Elektronische Bauelemente

SSG4411-C

-8A, -30V, $R_{DS(ON)}$ 32mΩ
P-Ch Enhancement Mode Power MOSFET

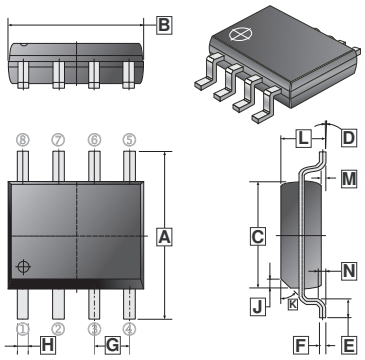
RoHS Compliant Product
A suffix of "-C" specifies halogen & lead-free

DESCRIPTION

The SSG4411-C is the highest performance trench P-Ch MOSFETs with extreme high cell density, which provide excellent $R_{DS(ON)}$ and gate charge for most of the synchronous buck converter applications.

The SSG4411-C meet the RoHS and Green Product requirement with full function reliability approved.

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	1.3	1.752
E	0.40	1.27	M	0	0.25
F	0.10	0.25	N	0.25 REF.	
G	1.27 TYP.				

APPLICATIONS

- Advanced High Cell Density Trench Technology
- Super Low Gate Charge

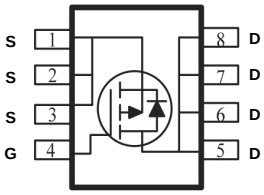
MARKING

PACKAGE INFORMATION

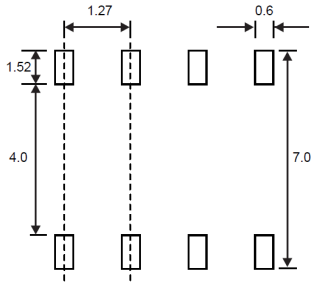
Package	MPQ	Leader Size
SOP-8	2.5K	13 inch

ORDER INFORMATION

Part Number	Type
SSG4411-C	Lead (Pb)-free and Halogen-free



Mounting Pad Layout



*Dimensions in millimeters

MAXIMUM RATINGS

Parameter		Symbol	Ratings		Unit
			t≦10sec	Steady State	
Drain-Source Voltage		V_{DS}	-30		V
Gate-Source Voltage		V_{GS}	±20		V
Continuous Drain Current [1] @V_{GS}= -10V	T_A=25℃	I_D	-8	-5.7	A
	T_A=70℃		-6.4	-4.6	
Pulsed Drain Current [3]		I_{DM}	-25		A
Total Power Dissipation	T_A=25℃	P_D	1.5		W
Junction and Storage Temperature Range		T_J, T_{STG}	-55~150		℃
Thermal Data					
Thermal Resistance from Junction-Ambient [1]		$R_{\theta JA}$	42	83	℃/W
Thermal Resistance from Junction-Ambient [2]			125		
Thermal Resistance from Junction-Case [1]		$R_{\theta JC}$	25		

ELECTRICAL CHARACTERISTICS (T_J=25℃ unless otherwise specified)

Parameter		Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Drain-Source Breakdown Voltage		BV_{DSS}	-30	-	-	V	V_{GS}=0, I_D= -250μA
Gate Threshold Voltage		$V_{GS(th)}$	-1	-	-3	V	V_{DS}=V_{GS}, I_D= -250μA
Forward Transconductance		g_{fs}	-	13	-	S	V_{DS}= -5V, I_D= -6A
Gate-Source Leakage Current		I_{GSS}	-	-	±100	nA	V_{GS}= ±20V
Drain-Source Leakage Current	T_J=25℃	I_{DSS}	-	-	-1	μA	V_{DS}= -24V, V_{GS}=0
	T_J=55℃		-	-	-5		V_{DS}= -24V, V_{GS}=0
Static Drain-Source On-Resistance [4]		$R_{DS(ON)}$	-	-	32	mΩ	V_{GS}= -10V, I_D= -6A
			-	-	50		V_{GS}= -4.5V, I_D= -4A
Total Gate Charge		Q_g	-	9.8	-	nC	I_D= -6A V_{DS}= -20V V_{GS}= -4.5V
Gate-Source Charge		Q_{gs}	-	2.2	-		
Gate-Drain Charge		Q_{gd}	-	3.4	-		
Turn-on Delay Time		$T_{d(on)}$	-	16.4	-	nS	V_{DS}= -24V I_D= -1A V_{GS}= -10V R_G=3.3Ω
Rise Time		T_r	-	20.2	-		
Turn-off Delay Time		$T_{d(off)}$	-	55	-		
Fall Time		T_f	-	10	-		
Input Capacitance		C_{iss}	-	930	-	pF	V_{GS}=0 V_{DS}= -15V f=1MHz
Output Capacitance		C_{oss}	-	148	-		
Reverse Transfer Capacitance		C_{rss}	-	115	-		
Source-Drain Diode Characteristics							
Continuous Source Current [1]		I_S	-	-	-5.7	A	
Pulsed Source Current [3]		I_{SM}	-	-	-25		
Forward On Voltage [4]		V_{DS}	-	-	-1.2	V	I_S= -1A, V_{GS}=0, T_J=25℃

Notes:
1. Surface mounted on a 1 inch^2 FR-4 board with 2oz copper.
2. When mounted on Min. Copper pad.
3. Pulse width limited by maximum junction temperature, pulse width≦100μs, duty cycle≦2%.
4. The data tested by pulsed, pulse width≦300μs, duty cycle≦2%.

CHARACTERISTIC CURVES

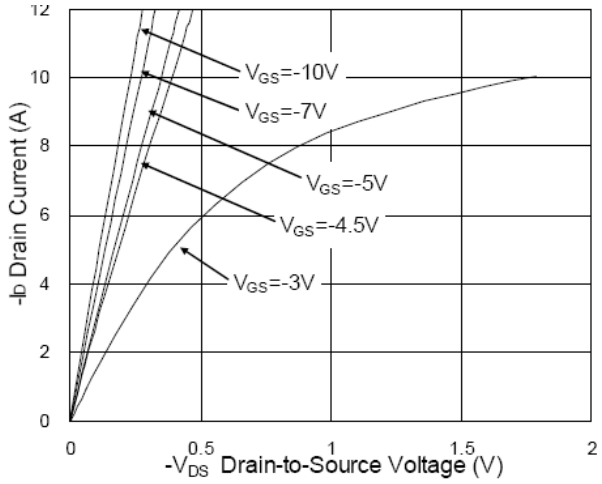


Fig.1 Typical Output Characteristics

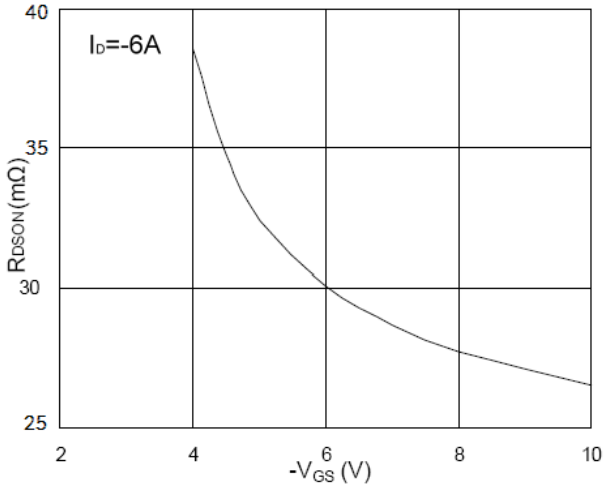


Fig.2 On-Resistance v.s Gate-Source

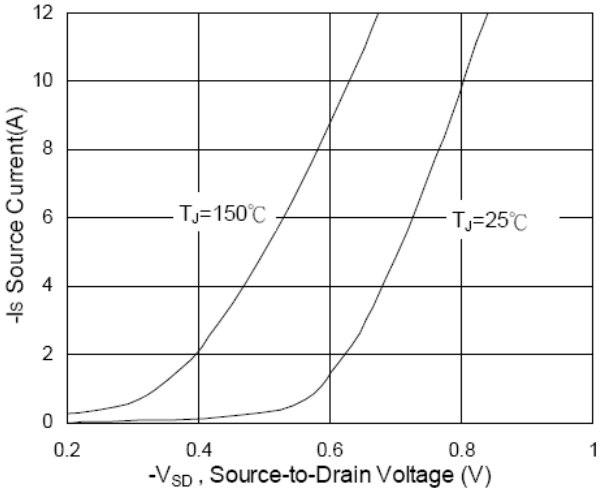


Fig.3 Forward Characteristics of Reverse

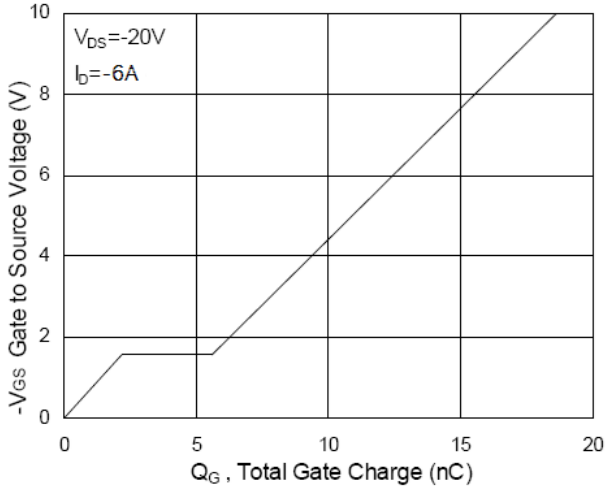


Fig.4 Gate-Charge Characteristics

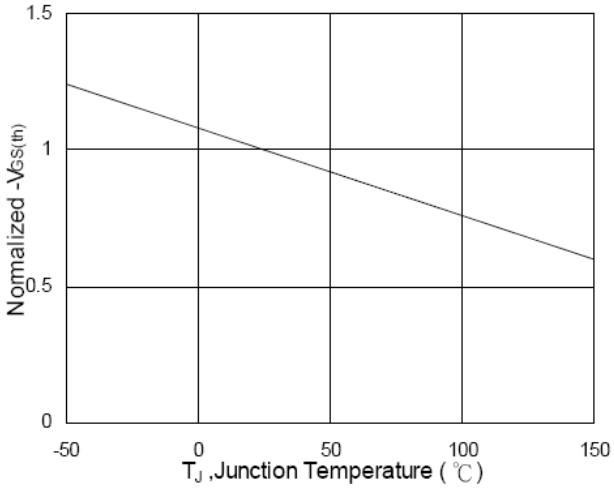


Fig.5 Normalized $V_{GS(th)}$ v.s T_J

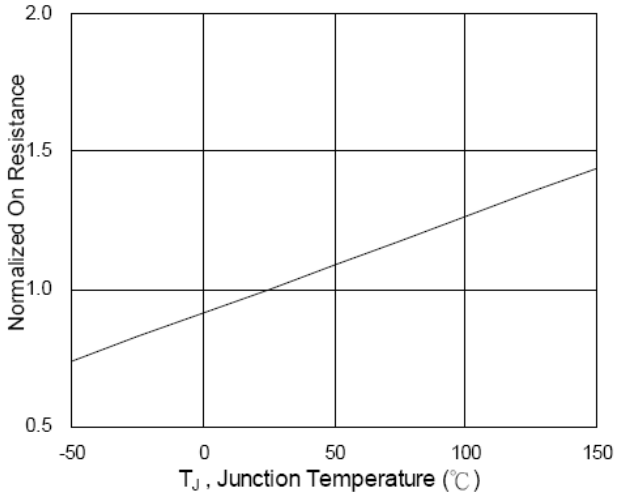


Fig.6 Normalized R_{DSON} v.s T_J

CHARACTERISTIC CURVES

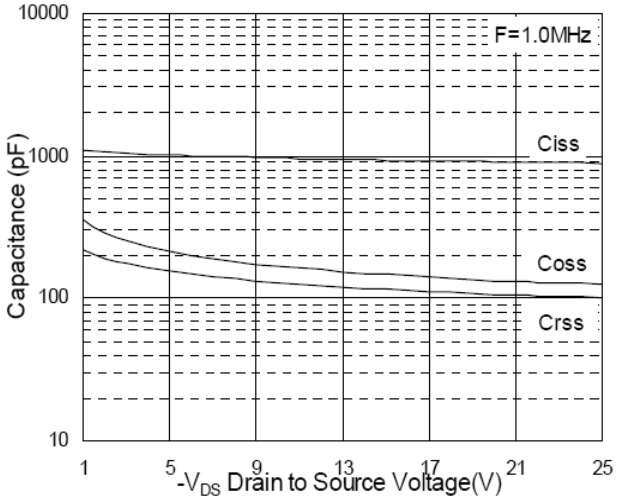


Fig.7 Capacitance

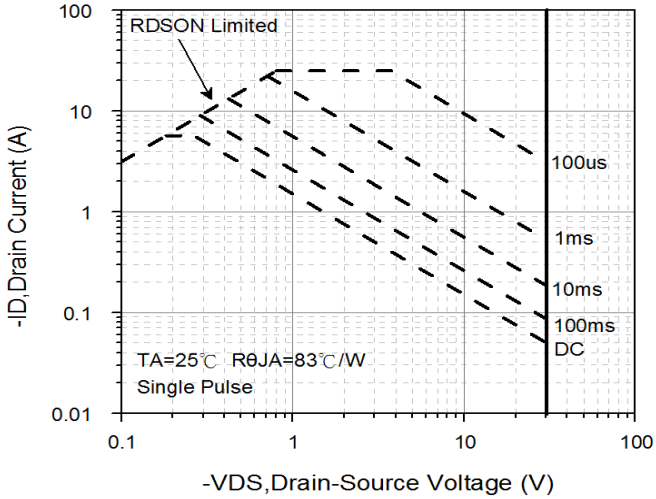


Fig.8 Safe Operating Area

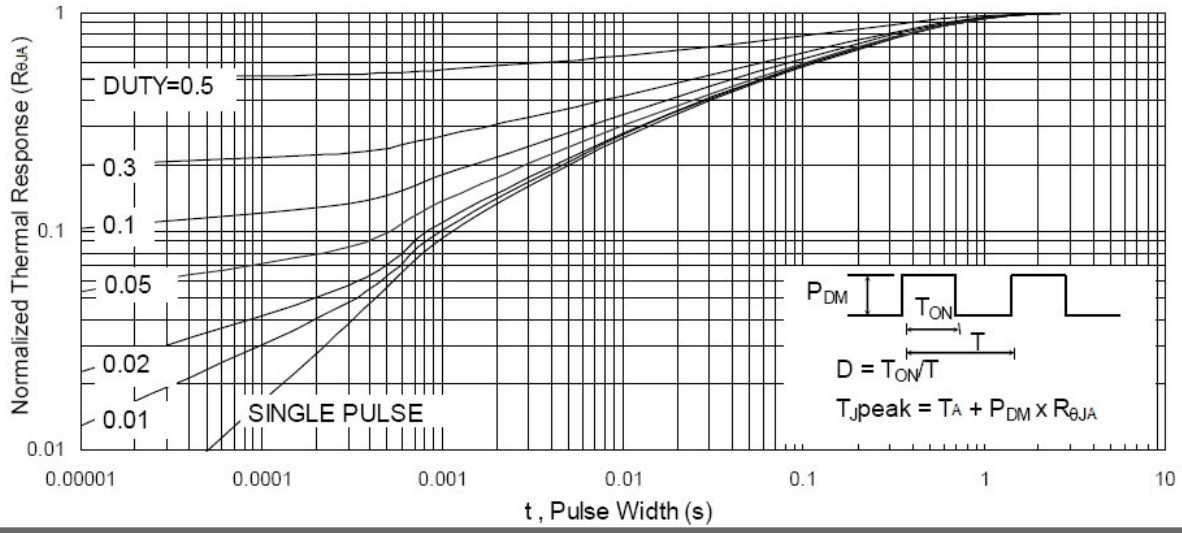


Fig.9 Normalized Maximum Transient Thermal Impedance

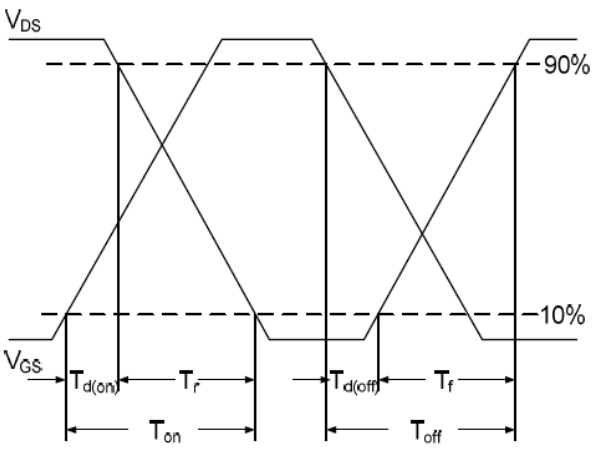


Fig.10 Switching Time Waveform

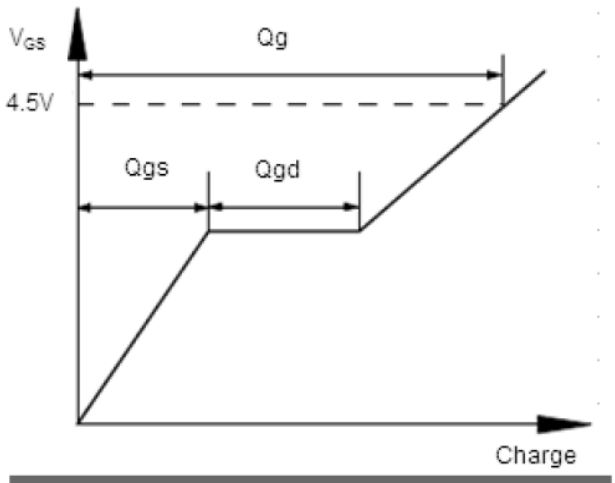


Fig.11 Gate Charge Waveform