


Figure 6. Diode Forward Characteristics



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