

## Dual P-Channel Enhancement Mode MOSFET

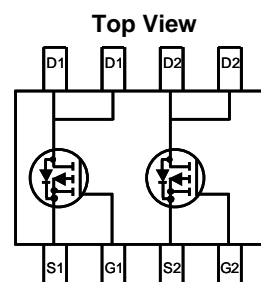
- **Features**

VDS	VGS	RDSon TYP	ID
-30V	±20V	15mR@-10V	-10A
		20mR@-4V5	

- **Applications**

- Load Switch
- DCDC conversion
- NB battery

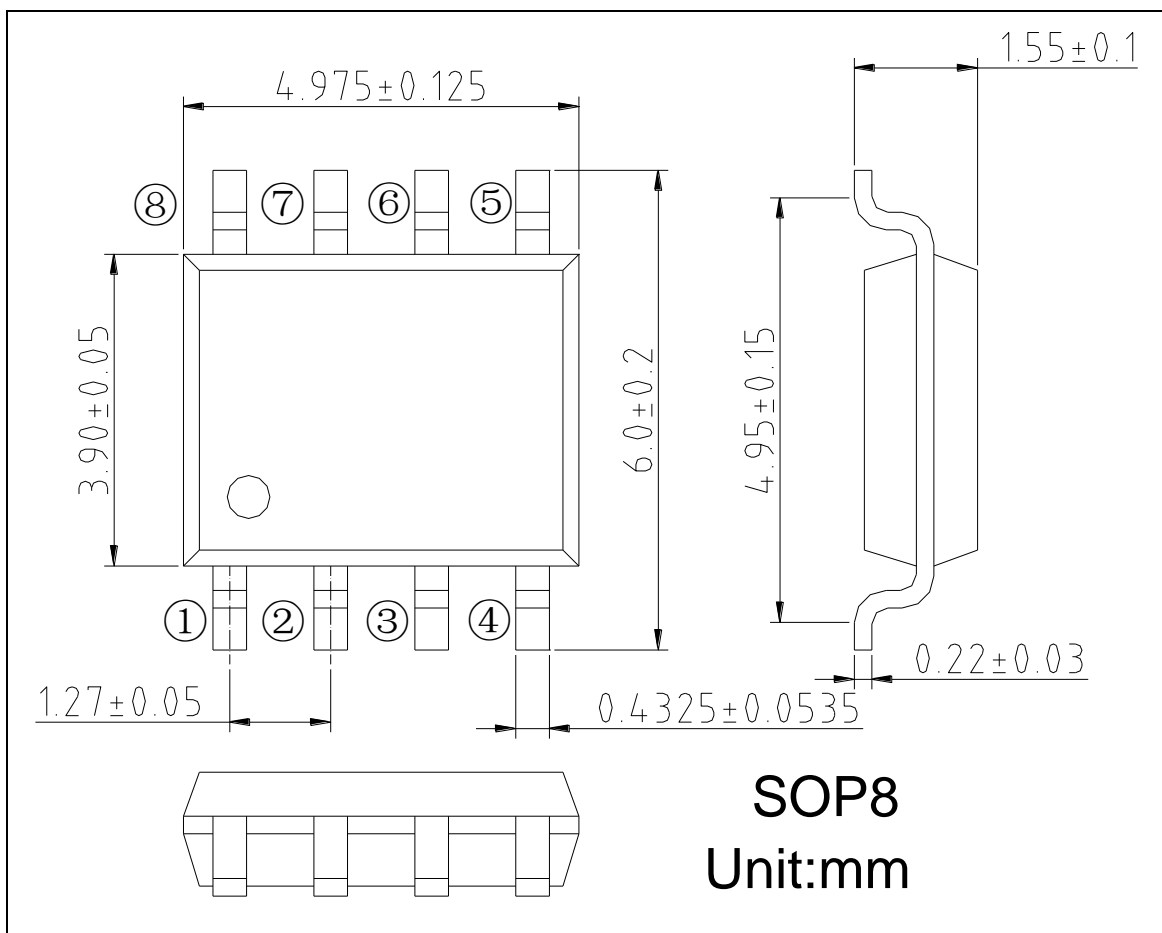
- **Pin configuration**



- **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.

- **Package Information**





# SSC8339GS1

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

Parameter		Symbol	Limit	Unit
Drain-Source Voltage		$V_{DSS}$	-30	V
Gate-Source Voltage		$V_{GSS}$	$\pm 20$	V
Drain Current (Note 1)	Continuous $T_A=25^\circ\text{C}$	$I_D$	-10	A
	Pulsed (Note 2)		-50	A
Total Power Dissipation (Note 1)		$P_D$	1.5	W
Operating and Storage Junction Temperature Range		$T_J, T_{STG}$	-55 to +150	$^\circ\text{C}$

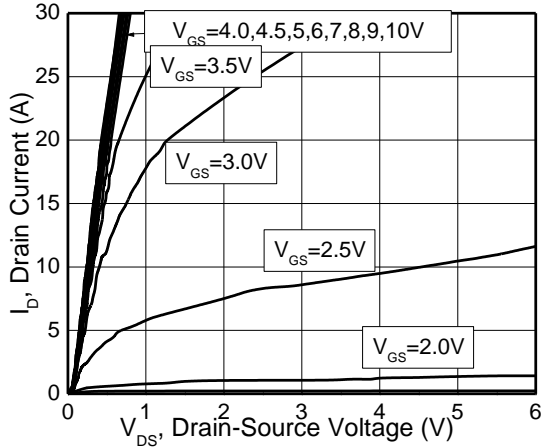
● **Electrical Characteristics** @ $T_A = 25^\circ\text{C}$  unless otherwise noted

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
<b>OFF CHARACTERISTICS</b>						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0\text{ V}, I_D = -250\mu\text{A}$	-30	--	--	V
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS} = -30\text{ V}, V_{GS} = 0\text{ V}$	--	--	-1	$\mu\text{A}$
Gate-Body Leakage Current	$I_{GSS}$	$V_{GS} = \pm 20\text{ V}, V_{DS} = 0\text{ V}$	--	--	$\pm 100$	nA
<b>ON CHARACTERISTICS</b>						
Gate Threshold Voltage	$V_{GS(TH)}$	$V_{DS} = V_{GS}, I_D = -250\mu\text{A}$	-1	-1.3	-3	V
Drain-Source On-State Resistance	$R_{DS(ON)}$	$V_{GS} = -10\text{ V}, I_D = -10\text{ A}$	--	15	20	mR
		$V_{GS} = -4.5\text{ V}, I_D = -7\text{ A}$	--	20	35	
Forward Transconductance	$G_{FS}$	$V_{DS} = -5\text{ V}, I_D = -10\text{ A}$	--	18	--	S
<b>DYNAMIC CHARACTERISTICS</b>						
Input Capacitance	$C_{ISS}$	$V_{DS} = 20\text{ V}, V_{GS} = 0\text{ V},$ $f = 1\text{ MHz}$	--	2000	--	pF
Output Capacitance	$C_{OSS}$		--	550	--	
Reverse Transfer Capacitance	$C_{RSS}$		--	800	--	
<b>SWITCHING CHARACTERISTICS</b>						
Turn-On Delay Time	$T_{D(ON)}$	$V_{GS} = -10\text{ V}, V_{DS} = -15\text{ V},$ $RL = 1.5\text{ R}, R_{GEN} = 3\text{ R}$	--	8.6	--	nS
Turn-Off Delay Time	$T_{D(OFF)}$		--	39	--	
<b>DRAIN-SOURCE DIODE CHARACTERISTICS AND MAXIMUM RATINGS</b>						
Diode Forward Voltage	$V_{SD}$	$V_{GS} = 0\text{ V}, I_S = -1\text{ A}$	--	-0.75	1.2	V

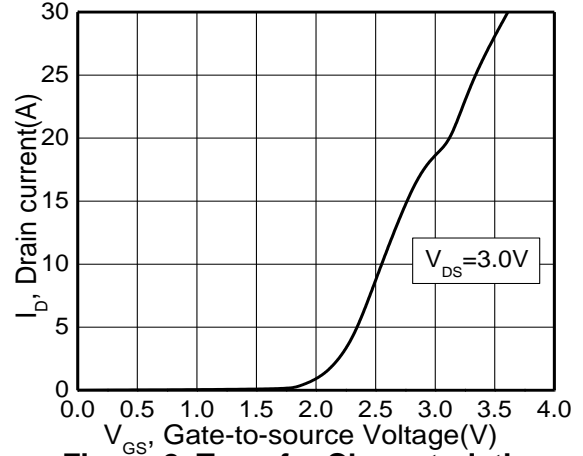
Note: 1. The value of  $P_D$  is measured with the device mounted on  $1\text{ in}^2$  FR-4 board with 2oz. Copper, in a still air environment with  $T_A = 25^\circ\text{C}$ . The value in any given application depends on the user's specific board design. The current rating is based on the DC thermal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

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

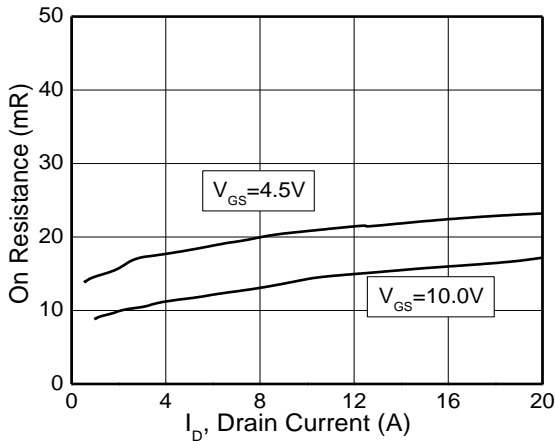
● **Typical Performance Characteristics**



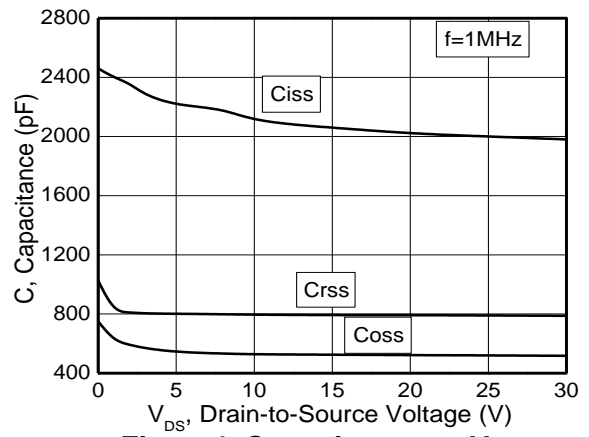
**Figure 1. Drain current vs Drain voltage**



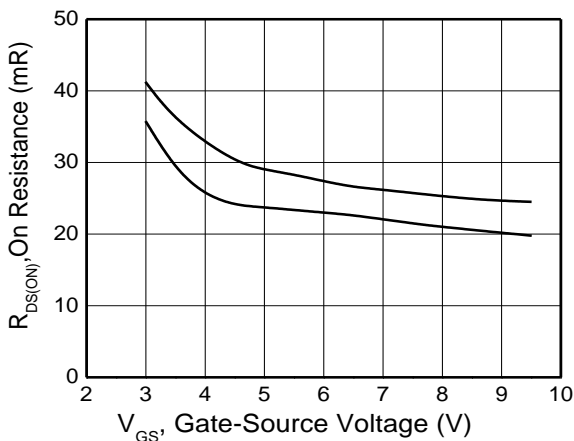
**Figure 2. Transfer Characteristics**



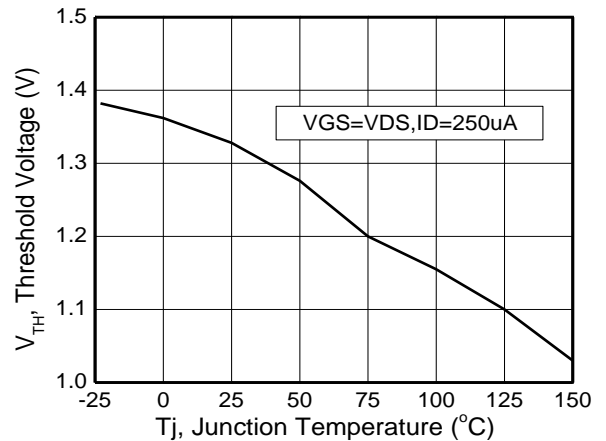
**Figure 3. On Resistance vs  $I_D$**



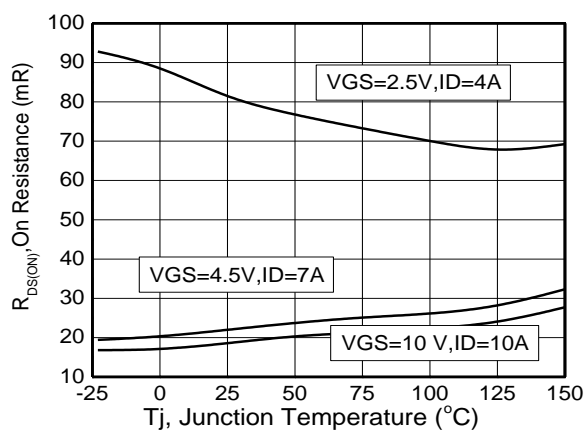
**Figure 4. Capacitance vs  $V_{DS}$**



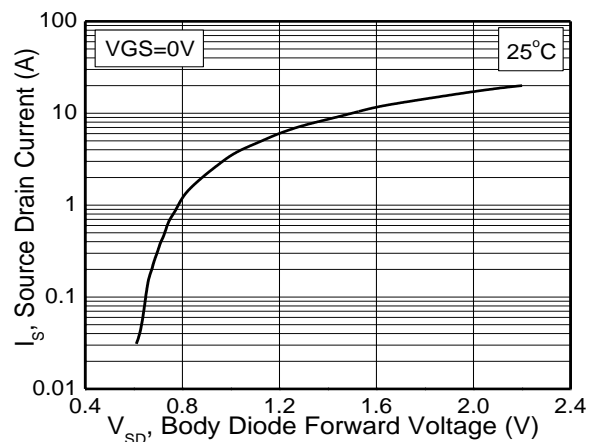
**Figure 5. On-Resistance vs Gate-Source Voltage**



**Figure 6. Threshold vs Temperature**



**Figure7. On Resistance vs Temperature**



**Figure8. Source Drain Current vs  $V_{SD}$**



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