Elektronische Bauelemente

SSPS922NE

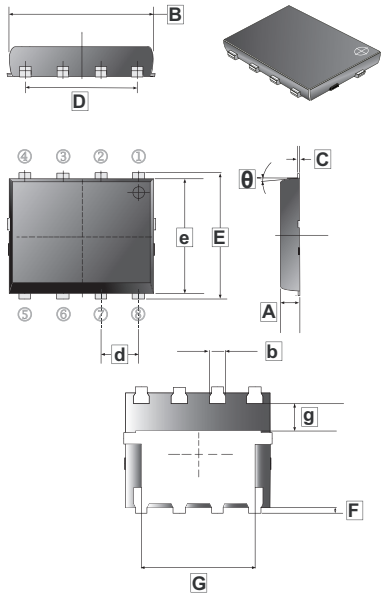
8.2 A , 20 V , $R_{DS(ON)}$ 17.5 mΩ
N-Ch Enhancement Mode Power MOSFET

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.

DFN3x3-8PP



FEATURES

- Low $R_{DS(on)}$ provides higher efficiency and extends battery life
- Low thermal impedance copper leadframe DFN3x3-8PP saves board space
- Fast switching speed
- High performance trench technology

APPLICATION

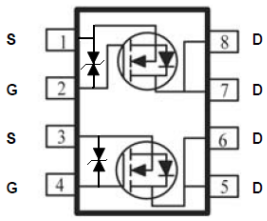
DC-DC converters and power management in portable and battery-powered products such as computers, printers, PCMCIA cards, cellular and cordless telephones.

PACKAGE INFORMATION

Package	MPQ	Leader Size
DFN3x3-8PP	3K	13 inch

REF.	Millimeter Min.	Millimeter Max.	REF.	Millimeter Min.	Millimeter Max.
A	0.70	0.90	θ	0°	12°
B	3.00BSC		b	0.20	0.40
C	0.10	0.25	d	0.65BSC	
D	1.80	2.3	e	3.00BSC	
E	3.2BSC		g	0.70(TYP.)	
F	0.01	0.02			
G	2.35BSC				

Top View



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}	±8	V
Continuous Drain Current [1]	T_A = 25℃	I_D	8.2	A
	T_A = 70℃		6	A
Pulsed Drain Current [2]		I_{DM}	40	A
Continuous Source Current (Diode Conduction) [1]		I_S	2.1	A
Total Power Dissipation [1]	T_A = 25℃	P_D	1.5	W
	T_A = 70℃		0.8	W
Operating Junction & Storage Temperature Range		T_J, T_{STG}	-55~150	℃
Thermal Resistance Ratings				
Thermal Resistance Junction-Ambient (Max.) [1]	t ≦ 10sec	$R_{\theta JA}$	83	℃ / W
	Steady State		120	℃ / W

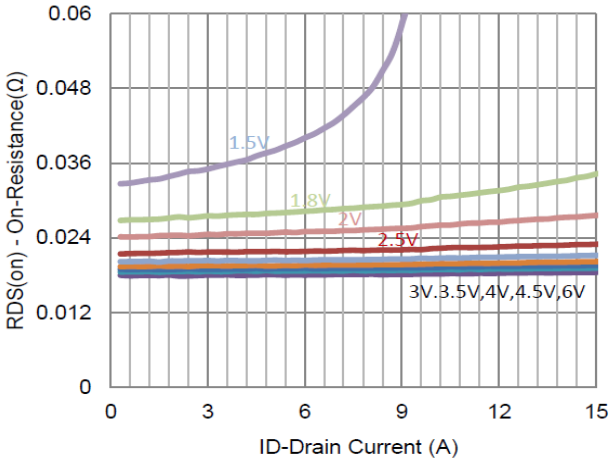
Notes:
1. Surface Mounted on 1" x 1" FR4 Board.
2. Pulse width limited by maximum junction temperature.

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

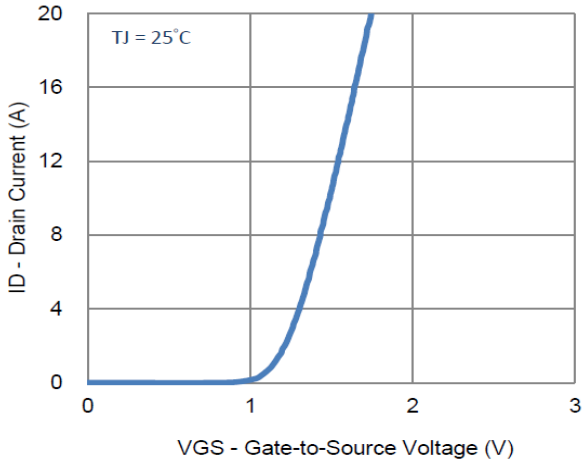
Parameter	Symbol	Min.	Typ.	Max.	Unit	Teat Conditions
Static						
Gate-Threshold Voltage	$V_{GS(th)}$	0.4	-	-	V	V_{DS}=V_{GS}, I_D=250μA
Gate-Body Leakage Current	I_{GSS}	-	-	±100	nA	V_{DS}=0, V_{GS}=±8V
Zero Gate Voltage Drain Current	I_{DSS}	-	-	1	μA	V_{DS}=16V, V_{GS}=0
		-	-	25		V_{DS}=16V, V_{GS}=0, T_J=55℃
On-State Drain Current [1]	$I_{D(on)}$	15	-	-	A	V_{DS}=5V, V_{GS}=4.5V
Drain-Source On-Resistance [1]	$R_{DS(ON)}$	-	-	17.5	mΩ	V_{GS}=4.5V, I_D=2A
		-	-	22		V_{GS}=2.5V, I_D=2A
Forward Transconductance [1]	g_{fs}	-	25	-	S	V_{DS}=10V, I_D=6.6A
Diode Forward Voltage	V_{SD}	-	0.68	-	V	I_S=1.1A, V_{GS}=0
Dynamic [2]						
Total Gate Charge	Q_g	-	11	-	nC	V_{DS}=10V, V_{GS}=4.5V, I_D=6.6A
Gate-Source Charge	Q_{gs}	-	2.7	-		
Gate-Drain Charge	Q_{gd}	-	2.1	-		
Input Capacitance	C_{iss}	-	877	-	pF	V_{DS}=15 V, V_{GS}=0 f=1MHz
Output Capacitance	C_{oss}	-	88	-		
Reverse Transfer Capacitance	C_{rss}	-	254	-		
Turn-On Delay Time	$T_{d(on)}$	-	57	-	nS	V_{DS}=10V I_D=6.6A V_{GEN}=4.5V R_L=1.6Ω R_{GEN}=6Ω
Rise Time	T_r	-	87	-		
Turn-Off Delay Time	$T_{d(off)}$	-	604	-		
Fall Time	T_f	-	198	-		

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

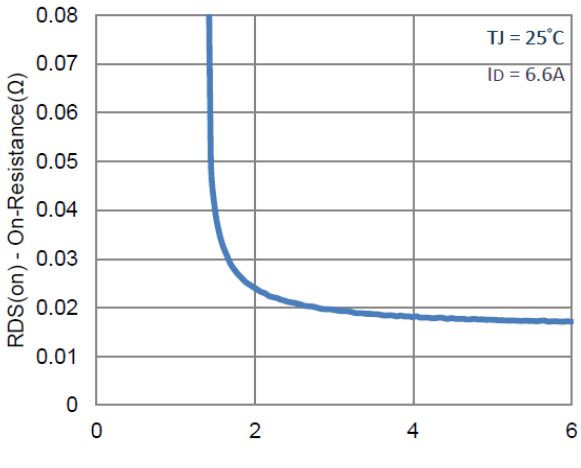
CHARACTERISTIC CURVE



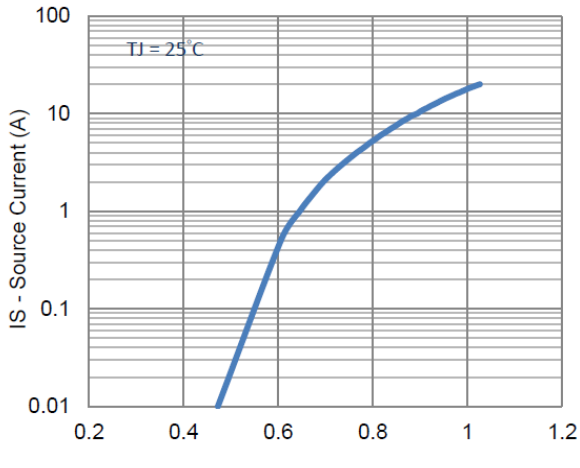
1. On-Resistance vs. Drain Current



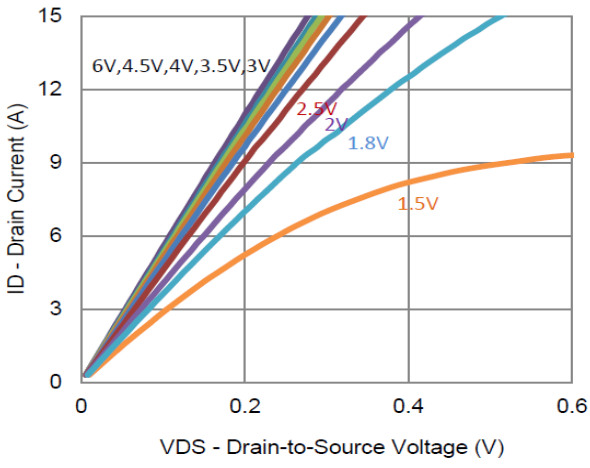
2. Transfer Characteristics



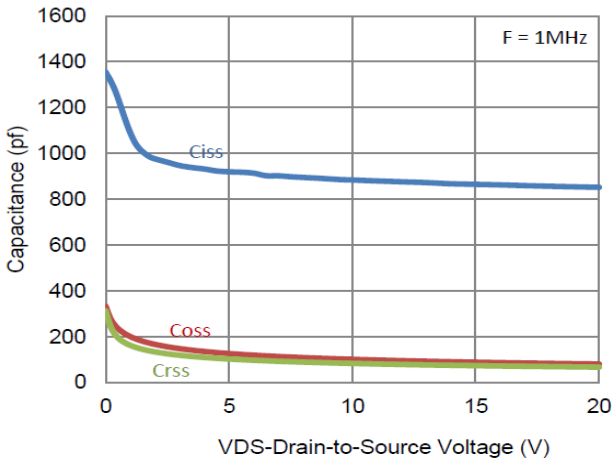
3. On-Resistance vs. Gate-to-Source Voltage



4. Drain-to-Source Forward Voltage

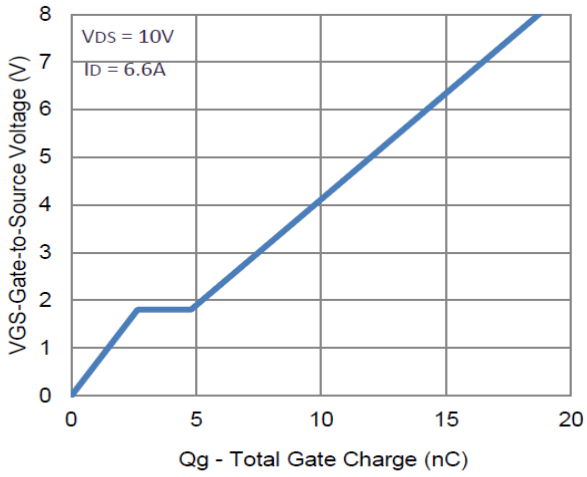


5. Output Characteristics

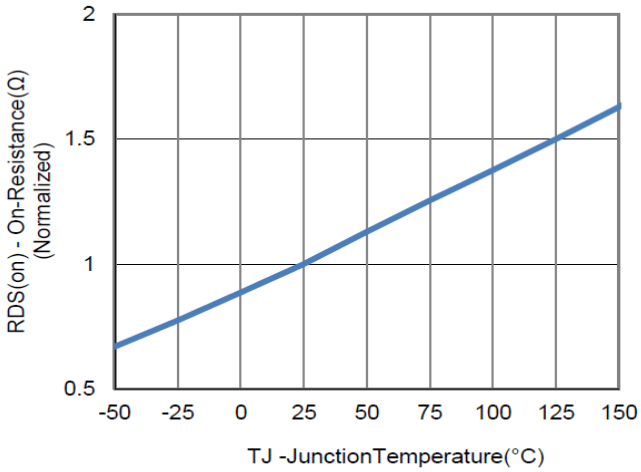


6. Capacitance

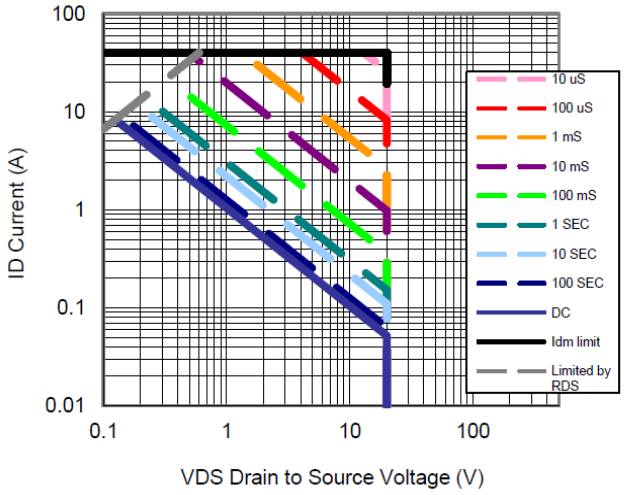
CHARACTERISTIC CURVE



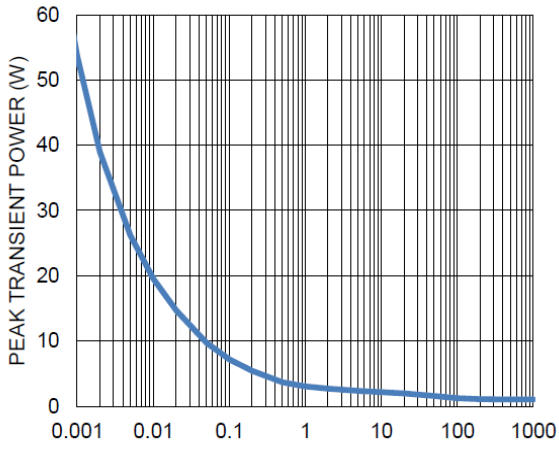
7. Gate Charge



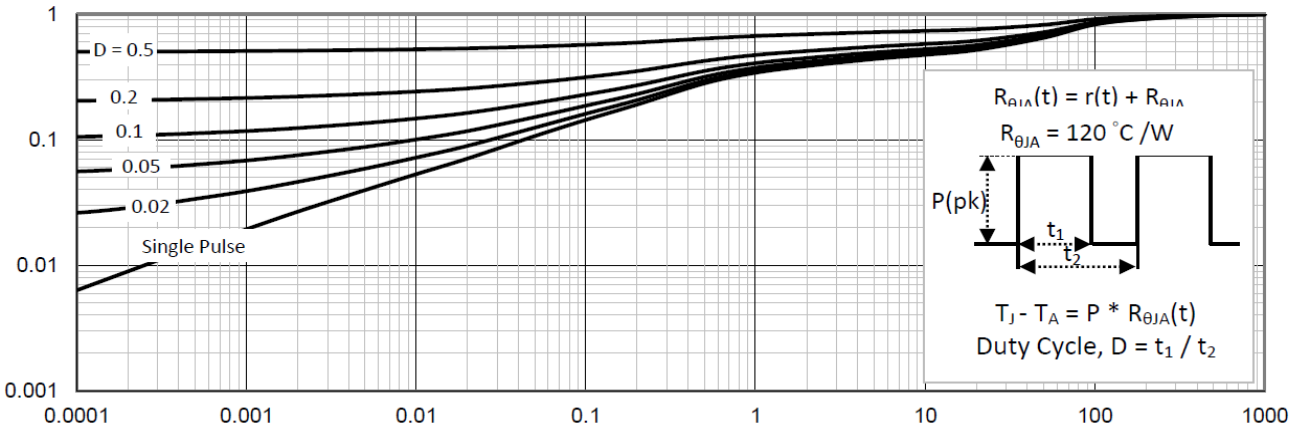
8. Normalized On-Resistance Vs Junction Temperature



9. Safe Operating Area



10. Single Pulse Maximum Power Dissipation



11. Normalized Thermal Transient Junction to Ambient