Elektronische Bauelemente

SSG4940N

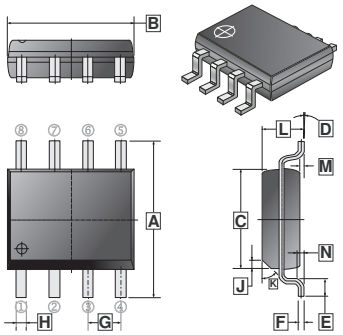
8.3A , 40V , $R_{DS(ON)}$ 22 mΩ
Dual-N Enhancement Mode Power MOSFET

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

DESCRIPTION

These miniature surface mount MOSFETs utilize a high cell density trench process to provide low $R_{DS(on)}$ and to ensure minimal power loss and heat dissipation. Typical applications are DC-DC converters and power management in portable and battery-powered products such as computers, printers, PCMCIA cards, cellular and cordless telephones.

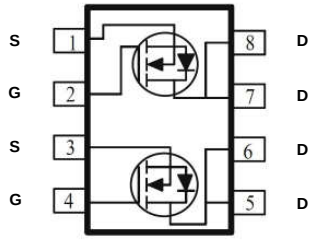
SOP-8



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.				

FEATURES

- Low $R_{DS(on)}$ provides higher efficiency and extends battery life.
- Low thermal impedance copper leadframe SOP-8 saves board space.
- Fast switching speed.
- High performance trench technology.



PACKAGE INFORMATION

Package	MPQ	Leader Size
SOP-8	2.5K	13 inch

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

Parameter		Symbol	Ratings	Unit
Drain-Source Voltage		V_{DS}	40	V
Gate-Source Voltage		V_{GS}	±20	V
Continuous Drain Current [1]	T_A=25℃	I_D	8.3	A
	T_A=70℃		6.8	A
Pulsed Drain Current [2]		I_{DM}	50	A
Continuous Source Current (Diode Conduction) [1]		I_S	2.3	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 Rating				
Maximum Junction to Ambient [a]	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	Test condition
Static						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	30	-	-	V	V_{GS}=0, I_D=250μA
Gate-Threshold Voltage	$V_{GS(th)}$	1	-	-	V	V_{DS}=V_{GS}, I_D=250μA
Gate-Body Leakage	I_{GSS}	-	-	±100	nA	V_{DS}=0, V_{GS}=20V
Zero Gate Voltage Drain Current	I_{DSS}	-	-	1	μA	V_{DS}=24V, V_{GS}=0
		-	-	25	μA	V_{DS}=24V, V_{GS}=0, T_J=55℃
On-State Drain Current [1]	$I_{D(on)}$	20	-	-	A	V_{DS}=5V, V_{GS}=10V
Drain-Source On-Resistance [1]	$R_{DS(ON)}$	-	-	22	mΩ	V_{GS}=10V, I_D=8.3A
		-	23	27		V_{GS}=4.5V, I_D=7.3A
Forward Transconductance [1]	g_{fs}	-	40	-	S	V_{DS}=15V, I_D=8.3A
Diode Forward Voltage	V_{SD}	-	0.7	-	V	I_S=2.3A, V_{GS}=0
Pulsed Source Current (BodyDiode) [1]	I_{SM}	-	5	-	A	
Dynamic [2]						
Total Gate Charge	Q_g	-	20	-	nC	I_D=10A V_{DS}=15V V_{GS}=5V
Gate-Source Charge	Q_{gs}	-	7.0	-		
Gate-Drain Charge	Q_{gd}	-	7.0	-		
Input Capacitance	C_{iss}	-	1317	-	pF	N-Channel V_{DS}=15V, V_{GS}=0V, f=1MHz
Output Capacitance	C_{oss}	-	272	-		
Turn-On Delay Time	$T_{d(on)}$	-	20	-	nS	V_{DD}=25V I_D=1A V_{GEN}=10V R_L=25Ω
Rise Time	T_r	-	9	-		
Turn-Off Delay Time	$T_{d(off)}$	-	70	-		
Fall Time	T_f	-	20	-		

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