Elektronische Bauelemente

SSG07N10J-C

7A, 100V, $R_{DS(ON)}$ 28mΩ

N-Ch Enhancement Mode Power MOSFET

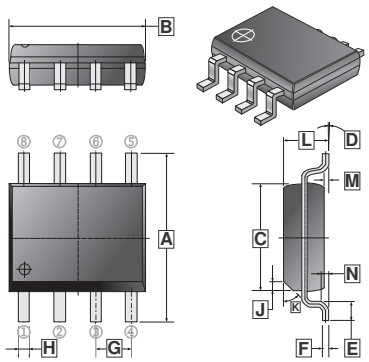
RoHS Compliant Product

A suffix of "-C" specifies halogen free

DESCRIPTION

SSG07N10J-C is the highest performance trench N-Ch MOSFETs with extreme high cell density, which provide excellent $R_{DS(ON)}$ and gate charge for most of the synchronous buck converter applications. 100% E_{AS} guaranteed with full function reliability approved.

SOP-8

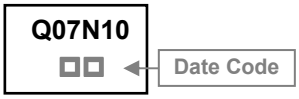


REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	5.79	6.20	H	0.33	0.51
B	4.70	5.11	J	0.375 REF.	
C	3.80	4.00	K	45°REF.	
D	0°	8°	L	1.3	1.752
E	0.40	1.27	M	0	0.25
F	0.10	0.25	N	0.25 REF.	
G	1.27 TYP.				

FEATURES

- Advanced High Cell Density Trench Technology
- Super Low Gate Charge
- 100% E_{AS} Guaranteed
- Green Device Available

MARKING

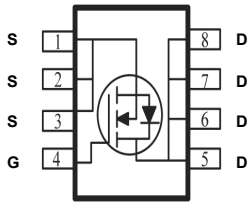


PACKAGE INFORMATION

Package	MPQ	Leader Size
SOP-8	4K	13 inch

ORDER INFORMATION

Part Number	Type
SSG07N10J-C	Lead (Pb)-free and Halogen-free



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

Parameter	Symbol	Ratings	Unit
Drain-Source Voltage	V_{DS}	100	V
Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain Current	I_D	7	A
Pulsed Drain Current	I_{DM}	28	A
Single Pulse Avalanche Energy [1]	E_{AS}	16	mJ
Total Power Dissipation	P_D	1.4	W
Thermal Resistance from Junction-Ambient	$R_{\theta JA}$	89	°C/W
Lead Temperature for Soldering Purposes @1/8" form Case for 10s	T_L	260	°C
Junction and Storage Temperature Range	T_J, T_{STG}	150, -55~150	°C

Note:

1. E_{AS} condition: V_{DD}=25V, L=0.1mH, R_G=25Ω, Starting T_J=25°C.

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

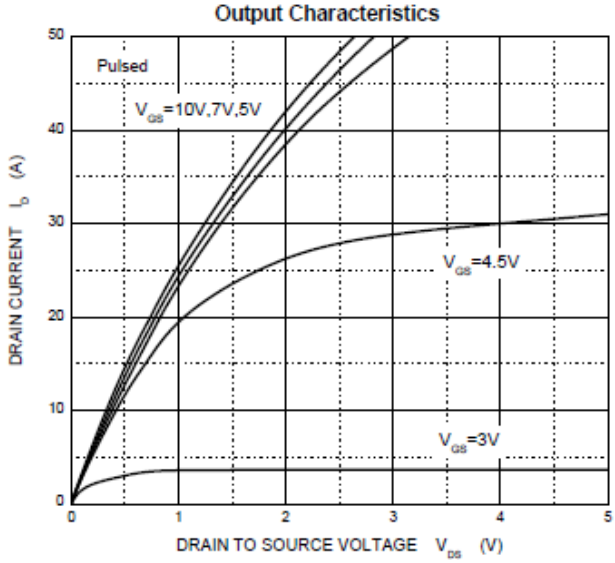
Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Drain-Source Breakdown Voltage	BV_{DSS}	100	-	-	V	V_{GS}=0, I_D=250μA
Drain-Source Leakage Current	I_{DSS}	-	-	1	μA	V_{DS}=80V, V_{GS}=0
Gate-Source Leakage Current	I_{GSS}	-	-	±100	nA	V_{DS}=0, V_{GS}= ±20V
Gate-Threshold Voltage [1]	$V_{GS(th)}$	1.2	-	3	V	V_{DS}=V_{GS}, I_D=250μA
Static Drain-Source On-Resistance [1]	$R_{DS(ON)}$	-	25	28	mΩ	V_{GS}=10V, I_D=7A
		-	30	38		V_{GS}=4.5V, I_D=5A
Forward Transconductance [1]	g_{fs}	-	22	-	S	V_{GS}=5V, I_D=7A
Total Gate Charge	Q_g	-	31.9	-	nC	V_{DS}=80V V_{GS}=10V I_D=7A
Gate-Source Charge	Q_{gs}	-	5.5	-		
Gate-Drain (“Miller”) Change	Q_{gd}	-	8.8	-		
Turn-on Delay Time	$T_{d(on)}$	-	11.4	-	nS	V_{DD}=50V V_{GS}=10V R_G=3.3Ω R_L=6.7Ω I_D=7A
Rise Time	T_r	-	27.2	-		
Turn-off Delay Time	$T_{d(off)}$	-	34.7	-		
Fall Time	T_f	-	16.6	-		
Input Capacitance	C_{iss}	-	1848	-	pF	V_{GS}=0 V_{DS}=15V f=1MHz
Output Capacitance	C_{oss}	-	276	-		
Reverse Transfer Capacitance	C_{rss}	-	97.9	-		
Gate Resistance	R_g	-	1.9	-	Ω	V_{DS}=0, V_{GS}=0, f=1MHz
Source-Drain Diode Characteristics						
Diode Forward Voltage [1]	V_{SD}	-	-	1.2	V	V_{GS}=0, I_S=1A
Continuous Source Current	I_S	-	-	7	A	
Pulsed Source Current	I_{SM}	-	-	28		

Note:

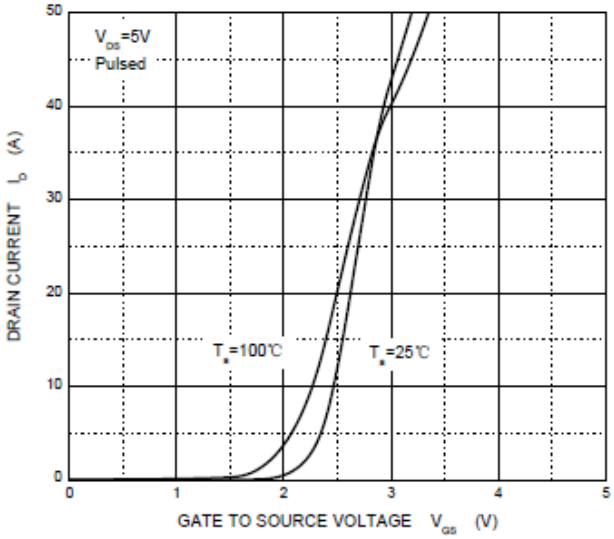
1. Pulse Test: Pulse width≦300μs, duty cycle≦2%.

CHARACTERISTIC CURVES

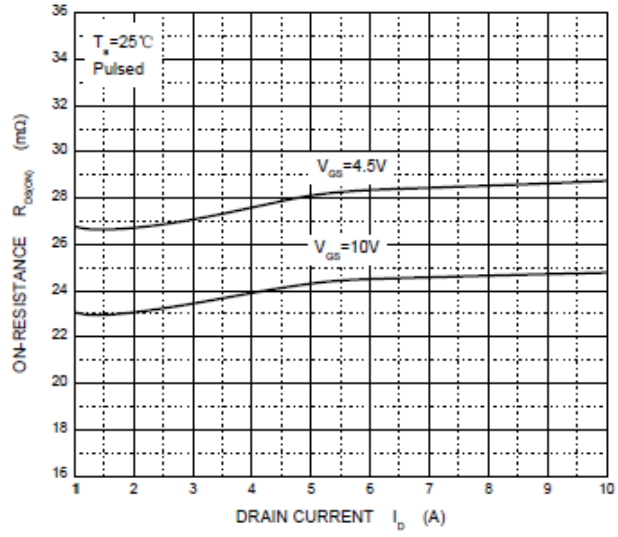
Output Characteristics



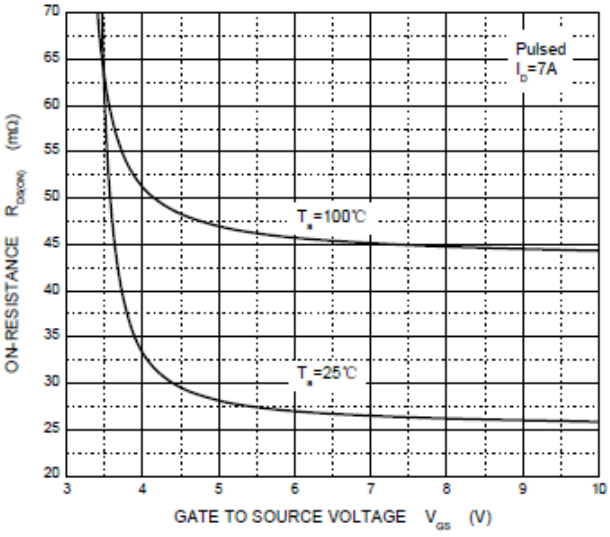
Transfer Characteristics



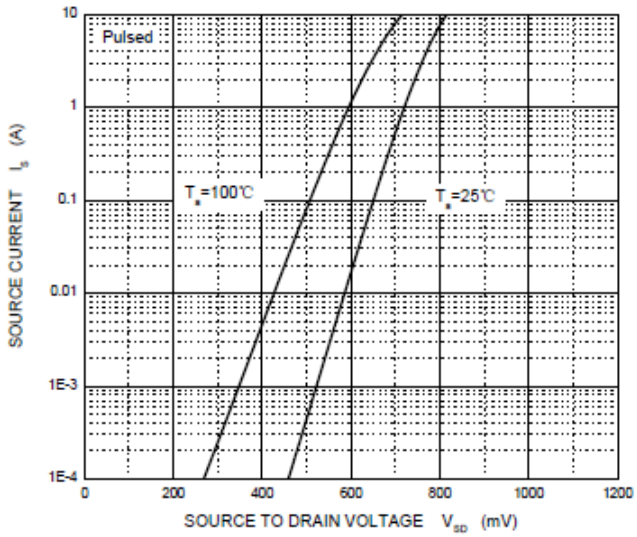
$R_{DS(ON)}$ — I_D



$R_{DS(ON)}$ — V_{GS}



I_S — V_{SD}



Threshold Voltage