SSC8205GSB

Common Drain N-Channel Enhancement Mode MOSFET

- **Features**

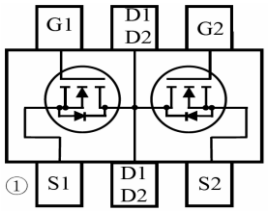
VDS	VGS	RDSon TYP	ID
20V	±12V	20mR@4V5	6A
		22mR@3V85	
		24mR@2V5	

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

- **Applications**
  - Li-ion battery protection ;
  - Load swich

- **Pin configuration**

Top View



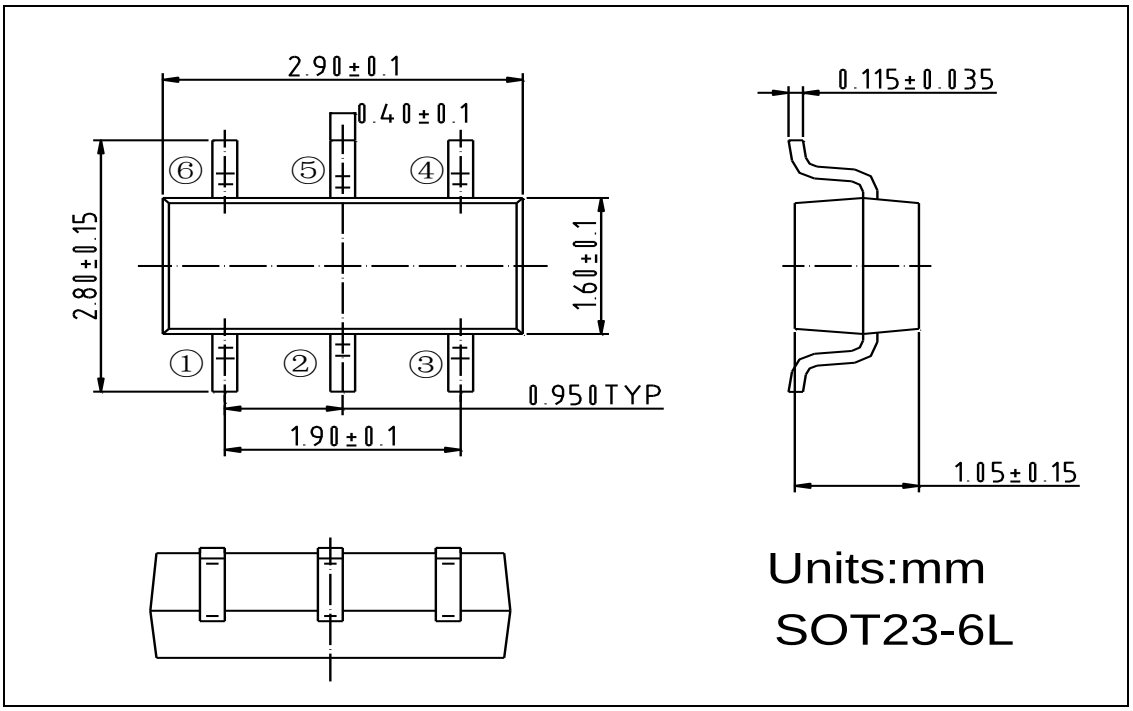
SOT23-6L

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

- **General Description**

Case: SOT23-6
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**



- **Absolute Maximum Ratings** @ T_A = 25°C unless otherwise specified

Parameter	Symbol	Ratings	Unit
Drain-Source Voltage	V_{DSS}	20	V
Gate-Source Voltage	V_{GSS}	±12	
Drain Current	I_D	6	A
Total Power Dissipation	P_D	1.25	mW
Operating and Storage Temperature Range	Topr	150	℃
Storage Temperature Range	Tstg	-55/150	℃

- **Electrical Characteristics** @ T_A = 25°C unless otherwise specified

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
OFF CHARACTERISTICS (Note 2)						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D = 250uA	20	22	--	V
Zero Gate Voltage Drain Curren	I_{DSS}	V_{DS} = 16V, V_{GS} = 0V	--	2.5	1000	nA
Gate-Body Leakage	I_{GSS}	V_{GS} = ±12V, V_{DS} = 0V	--	--	±100	nA
ON CHARACTERISTICS (Note 2)						
Gate Threshold Voltage	$V_{GS(TH)}$	V_{DS} = V_{GS}, I_D = 250uA	0.5	0.72	1	V
Static Drain-Source On-Resistance	$R_{DS\ (ON)}$	V_{GS} = 4.5V, I_D = 2A	--	20	23	mR
		V_{GS} = 3.8V, I_D = 2A	--	22	25	
		V_{GS} = 2.5V, I_D =2A	--	24	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}	VGS=0V,ID=1.25A	--	0.8	1.0	V
DYNAMIC CHARACTERISTICS						
Input Capacitance	C_{ISS}	V_{DS} = 8V, V_{GS} = 0V F = 1.0MHz	--	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	--	
SWITCHING CHARACTERISTICS						
Turn-On Delay Time	$T_{D(ON)}$	V_{DD} = 10V, RL=10Ω,I_D = 1A, V_{GEN} = 4.5V, R_G = 6R	--	8	20	ns
Rise Time	tr			10	25	
Turn-Off Delay Time	TD(OFF)		--	35	70	
Fall-Time	tf			30	60	

- **Typical Performance Characteristics**

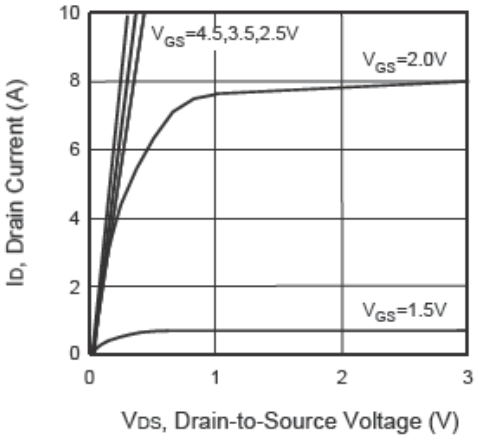


Figure 1. Output Characteristics

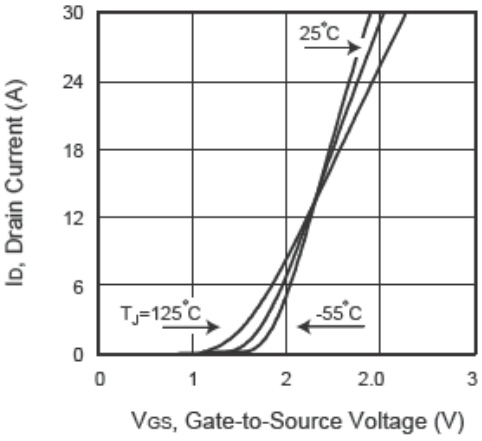


Figure 2. Transfer Characteristics

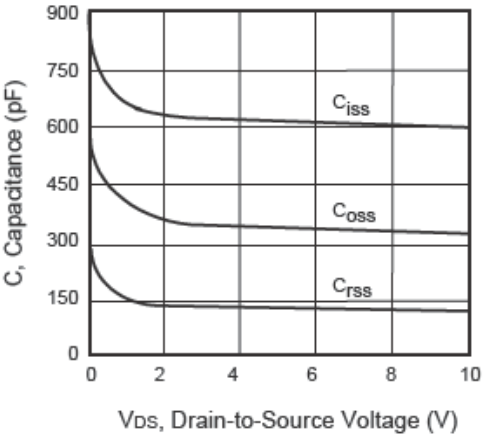


Figure 3. Capacitance

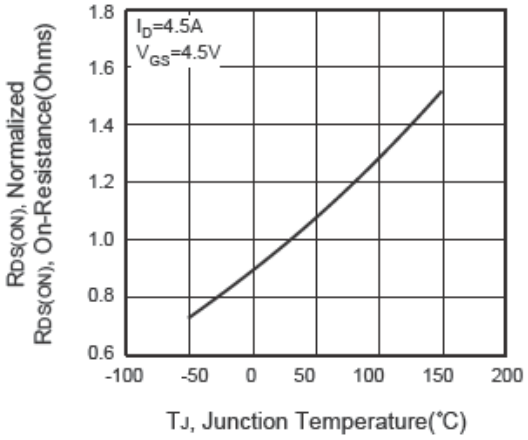


Figure 4. On-Resistance Variation with Temperature

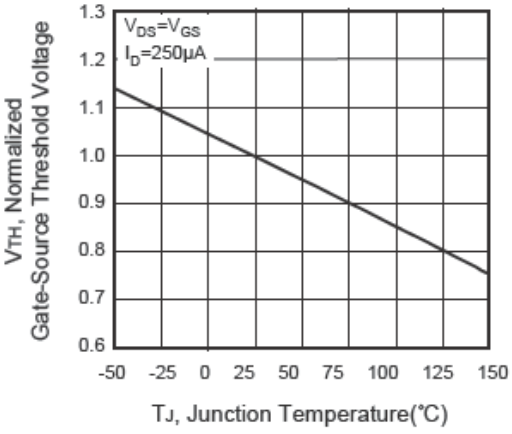


Figure 5. Gate Threshold Variation with Temperature

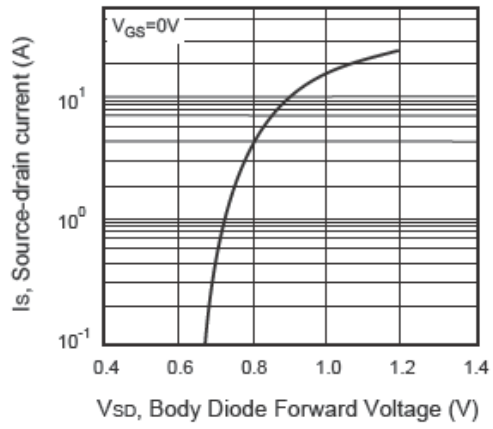


Figure 6. Body Diode Forward Voltage Variation with Source Current

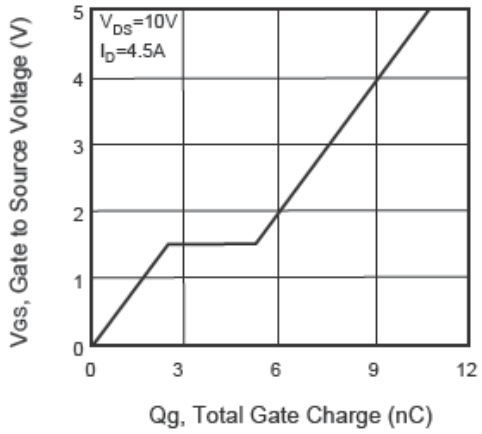


Figure 7. Gate Charge

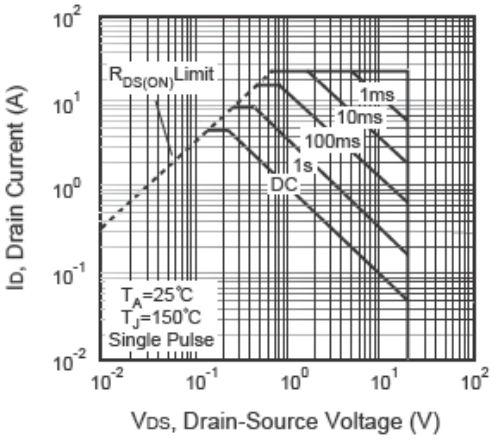


Figure 8. Maximum Safe Operating Area

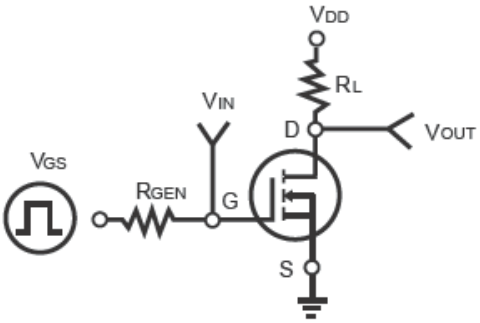


Figure 9. Switching Test Circuit

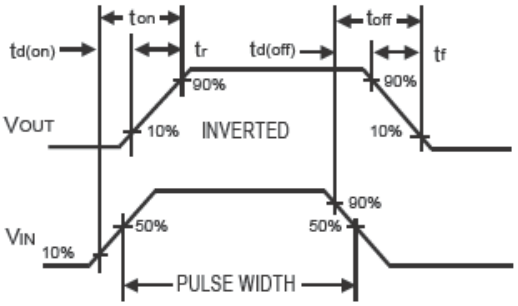


Figure 10. Switching Waveforms

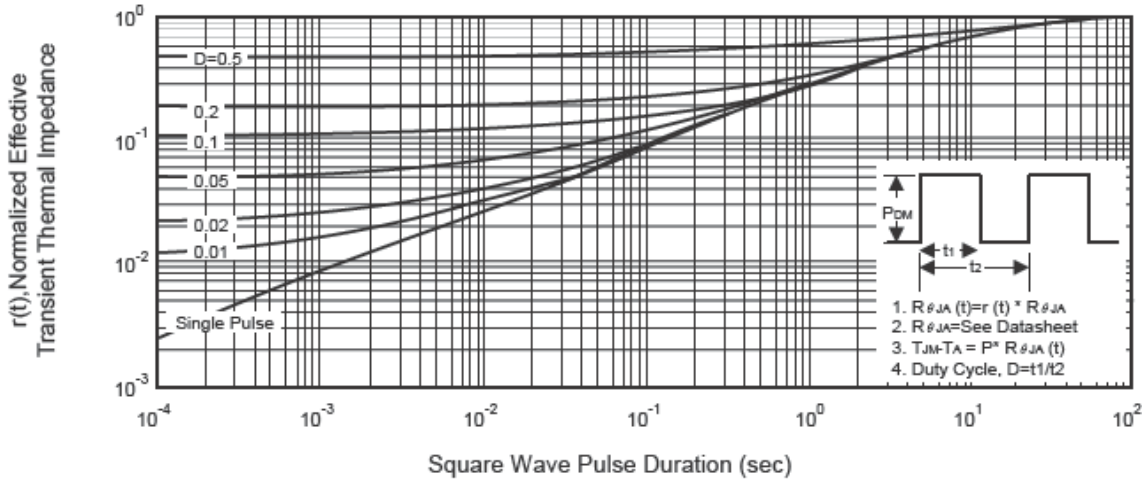


Figure 11. Normalized Thermal Transient Impedance Curve

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