



# SSC8205GTA

## Common Drain N-Channel Enhancement Mode MOSFET

### ● Features

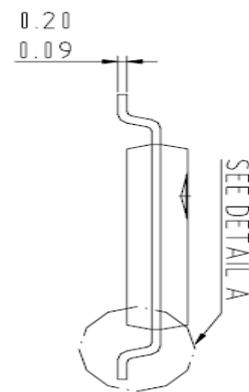
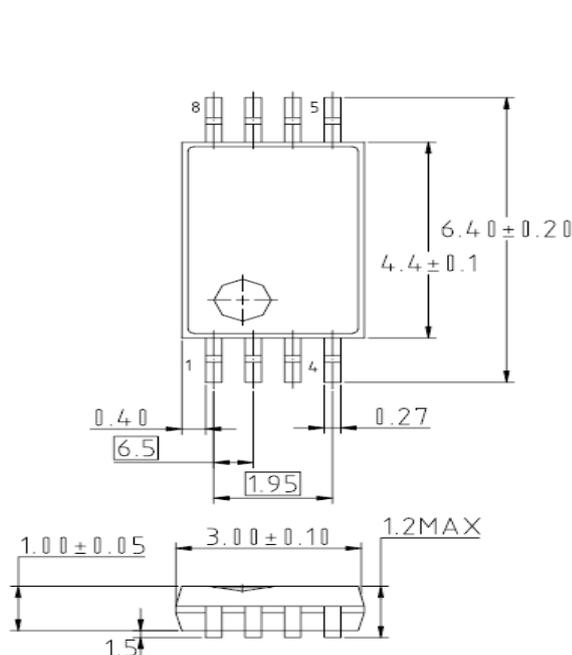
VDS	VGS	RDSon TYP	ID
20V	±12V	18mR@4V5	6A
		20mR@3V85	
		22mR@2V5	

Advanced trench process technology  
 High Density Cell Design for Ultra Low On-Resistance  
 High Power and Current handling capability  
 Fully Characterized Avalanche Voltage and Current

### ● General Description

Case: TSSOP-8  
 Case Material: Molded Plastic. UL Flammability  
 Classification  
 Rating 94V-0  
 Moisture Sensitivity: Level 1 per J-STD-020C  
 Terminals: Solderable per MIL-STD-202, Method 208

### ● Package Information



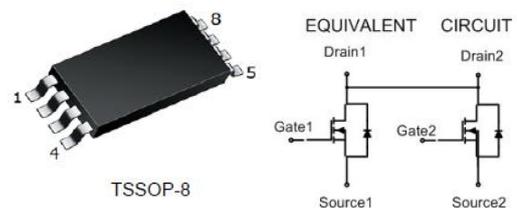
TSSOP8  
Unit:mm

### ● Applications

- Li-ion battery protection ;
- Load switch

### ● Pin configuration

Top View



PIN NUMBER	NAME	FUNCTION
1	D	DRAIN
2,3	S1	SOURCE1
4	G1	GATE1
5	G2	GATE2
6,7	S2	SOURCE2
8	D	DRAIN



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

Parameter	Symbol	Ratings	Unit
Drain-Source Voltage	$V_{DSS}$	20	V
Gate-Source Voltage	$V_{GSS}$	$\pm 12$	
Drain Current	$I_D$	6	A
Total Power Dissipation	$P_D$	1.25	mW
Operating and Storage Temperature Range	$T_{opr}$	150	$^\circ\text{C}$
Storage Temperature Range	$T_{stg}$	-55/150	$^\circ\text{C}$

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
<b>OFF CHARACTERISTICS (Note 2)</b>						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu\text{A}$	20	22	--	V
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS} = 16V, V_{GS} = 0V$	--	2.5	1000	nA
Gate-Body Leakage	$I_{GSS}$	$V_{GS} = \pm 12V, V_{DS} = 0V$	--	--	$\pm 100$	nA
<b>ON CHARACTERISTICS (Note 2)</b>						
Gate Threshold Voltage	$V_{GS(TH)}$	$V_{DS} = V_{GS}, I_D = 250\mu\text{A}$	0.5	0.72	1	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	$V_{GS} = 4.5V, I_D = 2A$	--	18	23	mR
		$V_{GS} = 3.8V, I_D = 2A$	--	20	25	
		$V_{GS} = 2.5V, I_D = 2A$	--	22	33	
Forward Transconductance	$G_{FS}$	$V_{DS} = 5V, I_D = 4.5A$	--	10	--	S
Drain-Source Diode Forward Current	$I_S$		--	--	1.7	A
Source-drain (diode forward) voltage	$V_{SD}$	$V_{GS} = 0V, I_D = 1.25A$	--	0.8	1.0	V
<b>DYNAMIC CHARACTERISTICS</b>						
Input Capacitance	$C_{ISS}$	$V_{DS} = 8V, V_{GS} = 0V$ $F = 1.0\text{MHz}$	--	600	--	pF
Output Capacitance	$C_{OSS}$		--	330	--	
Reverse Transfer Capacitance	$C_{RSS}$		--	140	--	
Total Gate Charge	$Q_G$	$V_{DS} = 10V, I_D = 6A,$ $V_{GS} = 4.5V$	--	10	15	nC
Gate-Source Charge	$Q_{GS}$		--	2.3	--	
Gate-Drain	$Q_{GD}$		--	2.9	--	
<b>SWITCHING CHARACTERISTICS</b>						
Turn-On Delay Time	$T_{D(ON)}$	$V_{DD} = 10V, R_L = 10\Omega, I_D = 1A,$ $V_{GEN} = 4.5V, R_G = 6R$	--	8	20	ns
Rise Time	$t_r$		--	10	25	
Turn-Off Delay Time	$T_{D(OFF)}$		--	35	70	
Fall-Time	$t_f$		--	30	60	

● Typical Performance Characteristics

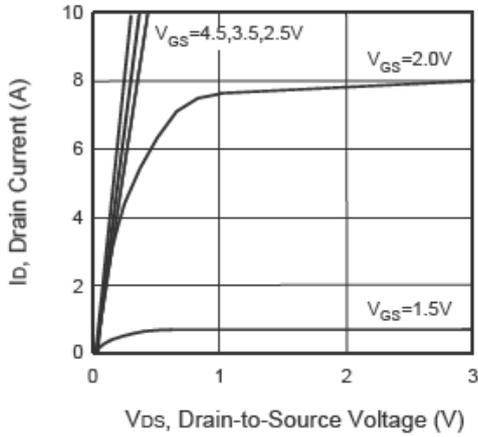


Figure 1. Output Characteristics

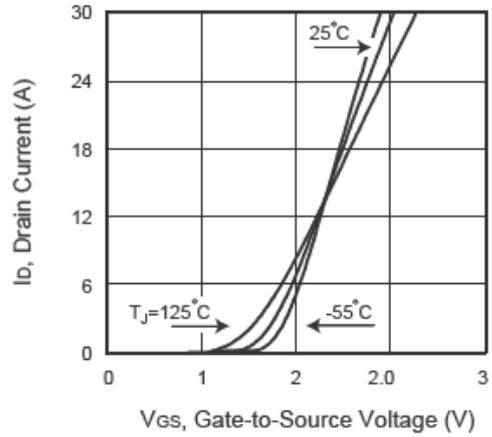


Figure 2. Transfer Characteristics

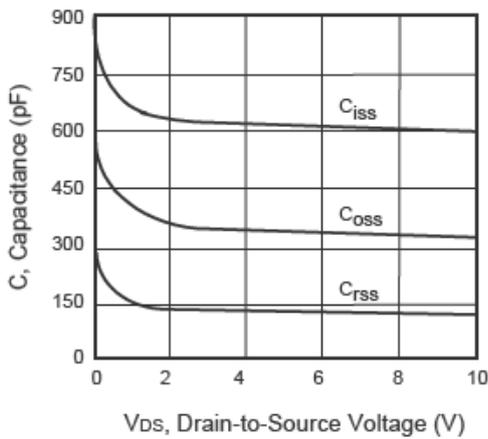


Figure 3. Capacitance

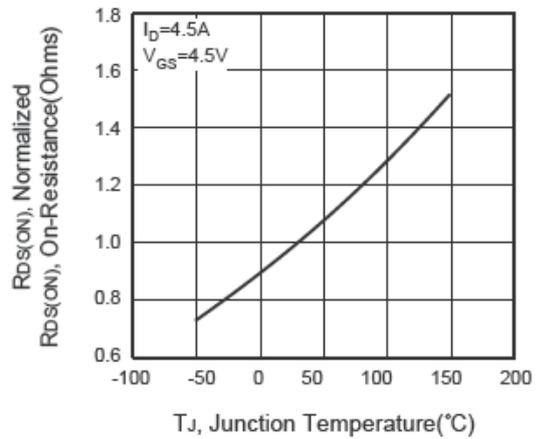


Figure 4. On-Resistance Variation with Temperature

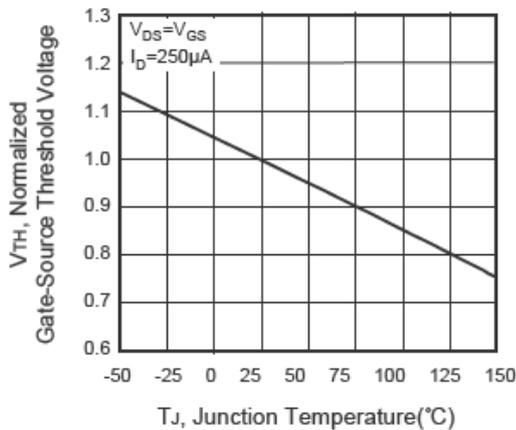


Figure 5. Gate Threshold Variation with Temperature

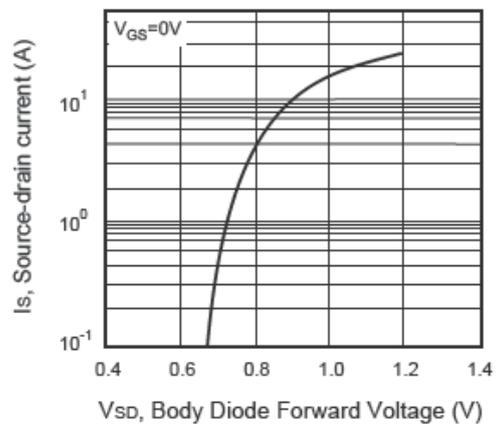


Figure 6. Body Diode Forward Voltage Variation with Source Current

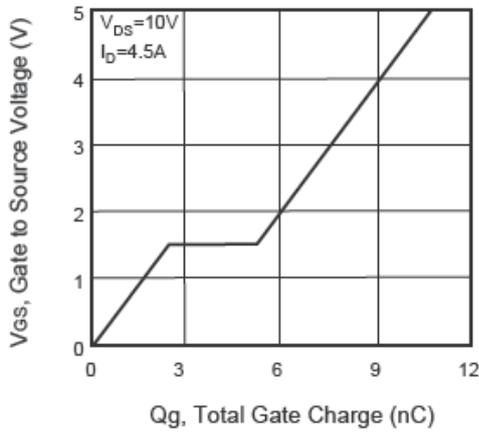


Figure 7. Gate Charge

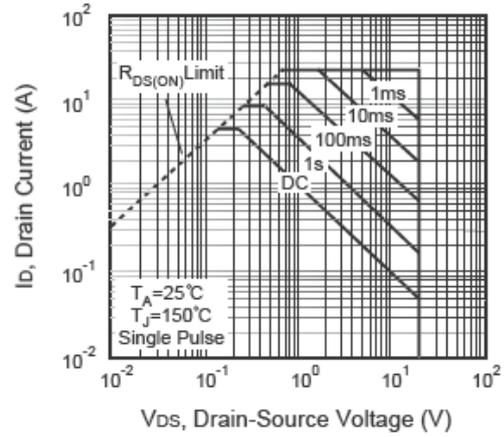


Figure 8. Maximum Safe Operating Area

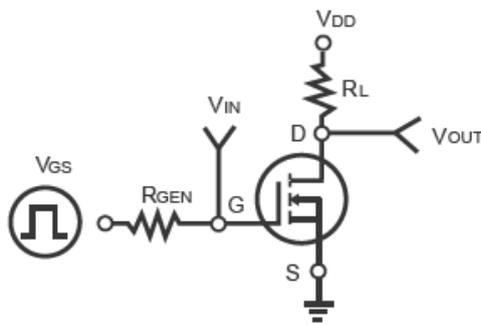


Figure 9. Switching Test Circuit

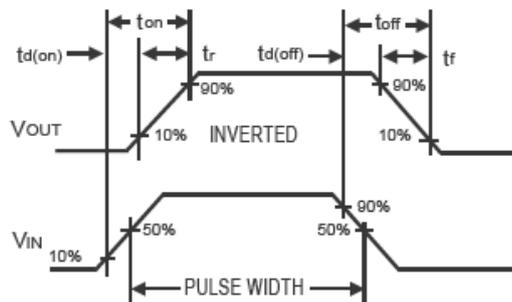


Figure 10. Switching Waveforms

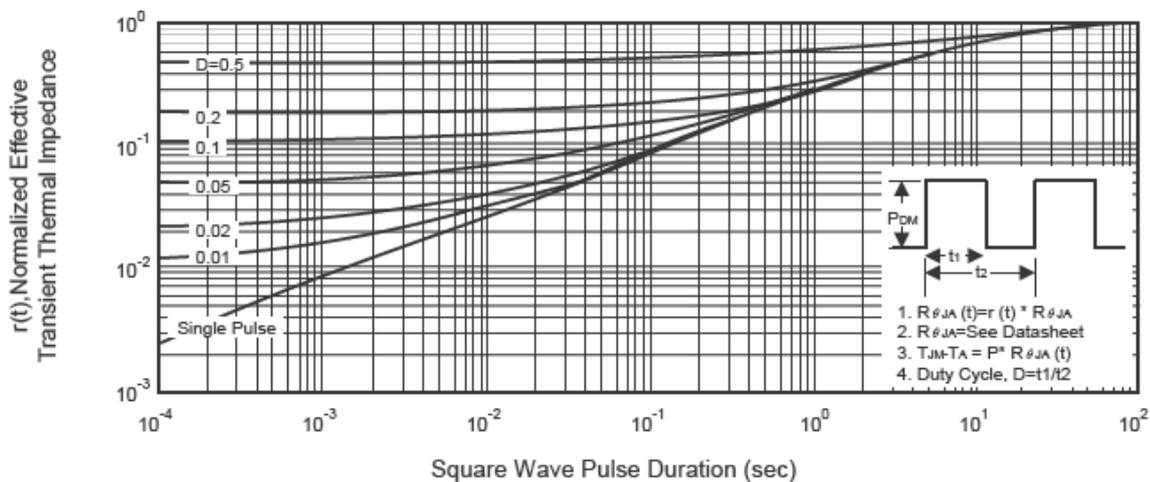


Figure 11. Normalized Thermal Transient Impedance Curve



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