Elektronische Bauelemente

SSG9926N

6.9 A, 20 V, $R_{DS(ON)}$ 30 mΩ
N-Ch Enhancement Mode Power MOSFET

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

FEATURES

- Low $R_{DS(on)}$ trench technology.
- Low thermal impedance.
- Fast switching speed.

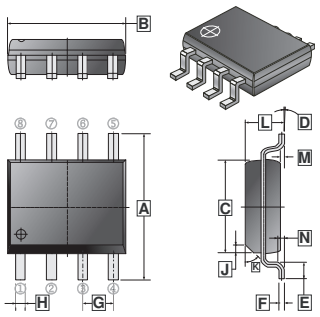
APPLICATIONS

- White LED boost converters
- Automotive Systems
- Industrial DC/DC Conversion Circuits

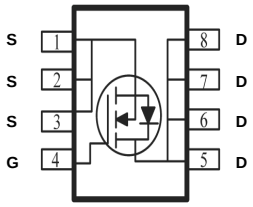
PACKAGE INFORMATION

Package	MPQ	Leader Size
SOP-8	2.5K	13' inch

SOP-8



REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	5.80	6.20	H	0.35	0.49
B	4.80	5.00	J	0.375 REF.	
C	3.80	4.00	K	45°	
D	0°	8°	L	1.35	1.75
E	0.40	0.90	M	0.10	0.25
F	0.19	0.25	N	0.25 REF.	
G	1.27 TYP.				



MAXIMUM RATINGS (T_A = 25°C unless otherwise specified)

Parameter		Symbol	Ratings	Unit
Drain-Source Voltage		V_{DS}	20	V
Gate-Source Voltage		V_{GS}	±12	V
Continuous Drain Current [1]	T_A = 25℃	I_D	6.9	A
	T_A = 70℃		5.4	A
Pulsed Drain Current [2]		I_{DM}	30	A
Continuous Source Current (Diode Conduction) [1]		I_S	2.8	A
Total Power Dissipation [1]	T_A = 25℃	P_D	2.1	W
	T_A = 70℃		1.3	W
Operating Junction & Storage Temperature Range		T_J, T_{STG}	-55 ~ 150	℃
Thermal Resistance Ratings				
Thermal Resistance Junction-ambient (Max.) [1]	t≦10 sec	$R_{\theta JA}$	62.5	℃ / W
	Steady State		110	℃ / W

Notes

1. Surface Mounted on 1" x 1" FR4 Board.
2. Pulse width limited by maximum junction temperature.

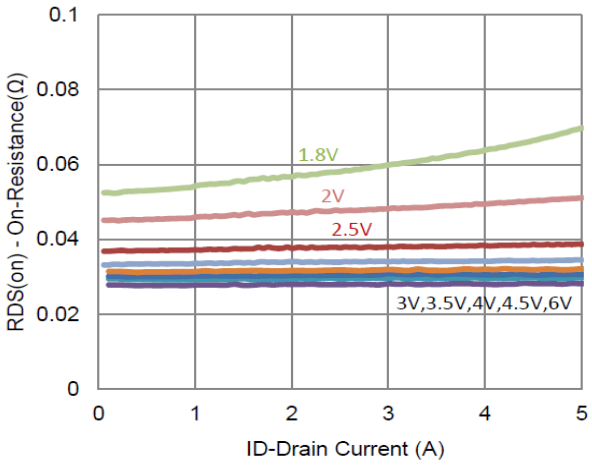
ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise specified)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Teat Conditions
Static						
Gate Threshold Voltage	$V_{GS(th)}$	1	-	-	V	V_{DS}= V_{GS}, I_D=250μA
Gate-Body Leakage Current	I_{GSS}	-	-	±100	nA	V_{DS}= 0V, V_{GS}= ±12V
Zero Gate Voltage Drain Current	I_{DSS}	-	-	1	μA	V_{DS}=16V, V_{GS}=0V
		-	-	25		V_{DS}=16V, V_{GS}=0V, T_J=55℃
On-State Drain Current[1]	$I_{D(on)}$	10	-	-	A	V_{DS}=5V, V_{GS}=4.5V
Drain-Source On-Resistance[1]	$R_{DS(ON)}$	-	-	30	mΩ	V_{GS}=4.5V, I_D=4.8A
		-	-	40		V_{GS}=2.5V, I_D=3.9A
Forward Transconductance[1]	g_{fs}	-	22	-	S	V_{DS}=10V, I_D=4.8A
Diode Forward Voltage	V_{SD}	-	0.74	-	V	I_S=1.4A, V_{GS}=0V
Dynamic [2]						
Total Gate Charge	Q_g	-	7	-	nC	I_D=4.8A V_{DS}=10V V_{GS}=4.5V
Gate-Source Charge	Q_{gs}	-	1.2	-		
Gate-Drain Charge	Q_{gd}	-	2.6	-		
Turn-On Delay Time	$T_{d(on)}$	-	10	-	nS	V_{DS}=10V I_D=4.8A V_{GEN}=4.5V R_L=2.1Ω R_{GEN}=6Ω
Rise Time	T_r	-	17	-		
Turn-Off Delay Time	$T_{d(off)}$	-	38	-		
Fall Time	T_f	-	14	-		
Input Capacitance	C_{ISS}	-	439	-	pF	V_{DS}=15V V_{GS}=0V f=1Mhz
Output Capacitance	C_{OSS}	-	78	-		
Reverse Transfer Capacitance	C_{RSS}	-	68	-		

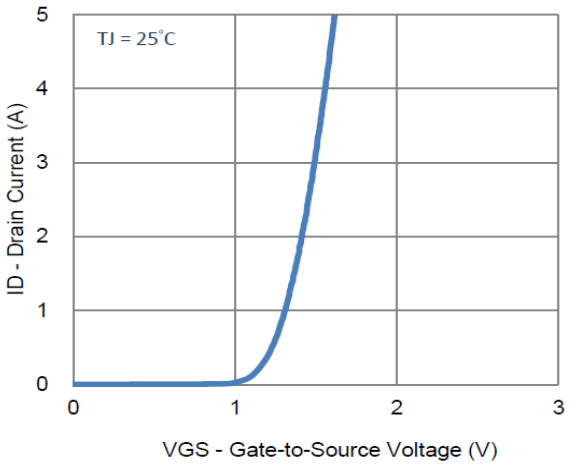
Notes

1. Pulse test：PW ≦ 300μs duty cycle ≦ 2%.
2. Guaranteed by design, not subject to production testing.

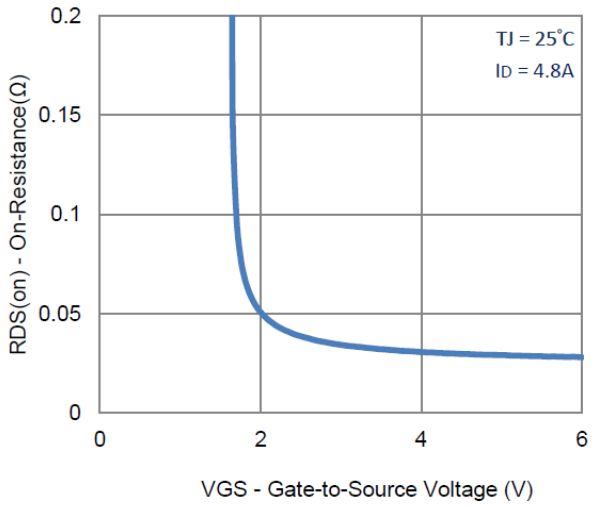
TYPICAL ELECTRICAL CHARACTERISTICS CURVE



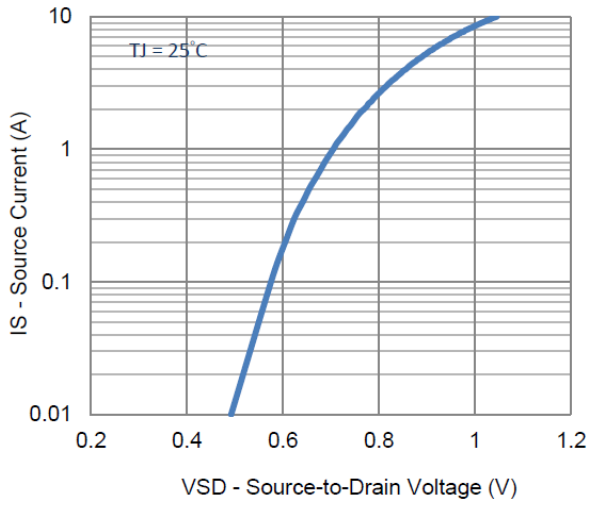
1. On-Resistance vs. Drain Current



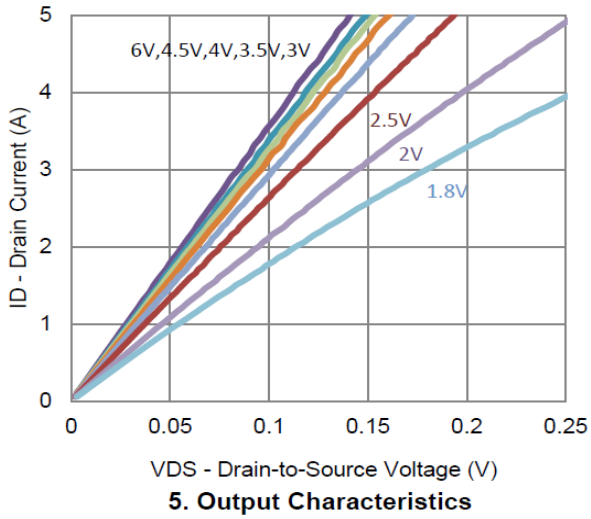
2. Transfer Characteristics



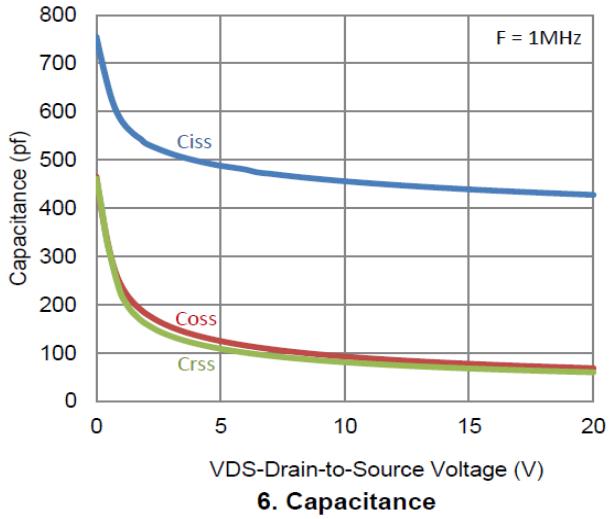
3. On-Resistance vs. Gate-to-Source Voltage



4. Drain-to-Source Forward Voltage

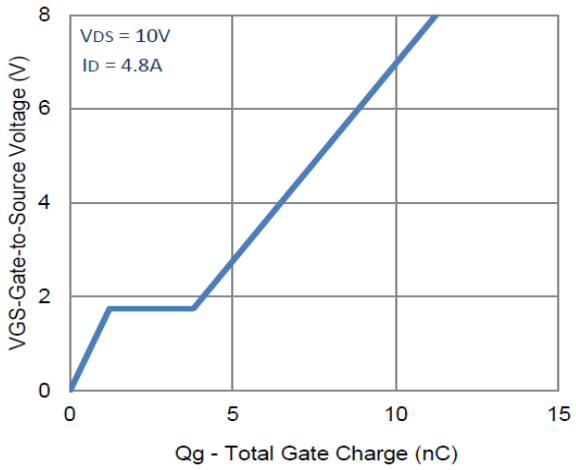


5. Output Characteristics

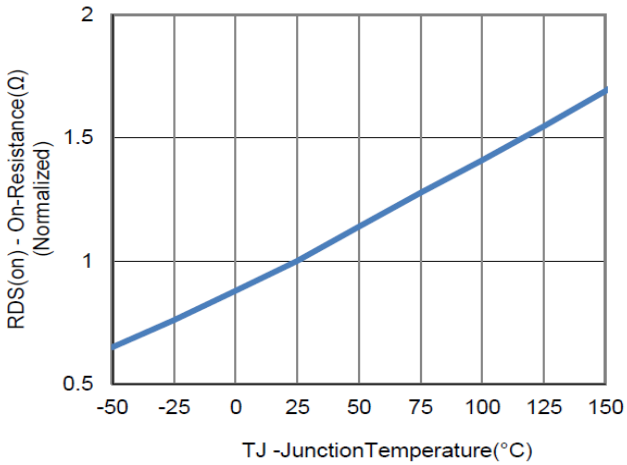


6. Capacitance

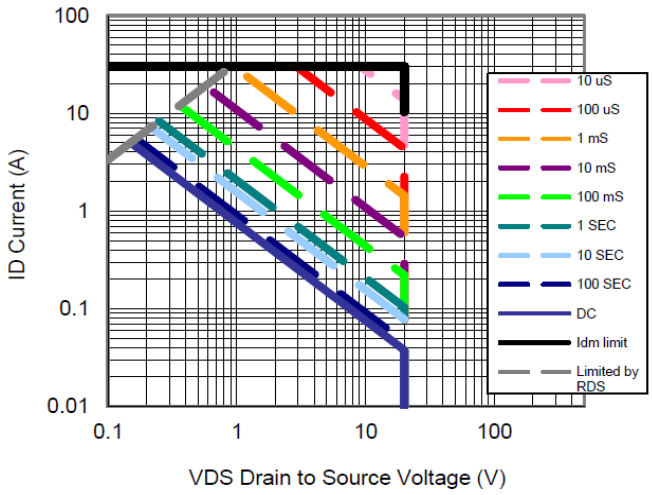
TYPICAL ELECTRICAL CHARACTERISTICS CURVE



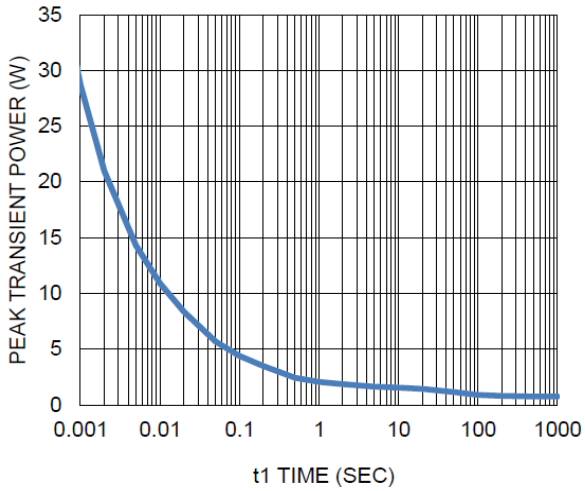
7. Gate Charge



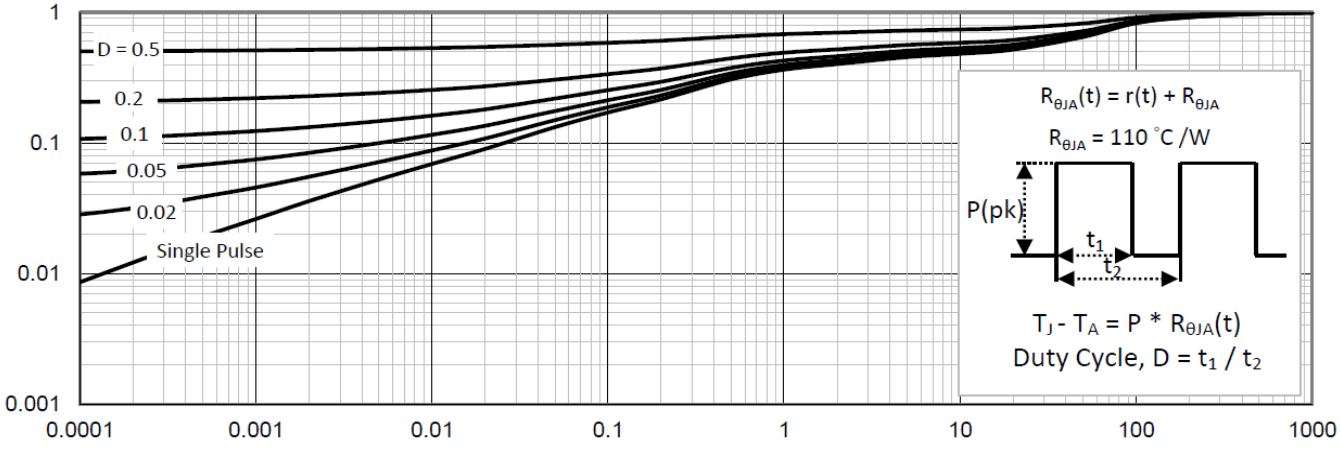
8. Normalized On-Resistance Vs Junction Temperature



9. Safe Operating Area



10. Single Pulse Maximum Power Dissipation



11. Normalized Thermal Transient Junction to Ambient