Elektronische Bauelemente

SSG4992-C

4.5A, 100V, $R_{DS(ON)}$ 70mΩ

Dual-N Enhancement Mode Power MOSFET

RoHS Compliant Product

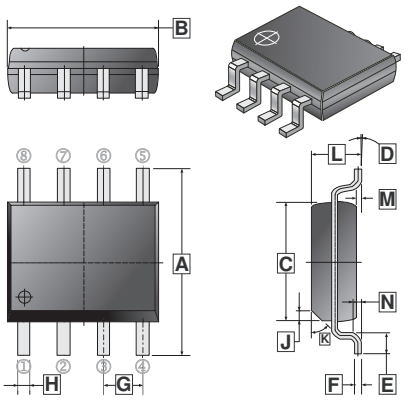
A suffix of "-C" specifies halogen & lead-free

DESCRIPTION

The SSG4992-C is the high cell density trenched dual N-ch MOSFETs, which provides excellent $R_{DS(ON)}$ and efficiency for most of the small power switching and load switch applications.

The SSG4992-C meets the RoHS and Green Product requirement with full function reliability approved.

SOP-8

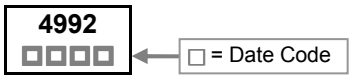


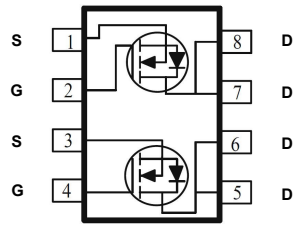
REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	5.79	6.20	H	0.33	0.51
B	4.70	5.11	J	0.375 REF.	
C	3.80	4.00	K	45°REF.	
D	0°	8°	L	1.30	1.752
E	0.40	1.27	M	0	0.25
F	0.10	0.25	N	0.25 REF.	
G	1.27 TYP.				

FEATURES

- Super Low Gate Charge
- Green Device Available
- Excellent Cdv/dt Effect Decline
- Advanced High Cell Density Trench Technology

MARKING





PACKAGE INFORMATION

Package	MPQ	Leader Size
SOP-8	2.5K	13 inch

ORDER INFORMATION

Part Number	Type
SSG4992-C	Lead (Pb)-free and Halogen-free

ABSOLUTE MAXIMUM RATINGS

Parameter		Symbol	Ratings	Unit
Drain-Source Voltage		V_{DS}	100	V
Gate-Source Voltage		V_{GS}	±20	V
Continuous Drain Current [1] @V_{GS}=10V	T_A=25°C	I_D	4.5	A
	T_A=70°C		3.2	
Pulsed Drain Current [3]		I_{DM}	24	A
Total Power Dissipation	T_A=25°C	P_D	1.5	W
Junction and Storage Temperature Range		T_J, T_{STG}	-55~150	°C
Thermal Resistance Ratings				
Thermal Resistance Junction-Ambient [1]		$R_{\theta JA}$	83	°C/W
Thermal Resistance Junction-Ambient		$R_{\theta JA}$	135	
Thermal Resistance Junction-Case [1]		$R_{\theta JC}$	50	

ELECTRICAL CHARACTERISTICS (T_J=25°C unless otherwise specified)

Parameter		Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Drain-Source Breakdown Voltage		BV_{DSS}	100	-	-	V	V_{GS}=0V, I_D=250μA
Gate Threshold Voltage		$V_{GS(th)}$	1	-	3	V	V_{DS}=V_{GS}, I_D=250μA
Forward Transfer Conductance		g_{fs}	-	14	-	S	V_{DS}=5V, I_D=4A
Gate-Source Leakage Current		I_{GSS}	-	-	±100	nA	V_{GS}=±20V
Drain-Source Leakage Current	T_J=25°C	I_{DSS}	-	-	1	uA	V_{DS}=80V, V_{GS}=0V
	T_J=55°C		-	-	5		V_{DS}=80V, V_{GS}=0V
Static Drain-Source On-Resistance [2]		$R_{DS(ON)}$	-	54	70	mΩ	V_{GS}=10V, I_D=4A
			-	72	95		V_{GS}=4.5V, I_D=3A
Gate Resistance		R_g	-	3	-	Ω	f=1MHz
Total Gate Charge		Q_g	-	11.9	-	nC	V_{DS}=50V V_{GS}=10V I_D=4A
Gate-Source Charge		Q_{gs}	-	1.7	-		
Gate-Drain Charge		Q_{gd}	-	2.6	-		
Turn-on Delay Time		$T_{d(on)}$	-	3.8	-	nS	V_{DD}=50V V_{GS}=10V I_D=4A R_G=3Ω
Rise Time		T_r	-	25.8	-		
Turn-off Delay Time		$T_{d(off)}$	-	16	-		
Fall Time		T_f	-	8.8	-		
Input Capacitance		C_{iss}	-	620	-	pF	V_{GS}=0V V_{DS}=25V f=1MHz
Output Capacitance		C_{oss}	-	105	-		
Reverse Transfer Capacitance		C_{rss}	-	63	-		
Source-Drain Diode							
Continuous Source Current [1]		I_S	-	-	4.5	A	V_G=V_D=0V, Force Current
Pulsed Source Current [2]		I_{SM}	-	-	24	A	
Diode Forward Voltage [2]		V_{SD}	-	-	1.2	V	V_{GS}=0V, I_S=1A
Reverse Recovery Time		t_{rr}	-	30	-	nS	I_F=4A, dI/dt=100A/μs, T_J=25°C
Reverse Recovery Charge		Q_{rr}	-	37	-	nC	

Notes:
1. Surface mounted on a 1 inch^2 FR-4 board with 2OZ copper.
2. Pulse test: Pulse width≦300μs, duty cycle≦2%.
3. The power dissipation is limited by 150°C junction temperature.

CHARACTERISTICS CURVE

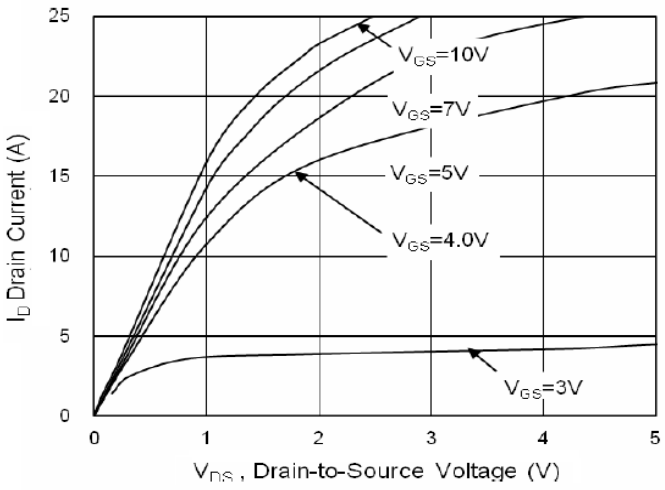


Fig.1 Typical Output Characteristics

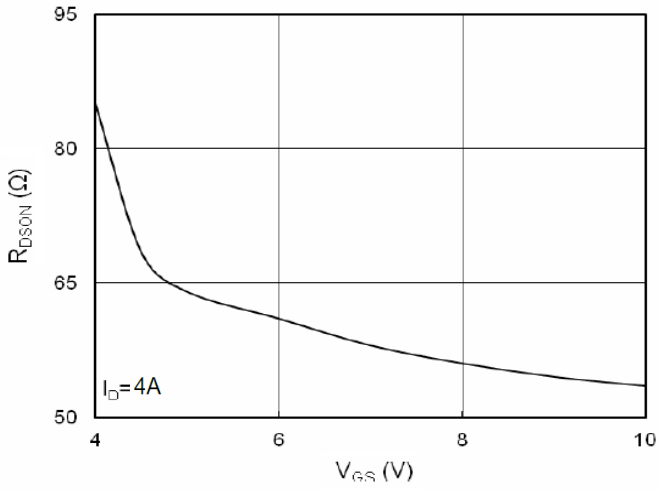


Fig.2 On-Resistance v.s Gate-Source

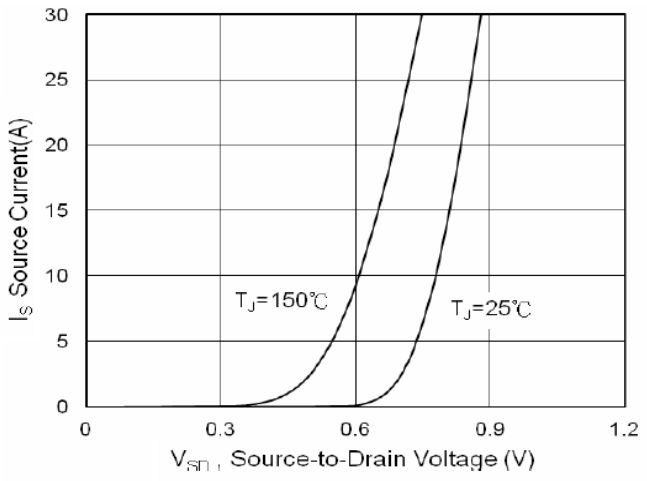


Fig.3 Forward Characteristics Of Reverse

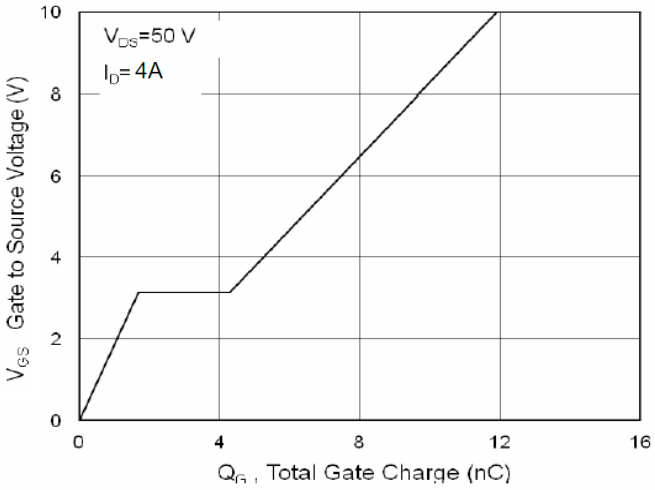


Fig.4 Gate-Charge Characteristics

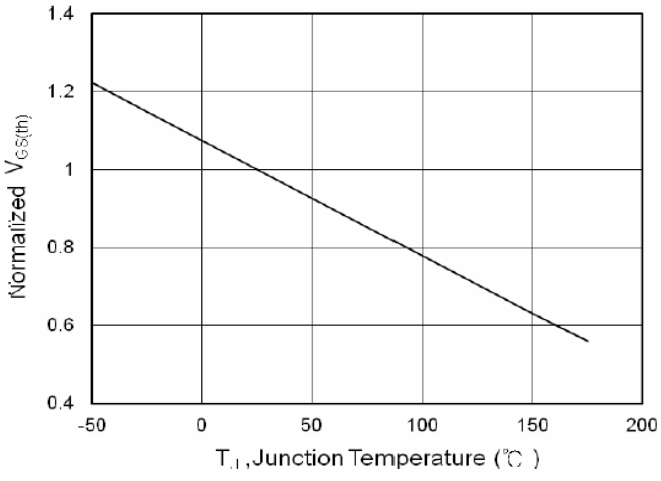


Fig.5 Normalized $V_{GS(th)}$ v.s T_J

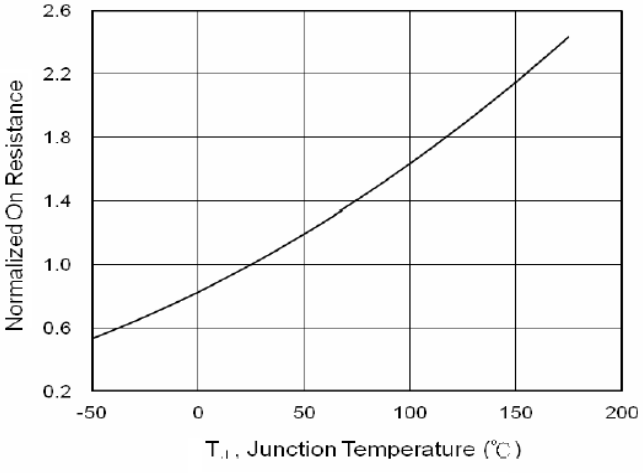


Fig.6 Normalized R_{DSON} v.s T_J

CHARACTERISTICS CURVE

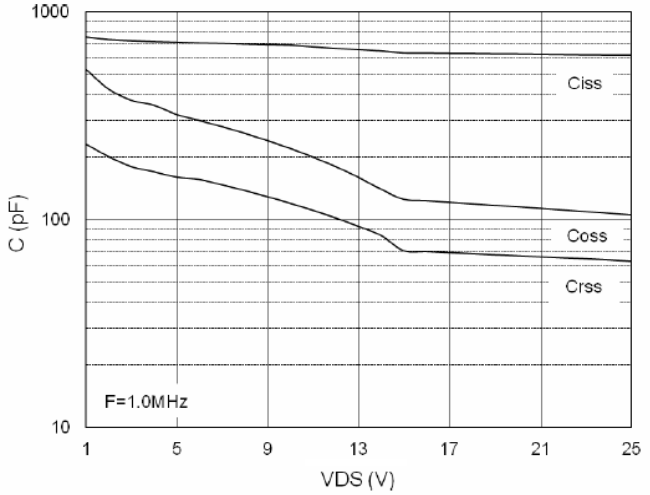


Fig.7 Capacitance

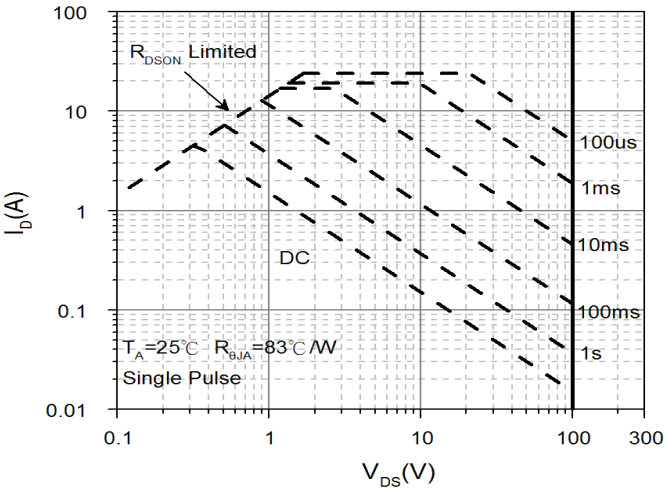


Fig.8 Safe Operating Area

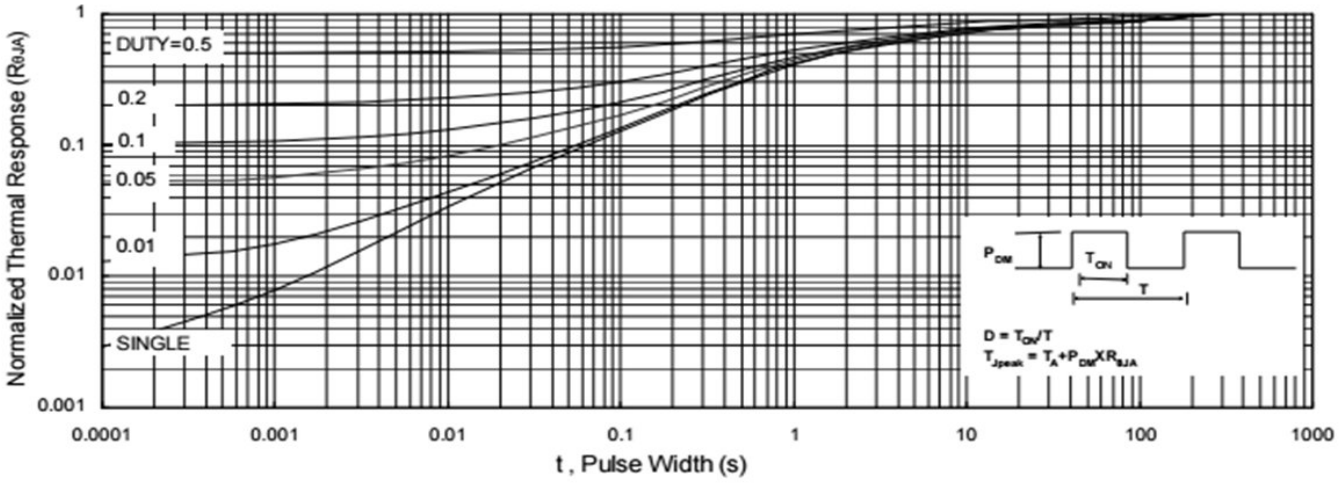


Fig.9 Normalized Maximum Transient Thermal Impedance

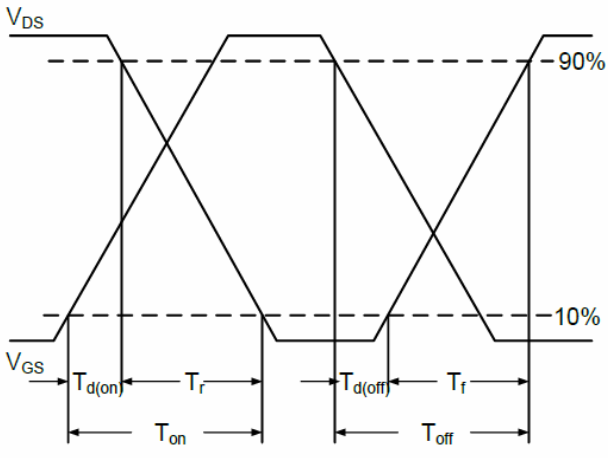


Fig.10 Switching Time Waveform

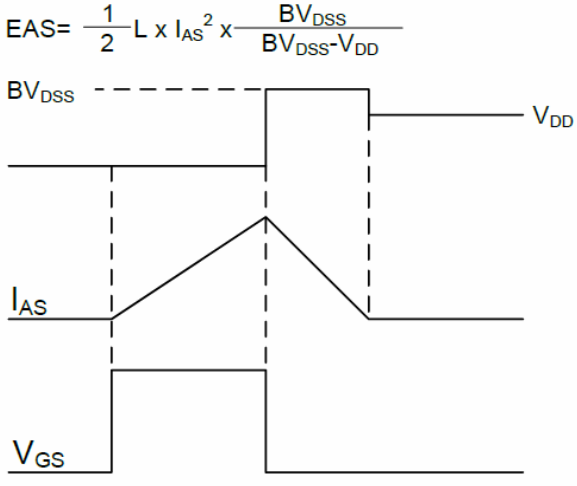


Fig.11 Unclamped Inductive Switching Waveform