Elektronische Bauelemente

SSG4907-C

-9A, -30V, $R_{DS(ON)}$ 16mΩ
Dual-P Enhancement Mode Power MOSFET

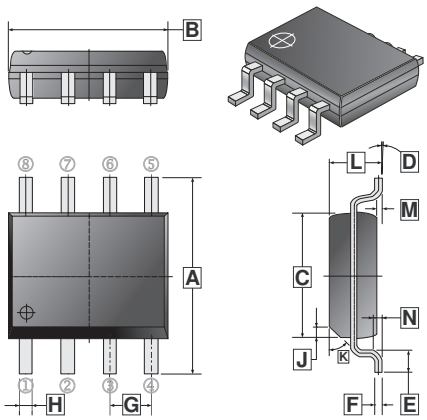
RoHS Compliant Product
A suffix of "-C" specifies halogen & lead-free

DESCRIPTION

The SSG4907-C is the high cell density trenched P-ch MOSFETs, which provide excellent $R_{DS(ON)}$ and gate charge for most of the synchronous buck converter applications.

The SSG4907-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.				

FEATURES

- Advanced High Cell Density Trench Technology
- Super Low Gate Charge
- Green Device Available

MARKING

4907
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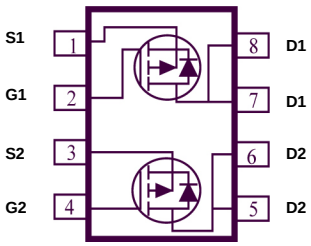
□=Date Code



PACKAGE INFORMATION

Package	MPQ	Leader Size
SOP-8	2.5K	13 inch

ORDER INFORMATION

Part Number	Type
SSG4907-C	Lead (Pb)-free and Halogen-free

ABSOLUTE MAXIMUM RATINGS

Parameter		Symbol	Ratings	Unit
Drain-Source Voltage		V_{DS}	-30	V
Gate-Source Voltage		V_{GS}	±25	V
Continuous Drain Current [1] @V_{GS}= -10V	T_A=25℃	I_D	-9	A
	T_A=70℃		-7	
Pulsed Drain Current [2]		I_{DM}	-40	A
Power Dissipation [3]	T_A=25℃	P_D	2	W
Operating Junction & Storage Temperature Range		T_J, T_{STG}	150, -55~150	℃
Thermal Resistance Ratings				
Thermal Resistance Junction-Ambient [1]		$R_{\theta JA}$	85	℃/W
Thermal Resistance Junction-Ambient [1]	t≦10s		62.5	
Thermal Resistance Junction-Case [1]		$R_{\theta JC}$	24	

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	-	-2.5	V	V_{DS}=V_{GS}, I_D= -250μA
Forward Transconductance		g_{fs}	-	25	-	S	V_{DS}= -5V, I_D= -9A
Gate-Source Leakage Current		I_{GSS}	-	-	±100	nA	V_{DS}=0, V_{GS}= ±25V
Zero Gate Voltage Drain Current	T_J=25℃	I_{DSS}	-	-	-1	μA	V_{DS}= -24V, V_{GS}=0
	T_J=55℃		-	-	-5		
Static Drain-Source On-Resistance [2]		$R_{DS(ON)}$	-	12	16	mΩ	V_{GS}= -10V, I_D= -9A
			-	18	28		V_{GS}= -4.5V, I_D= -7A
Gate Resistance		R_g	-	9	-	Ω	V_{DS}=V_{GS}=0, f=1MHz
Total Gate Charge		Q_g	-	20	-	nC	V_{DS}= -15V I_D= -9A V_{GS}= -4.5V
Gate-Source Charge		Q_{gs}	-	5.1	-		
Gate-Drain (“Miller”) Change		Q_{gd}	-	7.3	-		
Turn-on Delay Time		$T_{d(on)}$	-	33.8	-	nS	V_{DD}= -15V V_{GS}= -10V I_D= -1A R_G=3.3Ω
Rise Time		T_r	-	35.8	-		
Turn-off Delay Time		$T_{d(off)}$	-	72.8	-		
Fall Time		T_f	-	10.6	-		
Input Capacitance		C_{iss}	-	2215	-	pF	V_{DS}= -15V V_{GS}=0 f=1MHz
Output Capacitance		C_{oss}	-	310	-		
Reverse Transfer Capacitance		C_{rss}	-	237	-		
Source-Drain Diode							
Continuous Source Current [1]		I_S	-	-	-3	A	V_G=V_D=0V, Force Current
Diode Forward Voltage [2]		V_{SD}	-	-	-1	V	I_S= -1A, V_{GS}=0, T_J=25℃

Notes:
1. The data tested by surface mounted on 1inch^2 FR4 Board with 2OZ copper.
2. The data tested by pulsed, Pulse Width≦300μs, Duty Cycle≦2%.
3. The power dissipation is limited by 150℃ junction temperature.

CHARACTERISTIC CURVES

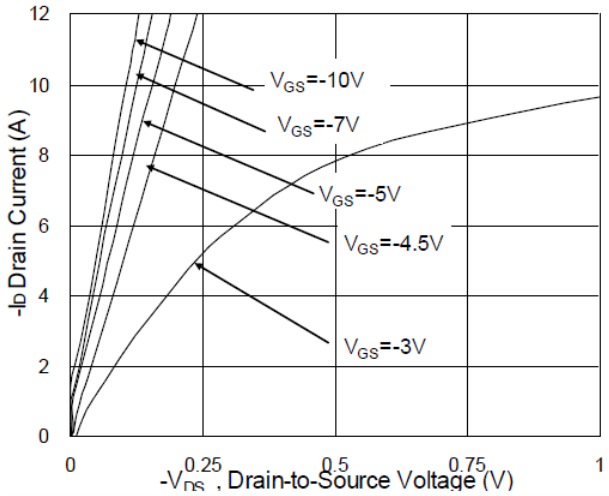


Fig.1 Typical Output Characteristics

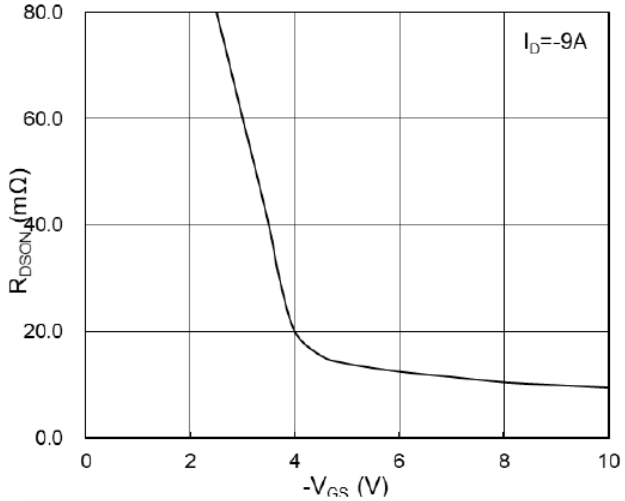


Fig.2 On-Resistance vs G-S Voltage

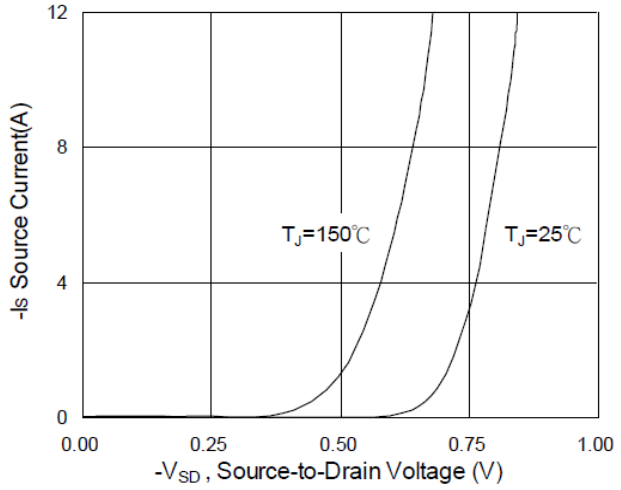


Fig.3 Source Drain Forward Characteristics

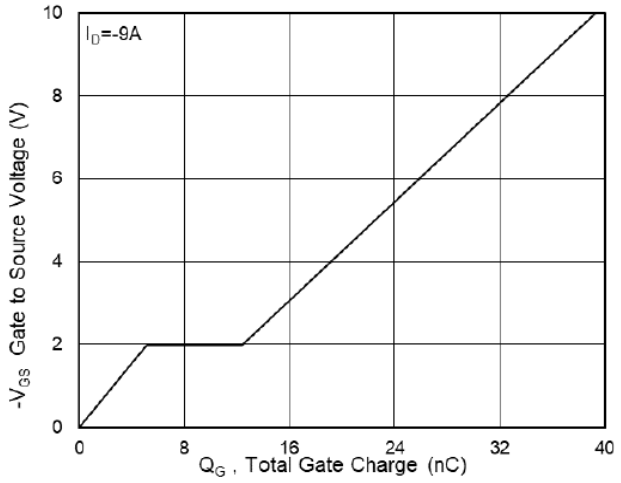


Fig.4 Gate-charge Characteristics

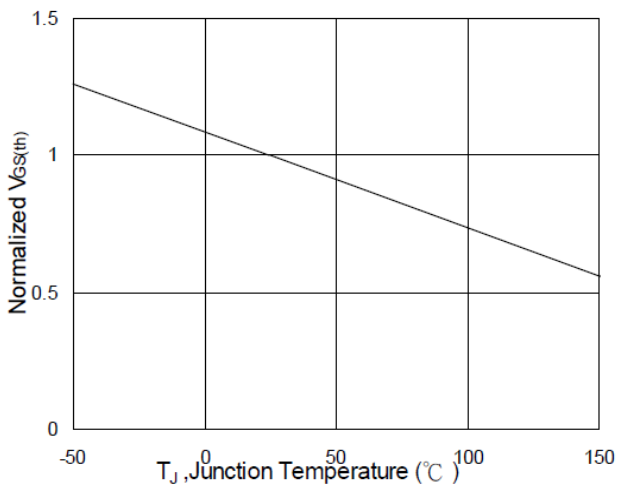


Fig.5 Normalized $V_{GS(th)}$ vs T_J

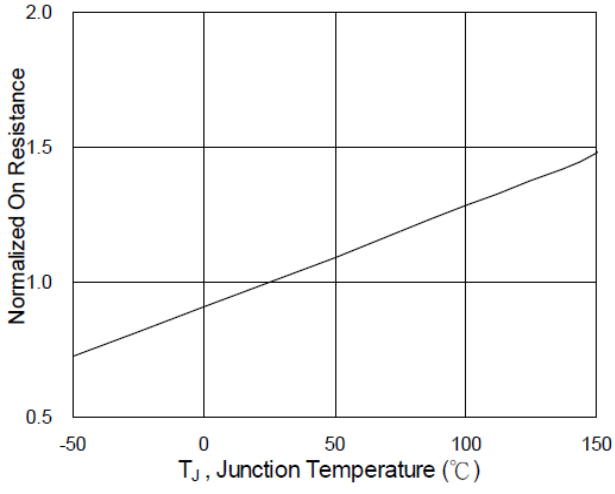


Fig.6 Normalized R_{DSON} vs T_J

CHARACTERISTIC CURVES -

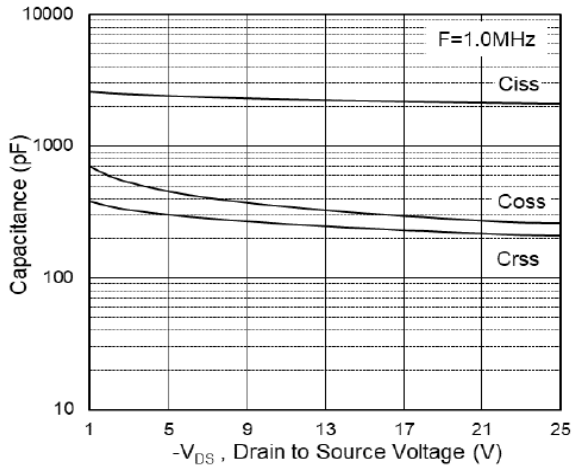


Fig.7 Capacitance

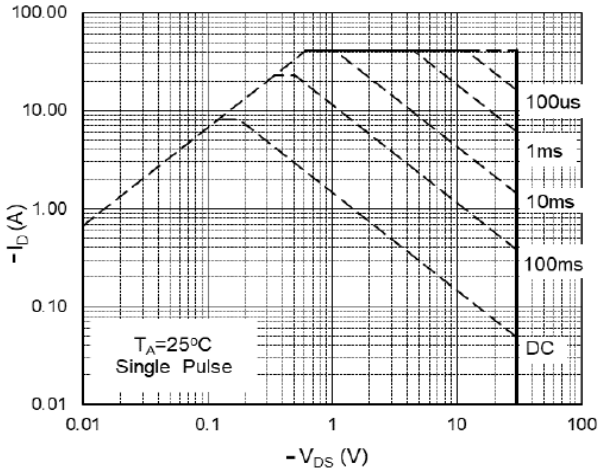


Fig.8 Safe Operating Area

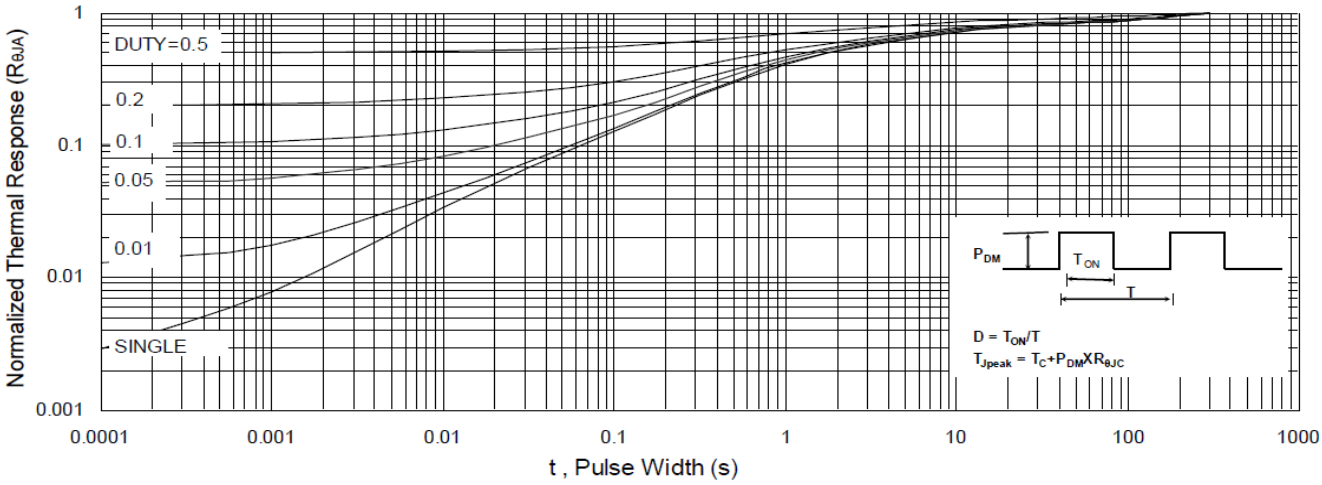


Fig.9 Normalized Maximum Transient Thermal Impedance

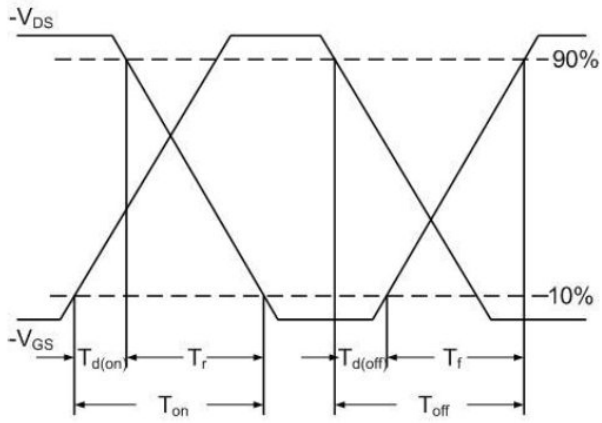


Fig.10 Switching Time Waveform

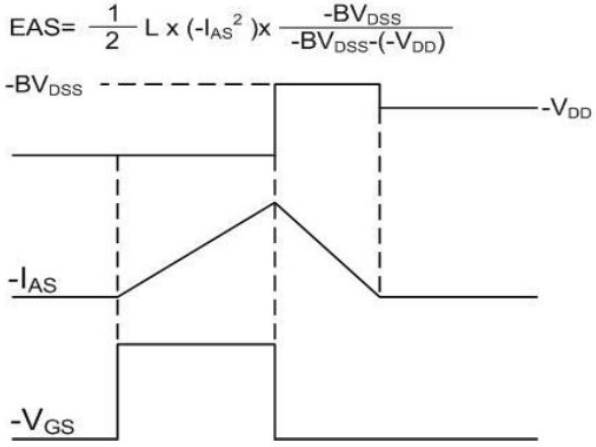


Fig.11 Unclamped Inductive Waveform