

RoHS Compliant Product
A suffix of "-C" specifies halogen & lead-free

DESCRIPTION

SSG4410J-C uses advanced trench technology to provide excellent $R_{DS(ON)}$, shoot-through immunity, body Diode characteristics and ultra-low gate resistance. This device is ideally suited for the use as a low side switch in Notebook CPU core power conversion.

FEATURES

- Battery Switch
- Load Switch

MARKING



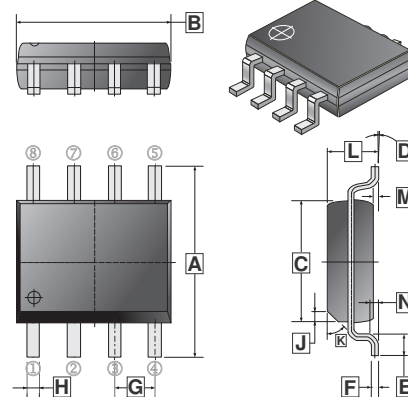
PACKAGE INFORMATION

Package	MPQ	Leader Size
SOP-8	4K	13 inch

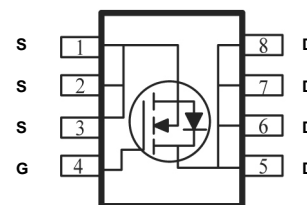
ORDER INFORMATION

Part Number	Type
SSG4410J-C	Lead (Pb)-free and Halogen-free

SOP-8



REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	5.79	6.20	H	0.33	0.51
B	4.70	5.11	J	0.375 REF.	
C	3.80	4.00	K	45° REF.	
D	0°	8°	L	1.30	1.752
E	0.40	1.27	M	0	0.30
F	0.10	0.25	N	0.25 REF.	
G	1.27 TYP.				



ABSOLUTE MAXIMUM RATINGS ($T_A=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Ratings	Unit
Drain-Source Voltage	V_{DS}	30	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current ¹	I_D	7.5	A
Pulsed Drain Current ²	I_{DM}	50	A
Single Pulse Avalanche Energy ³	E_{AS}	72	mJ
Power Dissipation	P_D	3	W
Thermal Resistance from Junction-Ambient ⁵	$R_{\theta JA}$	41.7	$^{\circ}\text{C/W}$
Thermal Resistance from Junction-Case ⁵	$R_{\theta JC}$	24	
Junction and Storage Temperature Range	T_J, T_{STG}	150, -55~150	$^{\circ}\text{C}$

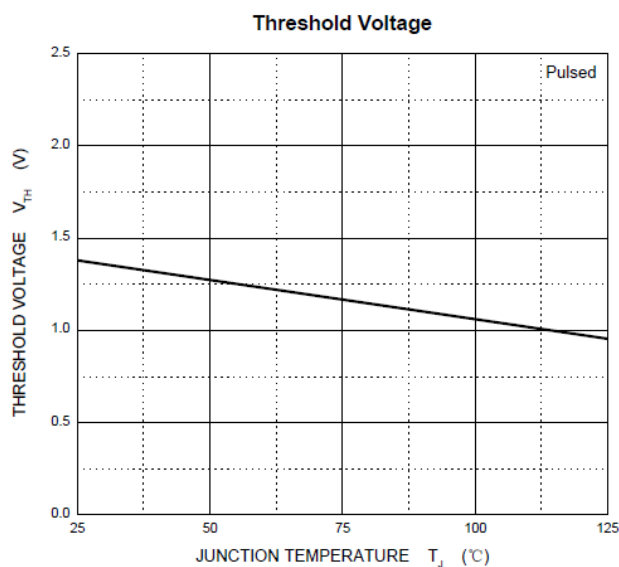
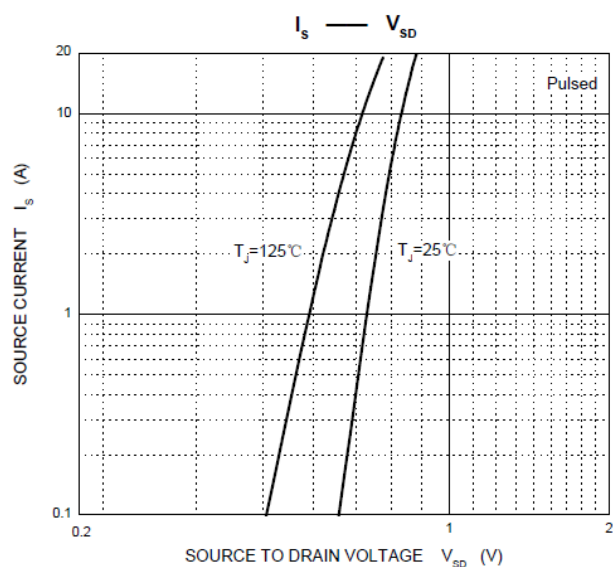
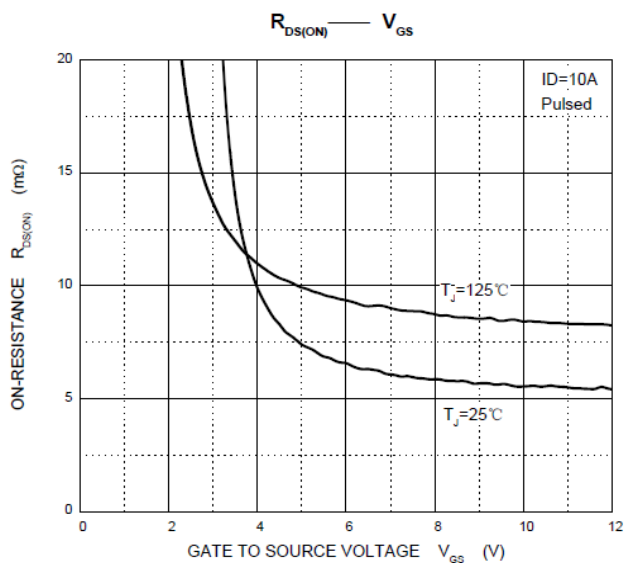
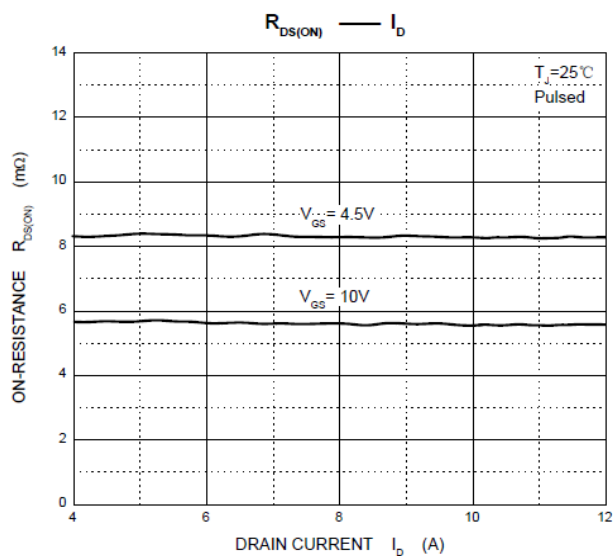
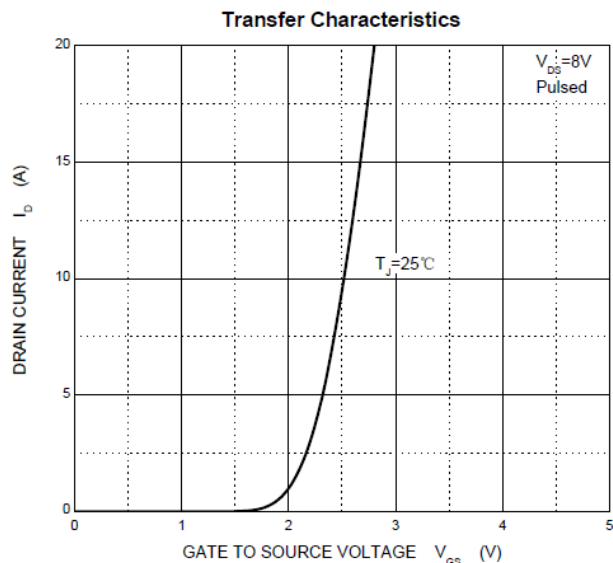
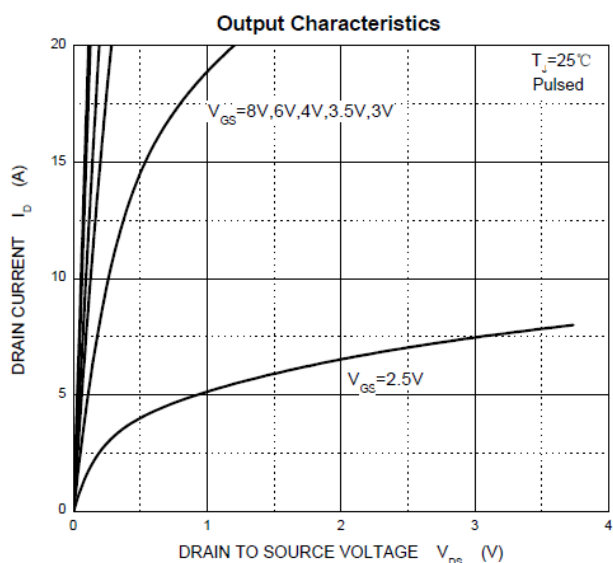
ELECTRICAL CHARACTERISTICS ($T_A=25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test conditions
Drain-Source Breakdown Voltage	BV_{DSS}	30	-	-	V	$V_{GS}=0, I_D=250\mu\text{A}$
Zero Gate Voltage Drain Current	I_{DSS}	$T_J=25^\circ\text{C}$	-	1	μA	$V_{DS}=24\text{V}, V_{GS}=0$
		$T_J=125^\circ\text{C}$	-	250		
Gate-Body Leakage Current	I_{GSS}	-	-	± 100	nA	$V_{DS}=0, V_{GS}=\pm 20\text{V}$
Gate-Threshold Voltage ⁴	$V_{GS(th)}$	1	-	3	V	$V_{DS}=V_{GS}, I_D=250\mu\text{A}$
Drain-Source On-Resistance ⁴	$R_{DS(ON)}$	-	5.6	13.5	m Ω	$V_{GS}=10\text{V}, I_D=10\text{A}$
		-	8.5	20		$V_{GS}=4.5\text{V}, I_D=5\text{A}$
Forward Transfer Conductance ⁴	g_{fs}	-	8	-	S	$V_{DS}=15\text{V}, I_D=5\text{A}$
Total Gate Charge	Q_g	-	31	-	nC	$V_{DS}=15\text{V}$ $V_{GS}=10\text{V}$ $I_D=10\text{A}$
Gate-Source Charge	Q_{gs}	-	2.3	-		
Gate-Drain ("Miller") Charge	Q_{gd}	-	8.9	-		
Turn-on Delay Time	$T_{d(on)}$	-	15	-	nS	$V_{DS}=25\text{V}$ $V_{GS}=10\text{V}$ $R_G=6\Omega$ $R_L=25\Omega$ $I_D=1\text{A}$
Rise Time	T_r	-	15	-		
Turn-off Delay Time	$T_{d(off)}$	-	60	-		
Fall Time	T_f	-	25	-		
Input Capacitance	C_{iss}	-	1290	-	pF	$V_{DS}=15\text{V}$ $V_{GS}=0$ $f=1\text{MHz}$
Output Capacitance	C_{oss}	-	236	-		
Reverse Transfer Capacitance	C_{rss}	-	219	-		
Gate Resistance	R_g	-	4.8	-	Ω	$f=1\text{MHz}$
Source-Drain Diode						
Forward on Voltage ⁴	V_{SD}	-	-	1.1	V	$I_S=2.3\text{A}, V_{GS}=0$
Continuous Source Current ¹	I_S	-	-	7.5	A	
Pulsed Source Current ²	I_{SM}	-	-	50		

Notes:

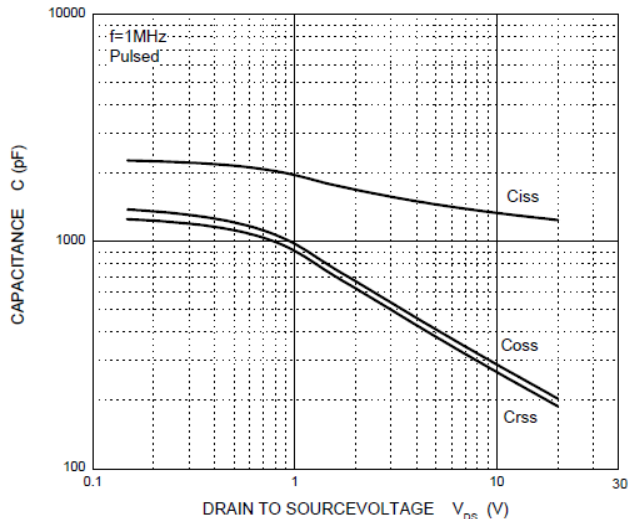
- $T_C=25^\circ\text{C}$ Limited only by maximum temperature allowed.
- $P_W \leq 10\mu\text{s}$, Duty cycles $\leq 1\%$.
- E_{AS} condition: $V_{DD}=15\text{V}$, $V_{GS}=10\text{V}$, $L=0.5\text{mH}$, $R_g=25\Omega$, Starting $T_J=25^\circ\text{C}$.
- Pulse Test: Pulse Width $\leq 300\mu\text{s}$, duty cycle $\leq 2\%$.
- The device surface mounted on 1 inch² FR-4 board with 2oz. Copper, $t \leq 10\text{sec}$.

CHARACTERISTICS CURVE

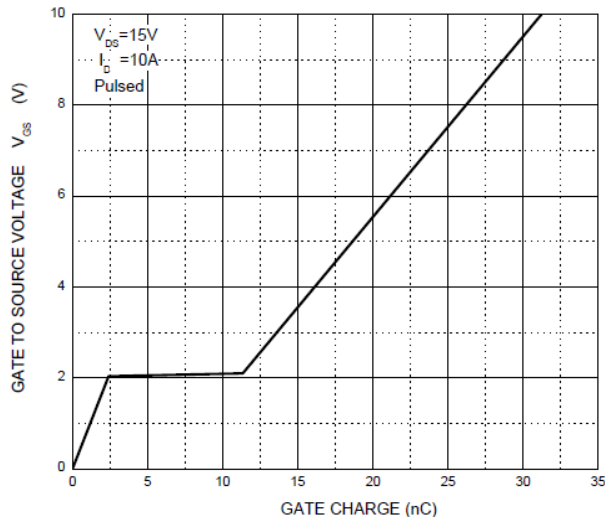


CHARACTERISTICS CURVE

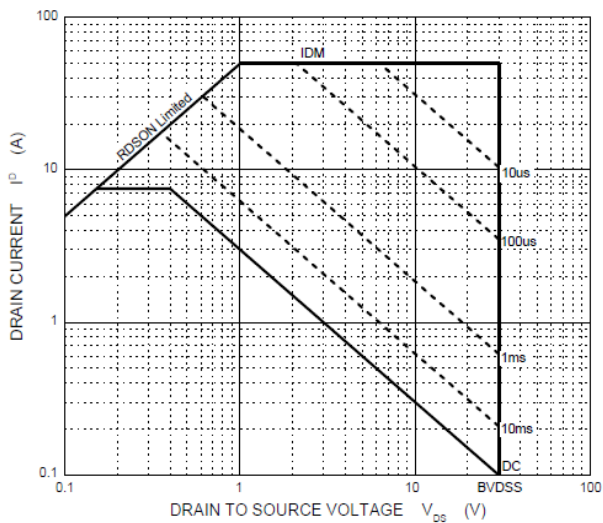
Capacitances



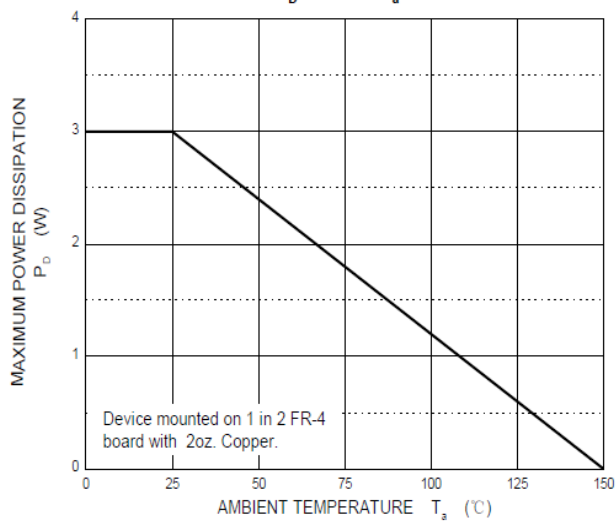
Gate Charge



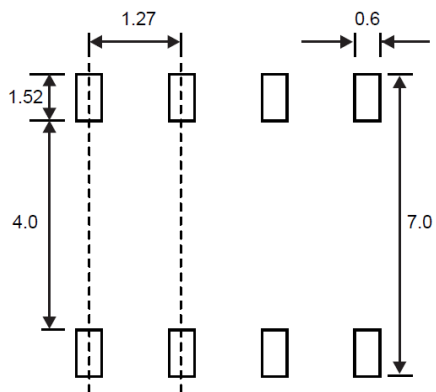
Maximum Forward Biased Safe Operating Area



P_D — T_a



Mounting Pad Layout



*Dimensions in millimeters