Elektronische Bauelemente

SSG4401P

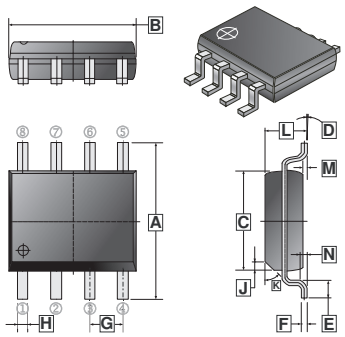
-3.6 A, -150 V, $R_{DS(ON)}$ 160 mΩ
P-Ch Enhancement Mode Power MOSFET

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.

SOP-8



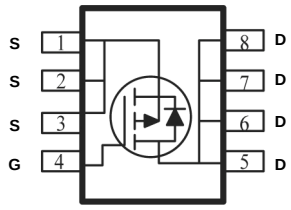
REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	5.80	6.20	H	0.35	0.49
B	4.80	5.00	J	0.375 REF.	
C	3.80	4.00	K	45°	
D	0°	8°	L	1.35	1.75
E	0.40	0.90	M	0.10	0.25
F	0.19	0.25	N	0.25 REF.	
G	1.27 TYP.				

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.

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
SOP-8	2.5K	13' inch

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

Parameter		Symbol	Ratings	Unit
Drain-Source Voltage		V_{DS}	-150	V
Gate-Source Voltage		V_{GS}	±20	V
Continuous Drain Current [1]	T_A = 25℃	I_D	-3.6	A
	T_A = 70℃		-3.1	A
Pulsed Drain Current [2]		I_{DM}	-15	A
Continuous Source Current (Diode Conduction) [1]		I_S	-4.1	A
Total Power Dissipation [1]	T_A = 25℃	P_D	3.1	W
	T_A = 70℃		2.2	W
Operating Junction & Storage Temperature Range		T_J, T_{STG}	-55 ~ 150	℃
Thermal Resistance Ratings				
Thermal Resistance Junction-Ambient (Max.) [1]	t ≦ 10 sec	$R_{\theta JA}$	40	℃ / W
	Steady State		80	

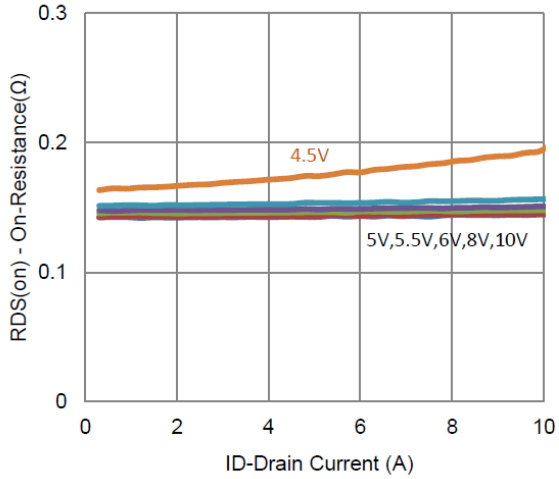
Notes:
1. Surface Mounted on 1" x 1" FR4 Board.
2. Pulse width limited by maximum junction temperature.

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

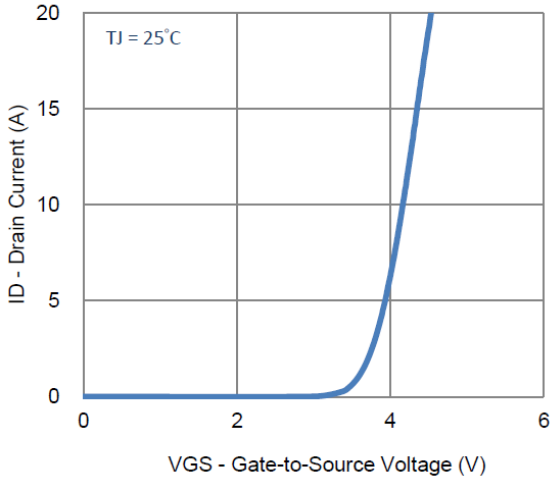
Parameter	Symbol	Min.	Typ.	Max.	Unit	Teat Conditions
Static						
Gate-Threshold Voltage	$V_{GS(th)}$	-1	-	-	V	V_{DS}= V_{GS}, I_D= -250μA
Gate-Body Leakage Current	I_{GSS}	-	-	±100	nA	V_{DS}=0, V_{GS}= ±20V
Zero Gate Voltage Drain Current	I_{DSS}	-	-	-1	μA	V_{DS}= -120V, V_{GS}=0
		-	-	-25		V_{DS}= -120V, V_{GS}=0, T_J=55℃
On-State Drain Current [1]	$I_{D(on)}$	-5	-	-	A	V_{DS}= -5V, V_{GS}= -10V
Drain-Source On-Resistance [1]	$R_{DS(ON)}$	-	-	160	mΩ	V_{GS}= -10V, I_D= -2.8A
		-	-	170		V_{GS}= -5.5V, I_D= -2.3A
Forward Transconductance [1]	g_{fs}	-	38	-	S	V_{DS}= -15V, I_D= -2.8A
Diode Forward Voltage	V_{SD}	-	-0.76	-	V	I_S= -2.1A, V_{GS}=0
Dynamic [2]						
Input Capacitance	C_{iss}	-	7944	-	pF	V_{DS}=-15V V_{GS}=0 f=1MHz
Output Capacitance	C_{oss}	-	290	-		
Reverse Transfer Capacitance	C_{rss}	-	262	-		
Total Gate Charge	Q_g	-	64	-	nC	I_D= -2.8A V_{DS}= -75V V_{GS}= -4.5V
Gate-Source Charge	Q_{gs}	-	28	-		
Gate-Drain Charge	Q_{gd}	-	32	-		
Turn-On Delay Time	$T_{d(on)}$	-	19	-	nS	V_{Ds}= -75V I_D= -2.8A V_{GEN}= -10V R_L=26.8Ω R_G=6Ω
Rise Time	T_r	-	34	-		
Turn-Off Delay Time	$T_{d(off)}$	-	130	-		
Fall Time	T_f	-	67	-		

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

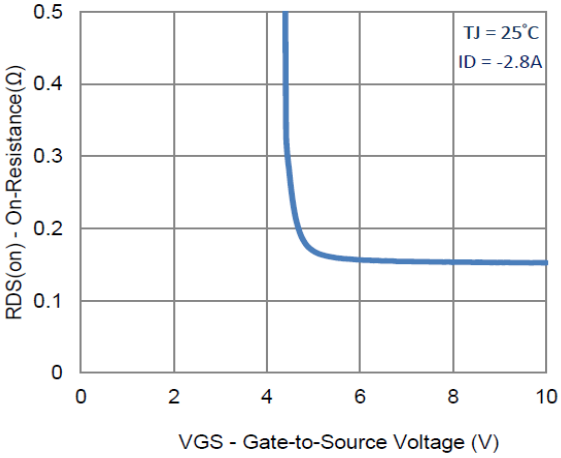
CHARACTERISTIC CURVES



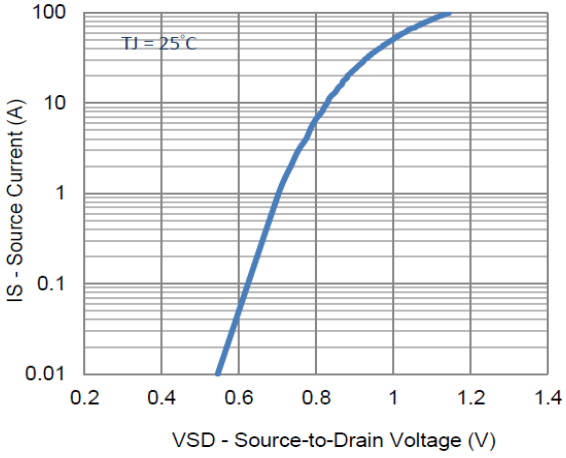
1. On-Resistance vs. Drain Current



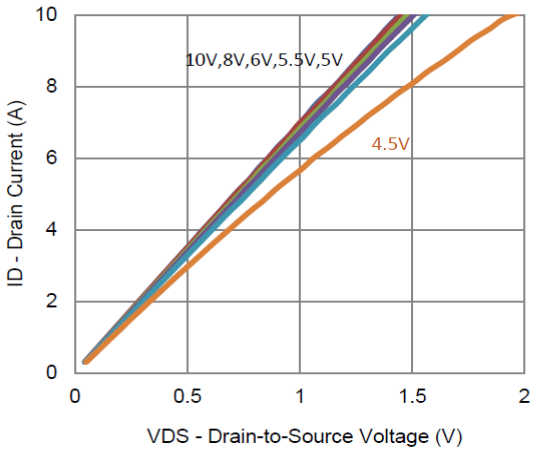
2. Transfer Characteristics



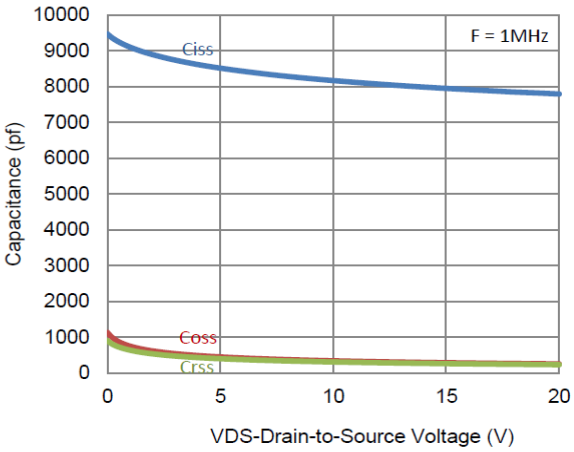
3. On-Resistance vs. Gate-to-Source Voltage



4. Drain-to-Source Forward Voltage

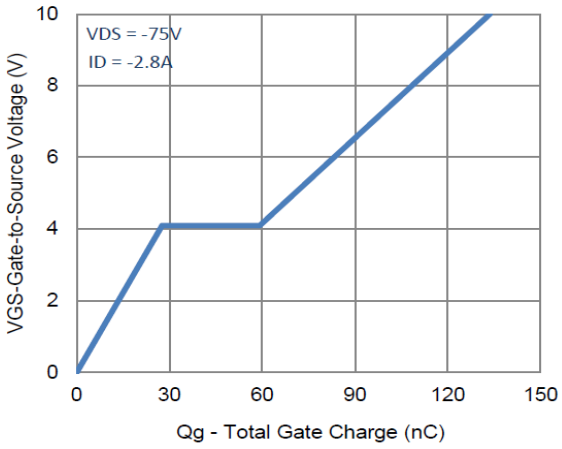


5. Output Characteristics

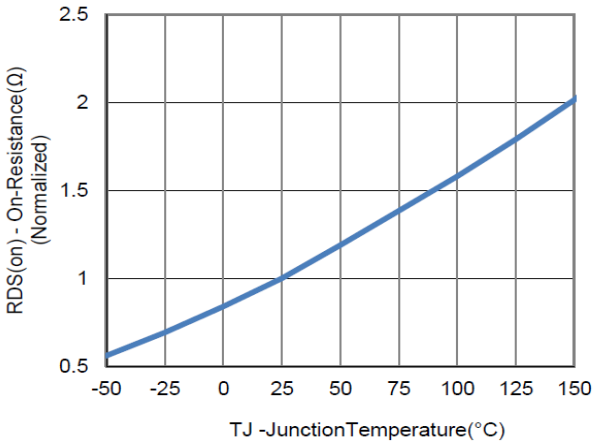


6. Capacitance

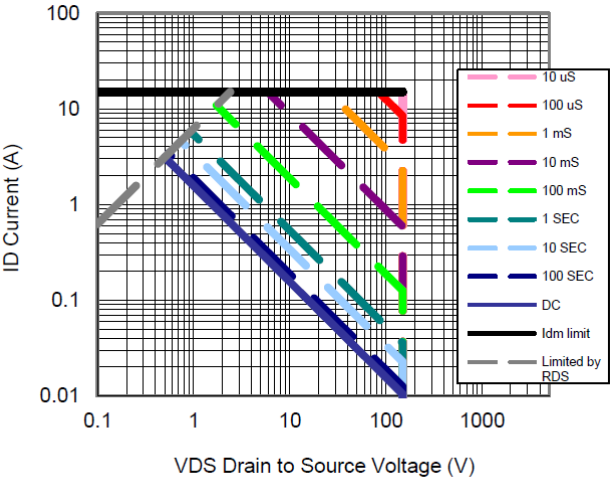
CHARACTERISTIC CURVES



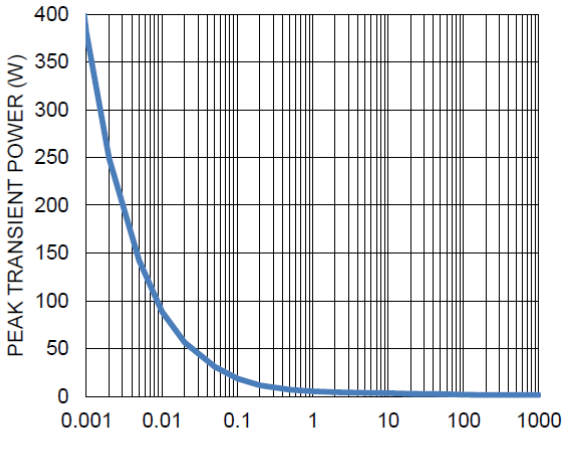
7. Gate Charge



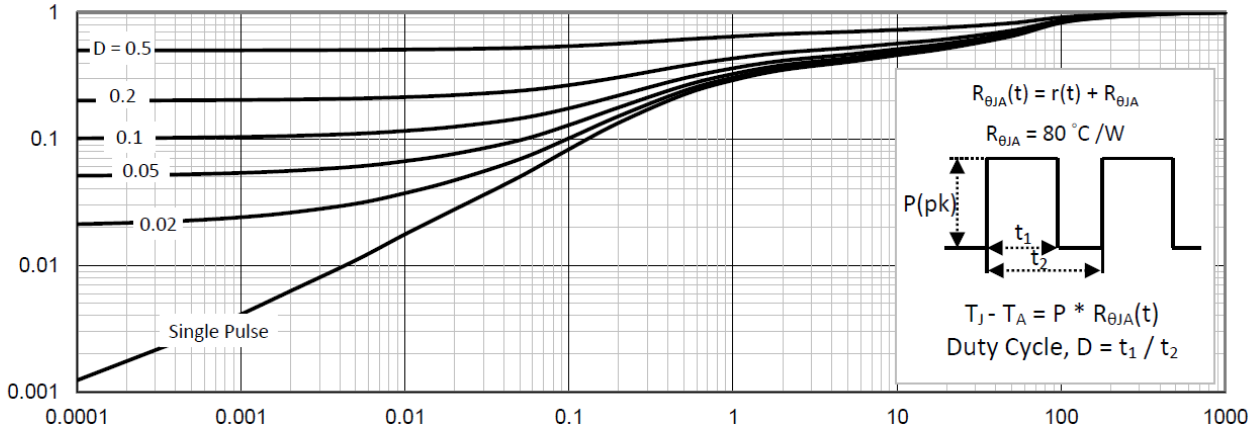
8. Normalized On-Resistance Vs Junction Temperature



9. Safe Operating Area



10. Single Pulse Maximum Power Dissipation



11. Normalized Thermal Transient Junction to Ambient